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Critical Area Regulations Ordinance 24-097 (ECAF 2024-2646)					
Hearing Date: Wednesday, January 15, 2025 @ 10:30 A.M.					
Council Staff: Ryan Countryman		PDS Staff: Sarah Titcomb		DPA: Justin Kasting	
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2.0 Planning Commission					
2.0003	Staff Report	04/09/24	Terri Strandberg and Sarah Titcomb, PDS Staff	Briefing to Planning Commission: Critical Area Regulations Review and Update	34
2.0090	Letter	06/27/24	Planning Commission	Planning Commission Recommendation	2
3.1 ECAF and Materials					
3.1.001	ECAF	10/16/24	Executive/PDS	Transmitting Executive initiated Ordinance	2
3.1.002	Ordinance	10/16/24	Executive/PDS	Introduced Ordinance	106
3.1.003	Introduction	10/16/24	Councilmember Nate Nehring	Introduction Slip	1
3.2 Council Planning Committee Materials					
3.2.001	Staff Report	12/17/24	Ryan Countryman, Council Staff	Council Staff Report	1
3.2.002	PowerPoint	12/17/24	Sarah Titcomb, PDS	Presentation at Planning Committee	17 slides
3.2.003	Minutes	12/17/24	Council Staff	Link to Minutes and Video of Planning Committee Meeting 12/17/24	1
3.3 Correspondence, Comments, Testimony					
3.3.001	E-Mail	12/10/24	Caleb Kleiman	Public Testimony	2
3.3.002	E-Mail	12/14/24	William Lider	Public Testimony	3

3.3.003	E-Mail	12/16/24	Kate Lunceford	Public Testimony	1
3.3.004	E-Mail	12/16/24	Julie Martinson	Public Testimony	1
3.3.005	E-Mail	12/16/24	Lynsey Sandum	Public Testimony	2
3.3.006	E-Mail	12/16/24	Tim Trohimovich	Public Testimony	6
3.3.007	E-Mail	12/16/24	Debbie Wetzel	Public Testimony	2
3.3.008	E-Mail	12/17/24	Greg Ferguson	Public Testimony	1
3.3.009	E-Mail	12/17/24	Kara Whittaker	Public Testimony	3
3.3.010	E-Mail	12/31/24	Caleb Kleiman	Public Testimony	4
3.3.011	E-Mail	01/01/25	Kim Baumgartner	Public Testimony	1
3.3.012	E-Mail	01/01/25	Vonita Francisco	Public Testimony	1
3.3.013	E-Mail	01/01/25	Sally Lider	Public Testimony	1
3.3.014	E-Mail	01/01/25	Carol McMahon	Public Testimony	1
3.3.015	E-Mail	01/02/25	Brooks Bennett	Public Testimony	1
3.3.016	E-Mail	01/02/25	Kathryn Lewandowsky	Public Testimony	1
3.3.017	E-Mail	01/03/25	Eliza Aronson	Public Testimony	57
3.3.018	E-Mail	01/03/25	Karen Crowley	Public Testimony	1
3.3.019	E-Mail	01/05/25	Marilyn Ridings	Public Testimony	1
3.3.020	E-Mail	01/06/25	Nadine Shanti	Public Testimony	1
3.4 Staff Reports and Submissions					
3.5 Public Participation					
3.6 Council Deliberations					
3.6.001	Amendment	12/13/24	Councilmembers Mead and Nehring	Proposed Amendment Sheet 1	3

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1.0003	Staff Research	December 2012	Staff	Interagency Regulatory Guide: Advance Permittee-Responsible Mitigation, U.S Army Corps of Engineers, Ecology, WDFW	14
1.0004	Public Outreach	4/11/2024	Commerce	60 Day Notice, Department of Commerce acknowledgment	2
1.0005	Project Administration	August 2023	Staff	Internal scope memo with potential CAR updates	4
1.0006	Project Administration	7/19/2023	Staff	Internal scope presentation on RMZs	7
1.0007	Project Administration	8/16/2023	Staff	Internal scope presentation on CAR updates	31
1.0008	Project Administration	12/6/2023	Staff	Internal scope memo on CMZs	3
1.0009	Project Administration	August 2022	Staff	Internal CAR Review and Update kick-off	28
1.0010	Project Administration	9/21/2023	Staff	CAR update schedule	1
1.0011	SEPA Documents	4/25/2024	Staff	SEPA DNS postcard notification	1
1.0012	SEPA Documents	4/25/2024	Staff	SEPA DNS and Checklist	25
1.0013	SEPA Documents	4/25/2024	Staff	SEPA distribution list	3
1.0014	SEPA Documents	4/29/2024	Staff	SEPA publication confirmation from Ecology	1
1.0015	Public Outreach	November 2023	Staff	6th Newsletter with article requesting BAS from the public - English	8
1.0016	Public Outreach	November 2023	Staff	6th Newsletter with article requesting BAS from the public - Spanish	7
1.0017	Public Outreach	November 2023	Staff	6th Newsletter with article requesting BAS from the public - Korean	7
1.0018	Project Administration	1/12/2023	Staff	Correspondence with SWM regarding BAS	2
1.0019	Project Administration	3/15/2023	Staff	Correspondence with DPW regarding BAS	21
1.0020	Project Administration	3/10/2023	Staff	Stillaguamish Watershed Council BAS Correspondence	4
1.0021	Public Comment	3/17/2023	Snoqualmie Tribe	Snoqualmie Tribe correspondence on BAS	122
1.0022	Public Comment	9/15/2023	Futurewise	Correspondence about CAR schedule	2
1.0023	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.62A SCC posted online for 21-day comment period	71
1.0024	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.62B SCC posted online for 21-day comment period	26
1.0025	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.62C SCC posted online for 21-day comment period	11

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1.0026	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.43C SCC posted online for 21-day comment period	2
1.0027	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.86 SCC posted online for 21-day comment period	1
1.0028	Public Outreach	1/12/2024	Staff	Preliminary Draft Definitions posted online for 21-day comment period	3
1.0029	Public Outreach	1/17/2024	Staff	Email notification to distribution list about 21 day public comment period	2
1.0030	Public Outreach	1/17/2024	Staff	Email notification to key parties about 21 day public comment period	2
1.0031	Public Outreach	1/17/2024	Staff	Press release notifying public of 21 day comment period	2
1.0032	Public Outreach	1/17/2024	Staff	Press release posting notification	1
1.0033	Public Outreach	1/17/2024	Staff	Social media postings about 21 day comment period	4
1.0034	Public Outreach	4/1/2024	Staff	Key parties list	7
1.0035	Public Comment	2/7/2024	Staff	21 day comment log	1
1.0036	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts - Scarborough	3
1.0037	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Neunzig	3
1.0038	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Krueger	4
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1.0040	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Luckie	3
1.0041	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Shaph	2
1.0042	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Rushing	2
1.0043	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts - DeLeone	3
1.0044	Public Comment	1/18/2024	Public	Public Comment on preliminary drafts -Tamber	2
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1.0046	Public Comment	1/18/2024	Public	Public Comment on preliminary drafts -Legare	2
1.0047	Public Comment	1/19/2024	Public	Public Comment on preliminary drafts -San Filippo	4
1.0048	Public Comment	1/22/2024	Public	Public Comment on preliminary drafts -Higgins	3
1.0049	Public Comment	1/24/2024	Public	Public Comment on preliminary drafts -Pattison	7
1.0050	Public Comment	1/23/2024	Public	Public Comment on preliminary drafts -Petso	2
1.0051	Public Comment	1/24/2024	Public	Public Comment on preliminary drafts -Sears	32
1.0052	Public Comment	1/29/2024	Public	Public Comment on preliminary drafts -Payne	6
1.0053	Public Comment	1/29/2024	Public	Public Comment on preliminary drafts -Spore	3
1.0054	Public Comment	1/31/2024	Public	Public Comment on preliminary drafts -Danson	2
1.0055	Public Comment	2/2/2024	Public	Public Comment on preliminary drafts -Atkins	73

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1.0057	Public Comment	2/6/2024	Public	Public Comment on preliminary drafts -Pozarycki	101
1.0058	Public Comment	2/6/2024	Public	Public Comment on preliminary drafts -Krueger	11
1.0059	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Gray	10
1.0060	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Trohimovich	18
1.0061	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Gray	4
1.0062	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Danson	178
1.0063	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Irish	8
1.0064	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Lyshall	4
1.0065	Project Administration	3/27/2024	Staff	Internal responses to public comments	9
1.0066	Project Administration	3/27/2024	Staff	Internal memo incorporating public comments into drafts	28
1.0067	Public Outreach	11/14/2023	Staff	CAR Update presentation to Ag Board	11
1.0068	Public Outreach	2/13/2024	Staff	CAR Update presentation to Ag Board	13
1.0069	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - English	9
1.0070	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - Spanish	9
1.0071	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - Korean	9
1.0072	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - Vietnamese	9
1.0073	Public Outreach	3/23/2023	Staff	Correspondence with Ecology	3
1.0074	Public Outreach	9/20/2023	Staff	Correspondence with Ecology	2
1.0075	Public Outreach	12/4/2023	Staff	Correspondence with Ecology	2
1.0076	Public Outreach	2/16/2024	Staff	Correspondence with Ecology	169
1.0077	Public Outreach	3/1/2024	Staff	Correspondence with Ecology	43
1.0078	Public Outreach	3/13/2024	Staff	CAR Update presentation to Snohomish Farm Bureau	13
1.0079	Public Comment	2/29/2024	Staff	Correspondence with Health Department	3
1.0080	Public Outreach	2/22/2023	Staff	Correspondence with King Co	11
1.0081	Public Outreach	5/2/2023	Staff	Correspondence with King Co	3
1.0082	Public Outreach	5/11/2023	Staff	Correspondence with King Co	8
1.0083	Public Outreach	1/23/2024	Staff	Correspondence with MBA	5
1.0084	Project Administration	2/23/2024	Staff	Internal notes on MBA meetings	2
1.0085	Public Comment	3/12/2024	Staff	MBA public comment on interrupted buffers	3
1.0086	Public Outreach	10/19/2023	Staff	CAR update presentation to SCT - PAC	12
1.0087	Public Outreach	3/14/2024	Staff	CAR update presentation to SCT - PAC	13
1.0088	Public Outreach	2/26/2024	Staff	CAR update presentation to SLS	13
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1.0093	Public Comment	12/7/2023	Staff	Correspondence with WDFW	4
1.0094	Staff Research	10/18/2023	Staff	Linking Kelp Science and Policy workshop #2	5
1.0095	Public Outreach	2/14/2024	Staff	Presentation on CARA to WUCC	6
1.0096	Public Outreach	1/12/2024	Staff	CAR website update	2
1.0097	Public Outreach	2/22/2024	Staff	CAR website update	2
1.0098	Public Outreach	5/2/2024	Staff	CAR website update	2
1.0099	Public Outreach	4/24/2024	Staff	Email notification of Planing Commission public hearing - key parties	1
1.0100	Public Outreach	4/24/2024	Staff	Email notification of Planing Commission public hearing - distribution list	2
1.0101	Public Outreach	4/24/2024	Staff	Email notification of Planing Commission public hearing - 21 day public commenters	1
1.0102	Project Administration	Jan 2024	Staff	CAR Monitoring Report	106
1.0103	Staff Research	March 2021	Ecology	Critical Aquifer Recharge Areas Guidance	149
1.0104	Staff Research	8/31/2023	Ecology	WRIA 5 Exempt Well Connections	1
1.0105	Staff Research	Oct 2023	Ecology	Appendix B Stillaguamish Reservation Accounting Report: Sept 26, 2005 - Dec 31, 2022	2
1.0106	Staff Research	Oct 2023	Ecology	Appendix A Stillaguamish Reservation Accounting Report: Sept 26, 2005 - Dec 31, 2022	2
1.0107	Staff Research	Oct 2023	Ecology	Stillaguamish Reservation Accounting Report: Sept 26, 2005 - Dec 31, 2022	2
1.0108	Staff Research	2023	Staff	Snohomish County Board of Health Ordinance No. BOH23-01	142
1.0109	Staff Research	May 1993	Ecology	Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems	22
1.0110	Staff Research	Jan 2017	DOH	Wellhead Protection Program Guidance Document	116
1.0111	Staff Research	7/31/2018	DOH	Wellhead Protection Areas: Protecting Drinking Water	5
1.0112	Staff Research	2007	Ecology	Education about Stormwater	4
1.0113	Staff Research	Feb 2015	Ecology	Permit-Exempt Domestic Well Use in Washington State	33
1.0114	Staff Research	Oct 2015	Ecology	Mitigation Options for the Impacts of New Permit-Exempt Groundwater Withdrawals	85
1.0115	Staff Research	Nov 2022	Commerce	Critical Areas Checklist	11
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1.0118	Staff Research	April 2023	WDFW	Riparian Management Zone Checklist for Critical Areas Ordinances	5
1.0119	Staff Research	2/19/2010	Staff	New Chapter 365-196 WAC adopted language	92
1.0120	Staff Research	5/3/2001	Staff	New Chapter 365-195 WAC adopted language	5
1.0121	Staff Research	2/27/2015	Staff	New Chapter 365-190 WAC adopted language	22
1.0122	Staff Research	6/19/2008	Staff	Chapter 173-218 WAC Underground Injeciton Control Program	36
1.0123	Public Comment	1/31/2023	Public	Comment on Comp Plan	10
1.0124	Staff Research	Oct 2022	Ecology	Wetland Guidance for Critial Areas Ordinance (CAO) Updates	101
1.0125	Staff Research	Jan 2020	Commerce	Critical Area Checklist	10
1.0126	Staff Research	June 2016	Ecology	Wetland Guidance for CAO Updates	65
1.0127	Staff Research	2022	Staff	Voluntary Stewardship Program (VSP)	1
1.0128	Staff Research	Dec 2018	Commerce	Summary of Critical Area WAC Amendments	18
1.0129	Staff Research	6/9/1988	Staff	Chapter 173-154 WAC Protection of upper aquifer zones	5
1.0130	Staff Research	June 2018	Commerce	Critical Areas Handbook	442
1.0131	Staff Research	March 2006	Staff	Revised Draft Summary of Best Available Science for Critical Areas	196
1.0132	Staff Research	4/7/2015	Staff	Draft Summary Snohomish County 2015 Best Available Science Review for Critical Area Regulation Update - CAR BAS addendum for Ordinance 15-034	14
1.0133	Staff Research	1/13/2021	Staff	KNKX article, Settlement agreement says state must protect endangered species from polluted runoff	4
1.0134	Staff Research	Nov 2022	Ecology	Focus on: Voluntary Clean Water Guidance for Agriculture	2
1.0135	Staff Research	Dec 2022	Ecology	Voluntary Clean Water Guidance for Agriculture Chapters, Chapter 6	56
1.0136	Staff Research	Dec 2022	Ecology	Voluntary Clean Water Guidance for Agriculture Chapters, Chapter 12	444
1.0137	Staff Research	Dec 2022	Ecology	Voluntary Clean Water Guidance for Agriculture Introduction	12
1.0138	Staff Research	1/8/2021	Commerce	Case No. C16-1866-JCC Stipulated Order of Dismissal	16
1.0139	Staff Research	June 2022	WA GS	Landslide Hazard Mapping in Washington	2
1.0140	Staff Research	July 2022	WA GS	Landslide Inventory of Portions of Snohomish County, WA	13
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1.0142	Staff Research	Feb 2004	Ecology	Stillaguamish River Comprehensive Flood Hazard Management Plan	215

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1.0144	Staff Research	Sep 2010	Staff	Snohomish County Natural Hazard Mitigation Plan Update Volume 1: Planning-Area-Wide Elements	28
1.0145	Staff Research	2000	USACE	Preliminary design proposal for treatment of the Hazel and Goldbasin Landslides	17
1.0146	Staff Research	6/19/2000	Staff	Steelhead Haven Landslide	50
1.0147	Staff Research	2010	Staff	Chapter 14: Landslides and Other Mass Movements	13
1.0148	Staff Research	10/18/1999	Staff	Hazel/Gold Basin Landslides: Geomorphic Review Draft Report	25
1.0149	Staff Research	3/26/2014	Staff	Seismic Signals generated by the Oso Landslide	10
1.0150	Staff Research	4/26/2001	Staff	Steelhead Haven Landslide Remediation Feasibility Study	59
1.0151	Staff Research	2014	USGS	Preliminary Interpretation of Pre-2014 Landslide Deposits in the Vicinity of Oso, Washington	6
1.0152	Staff Research	Aug 2019	Staff	Towards ecologically functional riparian zones	8
1.0153	Staff Research	2/19/2023	Clark Co	Designating Riparian Habitat Areas Using WAC 222 Site Class and 200-year Site Potential Tree Height	22
1.0154	Staff Research	July 2022	WDFW	WDFW GMA Assistance	5
1.0155	Staff Research	July 2020	WDFW	Riparian Ecosystems, Volume 1	304
1.0156	Staff Research	Dec 2020	WDFW	Riparian Ecosystems, Volume 2	75
1.0157	Staff Research	Dec 2023	DOH	Water Quality Poilcy Presentation	13
1.0158	Staff Research	2018	DOH	UIC Final Language Update	13
1.0159	Staff Research	2019	Ecology	2019 SMMWW - Volume 1, Section 1.4 IC Program	44
1.0160	Staff Research	Sep 2000	EPA	State Implementation Guide, Revisions to the Underground Injection Control Regulations for Class V Injection Wells	51
1.0161	Staff Research	June 2021	Ecology	Underground Injection Control (UIC) Stormwater Management Program (SWMP) Components	7
1.0162	Staff Research	6/11/2008	EPA	Clarification on which stormwater infiltration practices/technologies have the potential to be regulated as "Class V" wells by the Underground Injection Control Program	6
1.0163	Staff Research	June 2003	EPA	When is a septic system regulated as a Class V Well?	4
1.0164	Staff Research	June 2003	EPA	When are storm water discharges regulated as Class V wells?	2
1.0165	Staff Research	April 2022	Staff	Potential effects on groundwater quality associated with infiltrating stormwater through dry wells for aquifer recharge	58
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1.0168	Staff Research	Sep 2008	Staff	Design requirements for infiltration trenches with soils considered a treatment BMP	2
1.0169	Staff Research	April 2020	EPA	Underground Injection Control Program	2
1.0170	Staff Research	April 2013	Staff	Groundwater Protectiveness Demonstrations	86
1.0171	Staff Research	April 2010	FEMA	Floodplain Management and the Endangered Species Act Checklist for Programmatic Compliance	28
1.0172	Staff Research	Jan 2012	FEMA	Floodplain Management and the Endangered Species Act A Model Ordinance	87
1.0173	Staff Research	9/22/2008	Commerce	Endangered Species Act Section 7 Fromal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the on-going National Flood Insurance Program carried out in the Puget Sound area in Washington State	238
1.0174	Staff Research	4/20/2009	NMFS	National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion Environmental Protection Agency Registration of Pesticides Containing Carbaryl, Carbofuran, and Methomyl	609
1.0175	Staff Research	5/19/2021	Staff	ESA Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response	407
1.0176	Staff Research	2010	Staff	4 abstracts	3
1.0177	Staff Research	Feb 2010	Ecology	Marine Shoreline Armoring and Puget Sound	8
1.0178	Staff Research	Sep 2016	Commerce	Building Cities in the Rain	55
1.0179	Staff Research	12/23/2009	Staff	Conservation Tools: An Evaluation and Comparison of th eUse of Certain Land Preservation Mechanisms	86
1.0180	Staff Research	2023	DNR	ShoreZone Inventory	4
1.0181	Staff Research	Jan 2022	DNR	Watershed Resilience Action Plan	100
1.0182	Staff Research	July 2014	Ecology	A Methodology for Delineating Planning-Level Channel Migration Zones	83
1.0183	Staff Research	July 2018	Ecology	Modifications for Habitat Score Ranges	5
1.0184	Staff Research	Oct 2014	Ecology	Washington State Wetland Rating System	212
1.0185	Staff Research	March 2012	Ecology	Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington	169

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1.0187	Staff Research	April 2021	Ecology	Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance	275
1.0188	Staff Research	Dec 2022	Ecology	Washington's Water Quality Management Plan to Control Nonprofit Sources of Pollution	285
1.0189	Staff Research	1/28/2010	Staff	U.S. Fish & Wildlife Services Proposes Dramatic Expansion of Critical Habitat for Threatened Bull Trout	4
1.0190	Staff Research	Feb 2010	Ecology	Shorelands and Environmetnal Assistance Program: Healthy shorelines equal a healthy Puget Sound	5
1.0191	Staff Research	Dec 2021	Staff	Jay Inslee, Saving out struggling salmon	9
1.0192	Staff Research	2022	Staff	Kelp and eelgrass	
1.0193	Staff Research	May 2020	Staff	Puget Sound Kelp Conservation and Recovery Plan	63
1.0194	Staff Research	Oct 2023	Staff	Puget Sound Kelp Conservation and Recovery Plan: Status Update	73
1.0195	Staff Research	3/21/2022	Staff	WA Creaes first sea grass and kelp sanctuary off Everett	5
1.0196	Staff Research	June 2009	WDFW	Land use planning for salmon, steelhead and trout: A land use planner's guide to salmonid habitat proteciton and recovery	119
1.0197	Staff Research	2022	Staff	Links for critical area information	1
1.0198	Staff Research	March 1997	DNR	A Marine and Estuarine Habitat classificaiton system for Washington State	57
1.0199	Staff Research	Oct 2007	Staff	Protecting nearshore habitat and functions in Puget Sound: An interim guide	134
1.0200	Staff Research	Dec 2005	Ecology	Protecting Aquatic Ecosystems: A guide for Puget Sound planners to understand watershed processes	171
1.0201	Staff Research	Jan 2023	PSP	Action Items	46
1.0202	Staff Research	Oct 2023	PSP	2022-2026 Action Agenda Executive Summary	6
1.0203	Staff Research	Aug 2013	FEMA	Floodplain Habitat Assessment and Mitigation: Regional Guidance for the Puget Sound Basin	50
1.0204	Staff Research	3/3/2009	Staff	Study: Combining pesticides makes them more deadly for fish	4
1.0205	Staff Research	8/1/2017	BLM	Site Potential Tree Height Spatial Data Standard	18
1.0206	Staff Research	May 2023	Staff	Watershed Restoration and Enhancement Plan Review Report	37
1.0207	Staff Research	2020	Staff	2020 State of Our Watersheds: A Report by the Treaty Tribes in Western Washington	390

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1.0209	Staff Research	Dec 2009	WDFW	Appendix B: Landscape Planning for Washington Wildlife	132
1.0210	Staff Research	Dec 2009	WDFW	Landscape Planning for Washington Wildlife: Managing for Biodiversity in Developing Areas	163
1.0211	Staff Research	2023	SPU	Watershed Processes and Aquatic Resources: A literature review	70
1.0212	Staff Research	6/16/2008	WDFW	Eelgrass/Macroalgae Habitat Interim Survey Guidelines	6
1.0213	Staff Research	2014	WDFW	Marine Shoreline Design Guidelines	419
1.0214	Staff Research	2024	WDFW	Your Marine Waterfront: A guide to protecting your property while promoting healthy shorelines	48
1.0215	Staff Research	2021	Staff	Urban Stormwater Runoff: A major Pathway for Anthropogenic Particles, Black Rubbery Fragments, and Other Types of Microplastics to Urban Receiving Waters	9
1.0216	Staff Research	2/9/2016	Whatcom Co	Whatcom County Critical Areas Ordinance 2016 Update - Best Available Science Review: Addendum to the 2005 BAS Report	35
1.0217	Staff Research	Nov 2000	Staff	Stillaguamish River Ecosystem Restoration Puget Sound and Adjacent Waters Authority Final Environmental Assessment	155
1.0218	Staff Research	Nov 2000	Staff	Stillaguamish River Ecosystem Restoration Final Feasibility Report	284
1.0219	Staff Research	12/9/2021	Ecology	Public Hearing: Chapter 173-201A WAC Salmon Spawning Habitat Protection Rule	42
1.0220	Staff Research	June 2022	Ecology	Stormwater Treatment of the Contaminants Best Management Practices Effectiveness	72
1.0221	Staff Research	2022	NMFS	Coho Salmon spawner mortality in western U.S. urban watersheds: bioinfiltration prevents lethal stormwater impacts	36
1.0222	Staff Research	10/8/2015	Staff	Toxic road runoff kills adult coho salmon in hours, study finds	4
1.0223	Staff Research	1/13/2021	Staff	Settlement agreement says state must protect endangered species from polluted runoff	3
1.0224	Staff Research	7/26/2018	Staff	Roads to ruin: conservation threats to a sentinel species across an urban gradient	15
1.0225	Staff Research	2023	Staff	Roads to ruin abstract	1
1.0226	Staff Research	2023	Staff	Eelgrass Trend Monitoring Map for Snohomish	2
1.0227	Staff Research	2023	Staff	Forage Fish Spawning Map abstract and link	2

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1.0229	Staff Research	2023	Staff	Marine Vegetation Mappin gof Port Susan and Hat Island abstract	2
1.0230	Staff Research	2022	Staff	Marine Vegetation Mapping of South Snohomish County	10
1.0231	Staff Research	2022	Staff	Marine Vegetation Mapping of South Snohomish County abstract	2
1.0232	Staff Research	2021	Staff	Marine Vegetation Mapping of the Snohomish Delta	10
1.0233	Staff Research	2021	Staff	Marine Vegetation Mapping of the Snohomish Delta abstract	2
1.0234	Staff Research	Sep 2020	Staff	Railroad Grade Beach Nourishment Study	171
1.0235	Staff Research	2020	Staff	Snohomish Beach Nourishment Monitoring Report abstract	1
1.0236	Staff Research	2017	Staff	Science and Salmon Recovery	23
1.0237	Staff Research	2/14/2019	Staff	Benefit Cost Analysis of Shore Friendly Practices in Island County	25
1.0238	Staff Research	Sep 2012	Staff	Estuary Resotration Target Update to the Stillaguamish Chinook Recovery Plan	6
1.0239	Staff Research	May 2017	Staff	Stillaguamish Tribe of Indians Natural Resources Climate Change Adaptation Plan	107
1.0240	Staff Research	July 2018	Staff	Puget Sound Restoration Additonal Actions Could Improve assessments of Progress	94
1.0241	Staff Research	Feb 2021	Staff	Landscape , density-dependent, and bioenergetic influences unpon Chinook Salmon - abstract	3
1.0242	Staff Research	Feb 2021	Staff	Landscape , density-dependent, and bioenergetic influences unpon Chinook Salmon -	165
1.0243	Staff Research	11/1/2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook Salmon	23
1.0244	Staff Research	Sept 2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook Salmon - abstract	1
1.0245	Staff Research	2/16/2012	Staff	Beaver in Tidal Marshes: Dam Effects on Low-Tide Channel Pools and Fish Use of Estuarine Habitat	12
1.0246	Public Comment	4/15/2024	DNR	Public comment on CAR amendments from DNR	4
1.0247	Public Comment	4/19/2024	Ecology	Public comment on CAR amendments from Ecology	78
1.0248	Public Comment	4/25/2024	Olympic View	Public comment on CAR amendments from Olympic View Water and Sewer District	3
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1.0252	Staff Research	2012	Staff	Beaver in Tidal Marshes: Dam Effects on Low-Tide Channel Pools and Fish Use of Estuarine Habitat - abstract	1
1.0253	Staff Research	2005	Staff	Juvenile salmonid use of constructed and natural side channels in Pacific Northwest rivers	11
1.0254	Staff Research	2005	Staff	Juvenile salmonid use of constructed and natural side channels in Pacific Northwest rivers - abstract	1
1.0255	Staff Research	9/30/2015	Staff	Summary of projected changes in physical conditiosn in the Stillaguamish Watershed and ceded area	30
1.0256	Staff Research	Oct 2018	Staff	Sealevel rise considerations for nearshore restoration proejcts in Puget Sound	41
1.0257	Staff Research	11/22/2018	Staff	Influences of valley form and land use on large river and floodplain habitats in Puget Sound	13
1.0258	Staff Research	9/30/15	Staff	Stillaguamish Tribe natural resources climate chagne vulnerability assessment	102
1.0259	Staff Research	2/8/2016	Staff	Woody debris target update of the Stillaguamish chinook recovery plan	14
1.0260	Staff Research	2018	Staff	Tidal flat-wetland systems as flood defenses: Understanding biogeomorphic controls	14
1.0261	Staff Research	2018	Staff	Tribal habitat strategy	12
1.0262	Staff Research	10/1/2020	Staff	The acquisition strategy of the Stillaguamish chinook recovery plan	30
1.0263	Staff Research	3/8/2023	Staff	Comparison of Channel Migration Zone Methodology	5
1.0264	Staff Research	Nov 2003	Staff	A framework for delineating channel migration zones	135
1.0265	Staff Research	Feb 2015	Staff	Screening tools for identifying migrating stream channels in Western Washington	40
1.0266	Staff Research	2010	Staff	Regional guidance for hydrologic and hydraulic studies	28
1.0267	Staff Research	2010	Staff	Regional guidance for hydrologic and hydraulic studies - abstract	1
1.0268	Staff Research	Oct 2022	Staff	6PPD in road runoff assessment and mitigation strategies	234
1.0269	Staff Research	2022	Staff	6PPD in road runoff assessment and mitigation strategies - abstract	1

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1.0272	Staff Research	2017	Staff	Effects of urban tree canopy loss on land surface temperature magnitude and timing	16
1.0273	Staff Research	2017	Staff	Effects of urban tree canopy loss on land surface temperature magnitude and timing - abstract	1
1.0274	Staff Research	2009	Staff	Is denser greener? An evaluation of higher density development as an urban stormwater-quality best management practice	15
1.0275	Staff Research	2009	Staff	Is denser greener? An evaluation of higher density development as an urban stormwater-quality best management practice - abstract	1
1.0276	Staff Research	Nov 2015	Staff	Strategies for protecting and restoring Puget Sound B-IBI basins	118
1.0277	Staff Research	Nov 2015	Staff	Strategies for protecting and restoring Puget Sound B-IBI basins - abstract	1
1.0278	Staff Research	2022	Staff	Quantifying the stormwater runoff volume reduction benefits of urban street tree canopy	9
1.0279	Staff Research	2022	Staff	Quantifying the stormwater runoff volume reduction benefits of urban street tree canopy - abstract	1
1.0280	Staff Research	2021	Staff	City of Seattle tree canopy assessment final report	53
1.0281	Staff Research	2021	Staff	City of Seattle tree canopy assessment final report - abstract	2
1.0282	Staff Research	May 2018	Staff	Stormwater action monitoring status and trends study of Puget Lowland ecoregion streams: Evaluaiton of the first year (2015) of monitoring data	229
1.0283	Staff Research	May 2018	Staff	Stormwater action monitoring status and trends study of Puget Lowland ecoregion streams: Evaluaiton of the first year (2015) of monitoring data -abstract	1
1.0284	Staff Research	2009	Staff	Exploring the role of vegetation fragmentation on aquatic conditions: Linking upland with riparian areas in Puget Sound lowland streams	10
1.0285	Staff Research	2016	Staff	Multiscale impacts of armoring on Salish Sea shorelines: Evidence for cumulative and threshold effects	12

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1.0288	Staff Research	2007	Staff	The impact of urban patterns on aquatic ecosystems: An empirical analysis in Puget lowlands sub-basins	17
1.0289	Staff Research	2007	Staff	The impact of urban patterns on aquatic ecosystems: An empirical analysis in Puget lowlands sub-basins - abstract	1
1.0290	Staff Research	2017	Staff	Extinction risk of western north American freshwater mussels: Anodonta Nuttalliana, the Anodonta Oregonensis/Kennerlyi Clade, Gonidea Angulata, and Margaritifera Falcata	18
1.0291	Staff Research	2017	Staff	Extinction risk of western north American freshwater mussels: Anodonta Nuttalliana, the Anodonta Oregonensis/Kennerlyi Clade, Gonidea Angulata, and Margaritifera Falcata - abstract	1
1.0292	Staff Research	2004	Staff	Reviving urban streams: land use, hydrology, biology, and human behavior	14
1.0293	Staff Research	2004	Staff	Reviving urban streams: land use, hydrology, biology, and human behavior - abstract	1
1.0294	Staff Research	2022	Staff	Our failure to protect the stream and its valley: A call to back off from riparian development	12
1.0295	Staff Research	2022	Staff	Our failure to protect the stream and its valley: A call to back off from riparian development - abstract	1
1.0296	Staff Research	2011	Staff	Landscape ecotoxicology of Coho salmon spawner mortality in urban streams	11
1.0297	Staff Research	2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook salmon	23
1.0298	Staff Research	2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook Salmon - abstract	1
1.0299	Staff Research	4/26/2012	Staff	Structural and non-structural BMPs for protecting streams	18
1.0300	Staff Research	2001	Staff	Spatial effects of urbanization on physical conditions in Puget Sound Lowland streams	108

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1.0302	Staff Research	April 2013	Staff	Squalicum Creek and Soos Creek: Bioassessment monitoring and analysis to support total maximum daily load (TMDL) development - abstract	1
1.0303	Staff Research	April 2013	Staff	Squalicum Creek and Soos Creek: Bioassessment monitoring and analysis to support total maximum daily load (TMDL) development - appendicies	165
1.0304	Staff Research	Jan 2013	Staff	Woods Creek Watershed Habitat Conditions Report	52
1.0305	Staff Research	Jan 2013	Staff	Woods Creek Watershed Habitat Conditions Report - abstract	1
1.0306	Staff Research	2021	Staff	Factors Limiting Progress in Salmon Recovery	49
1.0307	Staff Research	10/31/2013	Staff	Revised restoration targets for the Stillaguamish estuary	9
1.0308	Staff Research	2022	Staff	Habitat assessment and restoration planning (HARP) model for the Snohomish and Stillaguamish River basins	150
1.0309	Staff Research	June 2014	Staff	Influence of climate and land cover on river discharge in the North Fork Stillaguamish River	41
1.0310	Staff Research	June 2005	Staff	Stillaguamish Watershed Chinook Salmon Recovery Plan	187
1.0311	Staff Research	9/25/2014	Staff	Peak flows and Chinook survival in the Stillaguamish watershed special prioritization for conservation and restoration action	95
1.0312	Staff Research	Sep 2000	Staff	Technical assessment and recommendations for Chinook salmon recovery in the Stillaguamish watershed	151
1.0313	Staff Research	May 1999	Staff	Snohomish County Ground Water Management Plan	297
1.0314	Staff Research	March 2005	Staff	Wetlands in Washington State Volume 1: A synthesis of the science	532
1.0315	Staff Research	April 2005	Staff	Wetlands in Washington State Volume 2: Guidance for Protecting and Managing Wetlands	398
1.0316	Staff Research	June 2023	Staff	State of Washingon Priority Habitats and Species List	299
1.0317	Staff Research	June 2023	Staff	Distribution of priority habitat and species by County	38
1.0318	Staff Research	10/19/2015	Staff	Ecological Systems of Washington state. A Guide to identification	398
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1.0322	Staff Research	2016	Staff	Washington Natural Heritage Program 2016 Ecological Systems List	5
1.0323	Staff Research	1996	Staff	Washington Natural Heritage Program List of Mosses	4
1.0324	Staff Research	2011	Staff	Washington Natural Heritage Program List of Lichens	4
1.0325	Staff Research	2011	Staff	Washington Natural Heritage Program List of Macrofungi	3
1.0326	Staff Research	2012	Staff	Washington Natural Heritage Program List of Marine Algae	2
1.0327	Staff Research	Jan 2024	Staff	Washington Natural Heritage Program List of Animal Species with Ranks	66
1.0328	Staff Research	Dec 2008	Staff	Making Mitigation Work	40
1.0329	Public Comment	5/23/2024	Tulalip Tribes	Public comment on CAR update	7
1.0330	Public Comment	5/28/2024	Staff	DPW comment on CAR update	23
1.0331	Public Comment	5/30/2024	Snoqualmie Tribe	Public comment on CAR update	3
1.0332	Public Comment	6/3/2024	Public	Public comment/questions on CAR update	2
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1.0336	Public Comment	6/17/2024	Public	Public comment on CAR update from Futurewise	11
1.0337	Public Comment	7/9/2024	Olympic View	Public comment/questions on CAR update	11
1.0338	Public Comment	8/2/2024	Public	Public comment on CAR update - Edmonds Environmental Council on CARAs	1
1.0339	Public Comment	8/2/2024	Public	2024 Madrona Stormwater Sampling Results - from Edmonds Environmental Council	76
1.0340	Public Comment	7/8/2024	DFW	Process questions on CAR update	2
1.0341	Public Comment	7/16/2024	Public	Public comment on CAR update - PSP	1
1.0342	Public Comment	7/26/2024	Ecology	Draft Public comment on CAR update	10
1.0343	Public Comment	7/29/2024	Ecology	Public comment on CAR update - letter to Council	4
1.0344	Staff Research	12/1/2006	Ecology	Guidance for UIC Wells that Manage Stormwater (05-10-067)	17
1.0345	Staff Research	12/1/2016	Ecology	Industrial Stormwater General Permit - Implementation Manual for Log Yards (04-10-031)	43
1.0346	Staff Research	6/13/2008	USEPA	Memorandum: Clarification on which stormwater infiltration practices/technologies have potential to be regulated as "Class V" wells by the Underground Injection Control Program	6

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1.0349	Staff Research	2014	Staff	2014 CAR Index of Record for Ordinance 15-034 (Compliance Update)	17
1.0350	Staff Research	2017	Staff	2017 CAR Index of Record for Ordinance 17-039 (Appeal)	4
1.0351	Staff Research	2013	Staff	CAR Index of Record for Ordinance 13-042 (Agriculture)	16
1.0352	Staff Research	2015	Staff	BAS Annotated Bibliography for Ordinance 15-034	40

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2.0004	Legislative Documents	4/9/2024	PDS Staff	Attachment A - annotated bibliography	33
2.0005	Legislative Documents	4/9/2024	PDS Staff	Attachment B - chapter 30.62A SCC_4-8-24	72
2.0006	Legislative Documents	4/8/2024	PDS Staff	Attachment C - chapter 30.62B SCC_4-8-24	28
2.0007	Legislative Documents	4/8/2024	PDS Staff	Attachment D - 2024 draft revisions CARA_v4_4-8-24	13
2.0008	Legislative Documents	4/8/2024	PDS Staff	Attachment E - chapter 30.43C SCC	6
2.0009	Legislative Documents	4/8/2024	PDS Staff	Attachment F - chapter 30.86 SCC	60
2.0010	Legislative Documents	4/8/2024	PDS Staff	Attachment G - Subtitle 30.9	4
2.0011	Legislative Documents	4/8/2024	PDS Staff	Attachment H - Critical Area Checklist 2022	12
2.0012	Public Outreach	4/22/2024	PDS Staff	Presentation (Briefing)	17
2.0013	Public Outreach	5/28/2024	Planning Commission	Planning Commission Written Meeting Minutes (Briefing)	5
2.0014	Public Outreach	4/24/2024	Planning Commission	Planning Commission Recording of Meeting (Briefing)	NA
2.0015	Public Outreach	5/14/2024	Planning Commission	Planning Commission Agenda (Hearing)	2
2.0016	Public Outreach	6/5/2024	The Herald	Affidavit of Agenda publication in The Herald (Hearing)	3
2.0017	Legislative Documents	5/13/2024	PDS Staff	Memo: Response to Planning Commissioner Questions	7
2.0018	Legislative Documents	5/13/2024	PDS Staff	Memo: Additional Chapter 30.62A SCC Proposed Amendments	2
2.0019	Legislative Documents	5/13/2024	PDS Staff	Proposed Amendments: chapter 30.62A SCC	72
2.0020	Public Outreach	6/25/2024	Planning Commission	Planning Commission Written Meeting Minutes (Hearing)	4
2.0021	Public Outreach	5/28/2024	Planning Commission	Planning Commission Meeting Recording (Hearing)	NA
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2.0023	Public Testimony	5/22/2024	Vail, Marilyn	Letter of Public Testimony	1
2.0024	Public Testimony	5/22/2024	Riordan, Janet	Letter of Public Testimony	1
2.0025	Public Testimony	5/22/2024	Bennett, Brooks	Letter of Public Testimony	1
2.0026	Public Testimony	5/22/2024	Wade, Valerie	Letter of Public Testimony	1
2.0027	Public Testimony	5/22/2024	Cooper, Laurie	Letter of Public Testimony	1
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2.0029	Public Testimony	5/22/2024	Monroe, Christy	Letter of Public Testimony	1
2.0030	Public Testimony	5/23/2024	Sebring, Sally	Letter of Public Testimony	1
2.0031	Public Testimony	5/23/2024	Byrd, Karen	Letter of Public Testimony	1
2.0032	Public Testimony	5/23/2024	Lauzon, Charlene	Letter of Public Testimony	1
2.0033	Public Testimony	5/23/2024	Shemeta, Susan	Letter of Public Testimony	1
2.0034	Public Testimony	5/23/2024	Singer, Connie	Letter of Public Testimony	1
2.0035	Public Testimony	5/23/2024	Jamison, Vanessa	Letter of Public Testimony	1
2.0036	Public Testimony	5/23/2024	Fortner, Wayne	Letter of Public Testimony	1
2.0037	Public Testimony	5/23/2024	Young, Connie	Letter of Public Testimony	1
2.0038	Public Testimony	5/23/2024	Master Builders Association (Pattison, Mike)	Letter of Public Testimony	3
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2.0046	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	2022 State of Salmon in Watersheds Executive Summary	32
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2.0048	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	2020 State of Our Watersheds State of Our Watersheds	390
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2.0051	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Riparian Ecosystems, Volume 2 Management Recommendations	80
2.0052	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Wetlands in Washington State Volume 1 A Synthesis of the Science	532
2.0053	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Critical Aquifer Recharge Areas Guidance Document	149
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2.0055	Public Testimony	5/28/2024	Karimi,Parnian	Letter of Public Testimony	1
2.0056	Public Testimony	5/28/2024	Heydrick, Stanley	Letter of Public Testimony	1
2.0057	Public Testimony	5/28/2024	Lider, Sally	Letter of Public Testimony	1
2.0058	Public Testimony	5/28/2024	Sandvig, Daniel	Letter of Public Testimony	1
2.0059	Public Testimony	5/28/2024	Benedict, Derek	Letter of Public Testimony	1
2.0060	Public Testimony	5/28/2024	Kuhn, Susan	Letter of Public Testimony	1
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2.0062	Public Testimony	5/28/2024	Olympic View Water and Sewer District (Danson, Bob)	Letter of Public Testimony	2
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2.0071	Legislative Documents	6/6/2024	PDS Staff	Attachment A -updated annotated bibliography	36
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2.0077	Legislative Documents	4/8/2024	PDS Staff	Attachment G - Subtitle 30.9	4
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2.0079	Legislative Documents	5/13/2024	PDS Staff	Further Amendments to Chap 30.62A SCC_5-3-24	2
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2.0084	Public Outreach	7/23/2024	Planning Commission	Planning Commission Written Meeting Minutes (Deliberations)	7
2.0085	Public Outreach	6/26/2024	Planning Commission	Planning Commission Recording of Meeting (Deliberations)	N/A
2.0086	Public Testimony	6/24/2024	PDS Staff	Advance mitigation amendment response	3
2.0087	Public Testimony	6/24/2024	Campbell, Tom	Advance mitigation amendment	1
2.0088	Public Testimony	6/25/2024	Campbell, Tom	Proposed Amendments Tonight	1
2.0089	Public Testimony	6/3/2024	Campbell, Tom	Questions on CAR Compliance	2
2.0090	Public Outreach	6/27/2024	Planning Commission	Recommendation Letter to County Council	2

Contact the Clerk of the Council for copies of Part 2 Exhibits - 425-388-3494 or contact.council@snoco.org

SNOHOMISH COUNTY COUNCIL
SNOHOMISH COUNTY, WASHINGTON

ORDINANCE NO. 24-097

RELATING TO THE CRITICAL AREA REGULATIONS UPDATE PURSUANT TO THE GROWTH MANAGEMENT ACT, AMENDING SNOHOMISH COUNTY CODE CHAPTERS 30.62A WETLANDS AND FISH AND WILDLIFE HABITAT CONSERVATION AREAS, 30.62B GEOLOGICALLY HAZARD AREAS, 30.62C CRITICAL AQUIFER RECHARGE AREAS, 30.43C FLOOD HAZARD PERMITS, 30.86 FEES, AND 30.91 DEFINITIONS

WHEREAS, Revised Code of Washington (RCW) 36.70A.060 and RCW 36.70A.170 require counties and cities to designate critical areas and adopt regulations to protect them; and

WHEREAS, the County designated critical areas and adopted protective regulations on March 7, 1995 [Ordinance No. 94-108] with amendments adopted on April 30, 1996 [Amended Ordinance No. 96-011]; and

WHEREAS, RCW 36.70A.130(1) directs counties planning under the Growth Management Act (GMA) to take periodic legislative action to review and, if needed, revise its comprehensive plan and development regulations, including critical area regulations, to ensure that the plan and regulations are consistent with the GMA; and

WHEREAS, in 1995, the GMA was amended to require that cities and counties include the best available science (BAS) in developing policies and development regulations to protect the functions and values of critical areas and to give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries [RCW 36.70A.172]; and

WHEREAS, in light of this amendment to the GMA related to the inclusion of BAS and the requirement in RCW 36.70A.130 to periodically review development regulations, the County conducted a review of its existing critical areas regulations together with a review of the BAS; and

WHEREAS, the County prepared a document entitled *Draft Summary of Best Available Science for Critical Areas, March 2006,* and updated the critical area regulations in 2006 in accordance with recommendations from the BAS [Amended Ordinance No 06-061]; and

WHEREAS, the County has regularly reviewed the critical area regulations as new BAS became available and adopted updates to the regulations in 2010, 2013, 2015, 2017, 2019, and 2022 [Amended Ordinance No. 10-026; Amended Ordinance No. 10-086; Amended Ordinance No. 13-042; Amended Ordinance No. 15-034; Amended Ordinance No. 15-042; Amended Ordinance No. 15-103; Amended Ordinance No.17-039; Amended Ordinance No. 19-020; Amended Ordinance No. 19-022; and Amended Ordinance No. 22-062]; and

WHEREAS, as an initial step to prepare for the required 2024 review and update of the critical area regulations, the County invited the public, state agencies, tribes, stakeholder groups, and internal County departments to contribute BAS documents for the county to review; and

WHEREAS, the County compiled the collection of BAS and prepared an annotated bibliography to supplement the *Draft Summary of Best Available Science for Critical Areas*; and

WHEREAS, as a result of the internal county review of existing regulations, review of state requirements and guidance, and review of the BAS collected by the county, several potential updates to the existing critical areas regulations where identified; and

WHEREAS, the County drafted an updated version of the critical area regulations and released the drafts for a public comment period from January 16th through February 7th, 2024, prior to submittal to the Snohomish County Planning Commission (Planning Commission); and

WHEREAS, many of the public comments received during the pre-Planning Commission review period were incorporated into the updated draft critical area regulations and included in the draft code amendments formally sent to the Planning Commission for their review; and

WHEREAS, the County prepared and issued a Determination of Non-significance (DNS) under the State Environmental Policy Act, RCW 43.21C on May 1, 2024; and

WHEREAS, the Planning Commission held a briefing on the critical area regulations on April 23, 2024; a public hearing on the updated critical area regulations on May 28, 2024; and began deliberations on May 28, 2024, concluding their deliberations on June 25, 2024, after reviewing the entire public record; and

WHEREAS, the Planning Commission forwarded their letter to the Snohomish County Council (County Council) on June 27, 2024, recommending adoption of the proposed code amendments as presented to them by staff, but including one additional amendment; and

WHEREAS, on _____,2024, the County Council held a public hearing after proper notice, and considered public comment and the entire record related to the code amendments contained in this ordinance; and

WHEREAS, following the public hearing, the County Council held deliberations on Ordinance No. _____ considering the entire record on the critical areas regulations as amended during the public hearing process on _____, 2024;

NOW, THEREFORE BE IT ORDAINED:

Section 1. The County Council makes the following findings:

A. The County Council adopts and incorporates the foregoing recitals as findings as if set forth fully herein.

B. This ordinance will amend Title 30 SCC to revise the critical area regulations in chapters 30.62A, 30.62B, and 30.62C SCC, as well as related amendments in chapters 30.43C, 30.86, and 30.91 SCC. The amendments are intended to ensure compliance with the Growth Management Act (GMA), state and federal requirements and guidance, and best available

science (BAS). The amendments also make housekeeping amendments and increase consistency within and across chapters of Title 30 SCC.

C. In developing the code amendments, the County considered the goals and requirements of the GMA as follows:

1. The County conducted the periodic review of the regulations required in RCW 36.70A.130 including review for updates to the state law, guidelines, and court decisions; checklists prepared by state agencies to facilitate local critical area review; and recently published BAS found through staff research, or submitted to the County by key parties, by state agencies, or by other interested individuals.

2. The amendments are consistent with the following goals of the GMA in RCW 36.70A.020:

a. (6) Property rights. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.

The critical area regulations are consistent with Goal 6 because the regulations do not unduly restrict the use of property; the requirements are well supported by a preponderance of recommendations from valid science without applying extreme measures, or outliers, that would result in excessive loss of use by property owners. For smaller sized properties where most or all of the property may be encumbered by critical area protection measures, the critical area code offers a reasonable use provision.

b. (7) Permits. Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.

Amendments to the critical area regulations increase the clarity of the code requirements and improves consistency in interpretation and permit review by providing more detail and specifics to guide both reviewers and applicants.

c. (8) Natural resource industries. Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forestlands and productive agricultural lands and discourage incompatible uses.

The critical area regulations are consistent with Goal 8 because regulations place a substantive focus on the protection of fish habitat and the natural ecological processes that support and create fish habitat. The regulations also support agriculture by offering an alternative path for compliance that is designed around best management practices compatible with farming.

d. (9) Open space and recreation. Retain open space and green space, enhance recreational opportunities, enhance fish and wildlife habitat, increase access to natural resource lands and water, and develop parks and recreation facilities.

The critical area regulations are consistent with Goal 9 because measures used to protect critical areas involve the protection of vegetated buffers along streams, lake and marine shorelines, and around wetlands. The regulations and amendments support connections between buffers and include requirements to protect habitat for critical species. The code provisions allow for trails and access to critical areas subject to standards that maintain ecologically protective buffer functions and protect public health and welfare.

e. (10) Environment. Protect and enhance the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.

   The critical area regulations are consistent with Goal 10 because the protection of native vegetation in buffers supports ecological functions contributing to the protection of air and water quality, and provides green space important to human health. In addition, use limitations within areas important for groundwater recharge reduce the potential for groundwater contamination, preserves hydrologic connections, and protects groundwater sources relied upon for public consumption.

f. (11) Citizen participation and coordination. Encourage the involvement of citizens in the planning process, including the participation of vulnerable populations and overburdened communities, and ensure coordination between communities and jurisdictions to reconcile conflicts.

   The critical area regulations are consistent with Goal 11 because the County solicited public involvement in the collection of BAS, offered early and continuous opportunity to comment on draft code language, invited public participation in the process under the State Environmental Policy Act [chapter 43.21C RCW], and provided opportunity for the public to attend and contribute testimony to the Snohomish County Planning Commission and the County Council public hearing processes.

g. (14) Climate change and resiliency. Ensure that comprehensive plans, development regulations, and regional policies, plans, and strategies under RCW 36.70A.210 and chapter 47.80 RCW adapt to and mitigate the effects of a changing climate; support reductions in greenhouse gas emissions and per capita vehicle miles traveled; prepare for climate impact scenarios; foster resiliency to climate impacts and natural hazards; protect and enhance environmental, economic, and human health and safety; and advance environmental justice.

   The critical area regulations are consistent with Goal 14 to the extent that they protect native vegetation helping to mitigate impacts of climate change and provide some protective measures for public health and safety from natural hazards that may be exacerbated by climate change.

h. (15) Shorelines of the state. For shorelines of the state, the goals and policies of the shoreline management act as set forth in RCW 90.58.020 shall be considered an element of the County's or city's comprehensive plan.

The critical area regulations are consistent with Goal 15 since they contain protective measures specifically addressing areas defined as shorelines of the state in chapter 90.58 RCW, including Type S streams and lakes, and marine waters, 100-year floodplains, and wetlands associated with shoreline water bodies. The Shoreline Management Act guidelines [WAC 173-26-221(2)] describe shoreline ecological functions as directly comparable to the functions and values attributed to critical areas and buffers described in the County's BAS: hydrologic functions, habitat functions, and water quality functions.

3. The updates to the critical area regulations are consistent with RCW 36.70A.172 which requires that recommendations from BAS be used to support designation and protection of critical areas and that special consideration must be given to anadromous fisheries.

a. In 2006, the County adopted the *Draft Summary of Best Available Science* (2006 BAS) that was prepared in advance of updating the existing critical area regulations. To support this current update, the County reviewed 177 additional research reports, guidance documents, fact sheets, and articles published since 2006, and prepared an appendix to the 2006 BAS summary consisting of an annotated bibliography describing the focus and recommendations from each source.

b. Special consideration is focused on anadromous fisheries by providing stringent protective regulatory measures to waters containing anadromous fish species and through adding more focus on recent science addressing elements of the marine nearshore environment, and kelp and eel grass beds important to early life cycle stages of juvenile salmonids.

c. The amendments address special consideration for anadromous fisheries by seeking BAS from individuals and agencies with fisheries expertise recommending higher levels of protection, specifically wider riparian buffers, on waters that contain fish.

d. The Washington Administrative Code (WAC) 365-190-130(4)(b) identifies specific sources of BAS for habitats and species of local importance that are a part of fish and wildlife habitat conservation areas. The WAC provision notes that priority habitats and species (PHS) identified by the Washington Department of Fish and Wildlife (WDFW) and the Washington Department of Natural Resources (DNR) Natural Heritage Program (WNHP) lists of high-quality ecological communities and systems and rare plants must be consulted by the County when designating habitats and species of local importance. The amendments to the critical area regulations comply with this WAC provision as they include a new section within Chapter 30.62A SCC designating the habitats and species on the PHS and WNHP lists as critical species and habitats to be protected.

D. RCW 36.70A.100 requires coordinated planning between local and regional jurisdictions. The County participates on the Puget Sound Regional Council (PSRC) and Snohomish County Tomorrow (SCT) to develop coordinated policies at the regional and countywide levels. The amendments to the critical area regulations are consistent with multicounty and countywide planning policies as follows:

1. The multicounty planning policies (MPPs) are contained in VISION 2050, a document prepared in a cooperative effort led by PSRC. MPPs implemented by the critical area regulation amendments include the following:

a. MPP Env GOAL The region cares for the natural environment by protecting and restoring natural systems, conserving habitat, improving water quality, and reducing air pollutants. The health of all residents and the economy is connected to the health of the environment. Planning at all levels considers the impacts of land use, development, and transportation on the ecosystem.

b. MPP-En-5 Locate development in a manner that minimizes impacts to natural features. Promote the use of innovative environmentally sensitive development practices, including design, materials, construction, and on-going maintenance.

c. MPP-En-6 Use the best information available at all levels of planning, especially scientific information, when establishing and implementing environmental standards established by any level of government.

d. MPP-En-11 Designate, protect, and enhance significant open spaces, natural resources, and critical areas through mechanisms, such as the review and comment of countywide planning policies and local plans and provisions.

e. MPP-En-13 Preserve and restore native vegetation and tree canopy, especially where it protects habitat and contributes to overall ecological function.

f. MPP-En-14 Identify and protect wildlife corridors both inside and outside the urban growth area.

g. MPP-En-16 Preserve and enhance habitat to support healthy wildlife and accelerate the recovery of salmon, orca, and other threatened and endangered species and species of local importance.

h. MPP-En-17 Maintain and restore natural hydrological functions and water quality within the region's ecosystems and watersheds to recover the health of Puget Sound.

2. The countywide planning policies (CPPs) are prepared in a cooperative effort between the County and the cities within the County through SCT. CPPs implemented by the amendments to the critical area regulations include the following:

a. Env-1 All jurisdictions shall protect and enhance natural ecosystems through their comprehensive plans, development regulations, capital facilities programs, and management practices. Jurisdictions should work collaboratively, employing integrated and interdisciplinary approaches, to consider regional and countywide strategies and assessments, as well as best available qualitative and quantitative information, in formulating plans and regulations that are specific to their community.

b. Env-4 The county and cities should identify and protect, enhance, or restore wildlife corridors and important habitat areas that support designated species of local or state significance, such as orca and salmon, and those areas that are critical for survival of endangered or threatened species.

c. Env-8 The county and cities shall work to maintain and improve air and water quality and ensure that all residents have equitable access to clean air and water.

3. The updates to the critical area regulations are consistent with, and implement the following goals, objectives, and policies from the Natural Environment element of the County's GMA comprehensive plan:

a. Objective NE 1.A Balance the protection of the natural environment with economic growth, housing needs and the protection of property rights.

b. NE Policy 1.A.1 Regulatory programs developed for the protection of the natural environment shall provide certainty, clarity, flexibility, efficiency, public outreach and education so that citizens understand the requirements, permits are processed quickly, and alternative approaches that provide equal or greater protection to the environment may be considered.

c. NE Policy 1.B.1 The county shall consider comprehensive land use plan designations and development regulations that take into account:

Subsection (a) environmental sensitivity and ecological functions and values;

Subsection (b) limitations of ground and surface water quantities; and

Subsection (c) potential impacts on surface and ground water quality.

d. Objective NE 1.C Protect and enhance natural watershed processes, wetlands, fish and wildlife habitat conservation areas, shorelines, and water resources with the long-term objective of protecting ecological function and values.

e. NE Policy 1.C.1 The county shall continue to protect water resources and natural watershed processes by maintaining the quality, rates and supplies of water, sediment, and woody debris through the use of a variety of strategies, such as:

Subsection (a) maintaining the natural hydrologic cycle and minimizing alterations of natural drainage patterns;

Subsection (b) encouraging alternative impervious surface techniques;

Subsection (c) providing for the retention of natural vegetation;

f. NE Policy 1.C.2 The county shall continue to protect and enhance wetlands and fish and wildlife habitat conservation areas through the use of a variety of strategies, such as:

> Subsection (a) including best available science in plans and programs;
> . . .
> Subsection (c) coordinating the use of agricultural resource lands with the protection, restoration and/or enhancement of ecological functions and values;

g. Objective NE 1.D The county shall protect the health, safety, welfare and the economy of the community by minimizing the risks associated with natural hazards.

h. GOAL NE 3 Comply with the requirements of state, federal and local laws for protecting and managing critical areas, shorelines, and water.

i. Objective NE 3.A Develop regulatory policies that apply to elements of the natural environment.

j. NE Policy 3.A.1 The county shall designate and protect critical areas including fish and wildlife habitat conservation areas, wetlands, critical aquifer recharge areas, frequently flooded areas and geologically hazardous areas and include best available science in the development of programs, policies and regulations relating to critical areas.

k. NE Policy 3.A.2 The county shall establish development regulations that offer flexibility in site design to accommodate innovative solutions for critical area protection where site constraints or critical area characteristics warrant use of a creative approach. Flexibilities may be considered on a site-by-site basis. Examples of innovative options include but are not limited to buffer width averaging, on- or off-site enhancement or restoration projects, use of best management practices, or a combination of creative solutions.

l. NE Policy 3.A.3 The county shall evaluate immediate and cumulative effects on the natural environment, critical areas, shorelines and buildable land inventory when formulating development regulations, including but not limited to, stormwater management, clearing, and grading.

m. NE Policy 3.A.4 The county shall evaluate the level of risk of damage or injury to people, property and the environment when formulating development regulations.

n. NE Policy 3.A.5 The county shall design development regulations to avoid or minimize impacts to the ecological functions and values of critical areas.

o. NE Policy 3.A.6 The county should generally require that mitigation for impacts to the natural environment be located in the following sequential order of preference: on-site, in the same sub-basin, in the same watershed, or in another appropriate ecosystem.

p. NE Policy 3.A.7 The county shall consider a variety of strategies for the permanent protection of critical areas.

q. NE Policy 3.A.8 The county shall consider the recommendations contained in watershed management plans and salmon recovery plans in drafting development regulations.

r. Objective NE 3.B Designate and protect fish and wildlife habitat conservation areas and wetlands pursuant to the Growth Management Act.

s. NE Policy 3.B.1 Vegetated areas in and adjacent to wetlands and fish and wildlife habitat conservation areas shall be established to protect their ecological functions and values and include special consideration for the protection of water-dependent and riparian-dependent fish and wildlife.

t. NE Policy 3.B.2 The county should maintain a fish and wildlife corridor map for critical habitat.

u. NE Policy 3.B.3 The county shall adopt special provisions for the protection of unique wetlands such as bogs, fens, estuarine wetlands, coastal lagoon wetlands, wetlands with old growth forests, and wetlands with unique or rare wildlife or plant communities.

v. NE Policy 3.B.4 The county shall adopt vegetation retention standards to protect fish and wildlife habitat conservation areas and limit the use of invasive and non-native plant species that may adversely impact such habitat.

w. NE Policy 3.B.5 The county shall protect state and federal officially designated threatened and endangered species and their habitat conservation areas, as prescribed by state and federal law.

x. NE Policy 3.B.6 The county should develop a legislative approval process for the purpose of nominating and protecting species and habitats of local importance.

y. NE Policy 3.B.7 The county shall protect critical saltwater habitats such as eelgrass and kelp beds, shellfish areas, forage fish spawning areas and coastal lagoons.

z. NE Policy 3.B.8 The county shall include special consideration to conserve, protect and enhance anadromous fish and their habitat in policies and regulations.

aa. NE Policy 3.B.9 The county should adopt a water typing system and wetland classification system consistent with state guidelines.

bb. NE Policy 3.B.10 The county shall require that alterations to wetlands and fish and wildlife habitat conservation areas be avoided or minimized to protect ecological functions and values consistent with the GMA's requirement of ensuring no net loss of the functions and values of critical areas.

cc. Objective NE 3.C Designate and protect critical aquifer recharge areas pursuant to the Growth Management Act.

dd. NE Policy 3.C.1 The county shall establish a groundwater management program to protect groundwater quality, assure groundwater quantity, and provide efficient management of water resources for meeting future needs while protecting existing water rights.

ee. NE Policy 3.C.2 The county shall establish development regulations that include a variety of strategies for protecting groundwater.

ff. Objective NE 3.D Designate and protect frequently flooded areas pursuant to the Growth Management Act.

gg. NE Policy 3.D.1 To protect public health, safety and welfare, the county shall preserve natural floodplain and watershed processes to:

Subsection (a) Maintain natural flood storage capacity;

Subsection (b) Preserve natural drainage and conveyance systems;

Subsection (c) Avoid increases in flood elevations; and

Subsection (d) Prevent downstream flooding.

hh. NE Policy 3.D.2 The county shall allow only those developments and land uses in floodplains that are compatible with floodplain processes.

ii. NE Policy 3.D.3 The county should meet the requirements of the National Flood Insurance Program.

jj. NE Policy 3.D.4 The county should participate in the National Flood Insurance Program Community Rating System (CRS).

kk. NE Policy 3.D.5 The county should incorporate new science and analysis of flood hazards into its regulations and mapping as they become available, including accounting for increases in future flood flows, sea level rise and tsunami risk.

ll. NE Policy 3.D.6 Flood regulations should allow for volume of on-site or in-floodplain excavation to offset volume or fill.

mm. NE Policy 3.D.7 The county should promote programs that assist private landowners with projects that reduce damage from stream and river bank erosion and flooding.

nn. Objective NE 3.E Designate and protect geologic hazard areas pursuant to the Growth Management Act.

oo. NE Policy 3.E.1 The county should avoid development in landslide hazard areas and minimize development in erosion hazard areas commensurate with the level of risk.

pp. NE Policy 3.E.2 The county shall develop regulations that are consistent with geologic constraints and the All Hazards Vulnerability Assessment and the Snohomish County Natural Hazards Mitigation Plan.

qq. NE Policy 3.E.3 The county shall require that development proposals include where appropriate a geotechnical assessment of the site's susceptibility to known geologic hazards.

rr. NE Policy 3.E.4 The county shall require that development standards incorporate practices and techniques to reduce potential damage from seismic, tsunami, mine, erosion, landside and volcanic hazards.

ss. NE Policy 3.E.5 The county should only allow development in the channel migration zone that has a low risk to public health, safety and property.

E. The processes used to prepare the proposed amendments to the critical area regulations are consistent with the following procedural requirements:

1. Under Snohomish County Code, this ordinance meets requirements as a Type 3 legislative action under SCC 30.73.010.

2. As required by RCW 36.70A.106(1), a notice of intent to adopt the proposed code amendments was transmitted to the Washington State Department of Commerce for distribution to state agencies on April 11, 2024.

3. State Environmental Policy Act (SEPA), chapter 43.21 RCW, requirements with respect to this non-project action have been satisfied through the completion of an environmental checklist and the issuance of a determination of non-significance on May 1, 2024.

a. A DNS is adequate in this case because the code amendments, which are supported by recommendations from BAS, are expected to provide environmental protection and avoid, minimize, or mitigate for potential impacts from new development activities.

b. The DNS was published in the newspaper of broad local circulation, *The Everett Herald*, on May 1, 2024, along with notice of a 14-day public comment period.

c. The DNS was sent via email to the County's SEPA distribution list which includes, interested parties, community groups, and state agencies on May 1, 2024, including notice of the 14-day comment period.

d. The DNS was posted on the County's website page dedicated to the critical area regulations update along with a link to provide comments within the 14-day comment period.

4. The public process associated with the proposed updates to the critical area regulations is consistent with public notice and participation requirements in RCW 36.70A.035 as follows:

a. Notice was provided to interested parties via announcements and presentations at meetings with committees and community groups, emails to County contact lists, and posting on the County website alerting the public about opportunities to: (1) submit best available science documents for review and inclusion into the project record; (2) review and comment on draft code versions prior to beginning the Planning Commission's public hearing process; and (3) attend presentations summarizing the proposed amendments to the critical area regulations.

b. Notice was provided to interested parties via email, County website, official news release, and through publication in the local newspaper alerting the public about: (1) release of SEPA documentation and opportunity for public comment; and (2) notice of public hearings before the Planning Commission and the County Council.

5. In accordance with SCC.30.73.040, the proposed amendments were sent to the Snohomish County Planning Commission for review and recommendation to approve, amend, or disapprove the proposal.

a. After proper public notice per SCC 30.73.050, the Planning Commission held a briefing on the proposed amendments to the critical area regulations on April 23, 2024; a public hearing on May 28, 2024; and began deliberations on May 28, 2024, concluding their deliberations on June 25, 2024, after reviewing the entire public record.

b. During deliberations the Planning Commission discussed two main issues:

i. The importance of alerting the County Council to the Planning Commission's concerns about the ability to achieve the necessary balance between protecting the County's natural environment and the creation of housing for the region's growing population with respect to potential land area dedicated to buffers for critical area protection rather than to housing development; and

ii. A proposed code amendment to include all future updates to the list of Priority Habitat and Species (PHS) created by the Washington State Department of Fish and Wildlife (WDFW) when identifying species and habitats of local importance, instead of relying only on the PHS list most recently updated in 2023.

c. After deliberations and review of the entire record, the Planning Commission voted to recommend to the County Council approval of the proposed critical area code update with one additional amendment incorporating reliance on all future updates to the PHS list made by WDFW.

6. After review of the Planning Commission's recommendation including the amendment to the critical area code update, the Snohomish County Executive prepared an alternative to the Planning Commission's PHS amendment:

a. The Executive's alternative amendment relies on the PHS Program list as of 2023 as originally proposed, and then clarifies that the Washington Department of Natural Resources (DNR) Natural Heritage Program (WNHP) identifies rare and high-quality ecosystems and rare plants as of 2024. The alternative amendment also includes a new provision for annual review of the lists from the PHS Program and the WNHP to watch for and incorporate updates.

b. The Executive's alternative amendment is included in the proposed code amendments at SCC 30.62A.465 and forwarded to the County Council in place of the Planning Commission's version.

7. The Executive has also recommended amendments to the Planning Commission's recommended version of chapter 30.62C SCC to address public comments by Group A Public Water Systems related to protection of wellhead zones associated with public water supply sources. The Executive recommends the following revisions:

a. In SCC 30.62C.140, based on the inadvisability of mitigation for potential impacts to the public water supply, avoidance of impacts should be the required standard within Group A wellhead protection zones to protect public health.

b. In SCC 30.62C.150, 30.62C.340, and 30.62C.345, language has been added to advise that comments and conditions recommended by Group A water systems related to protection of their Group A wellhead protection zones may be included as conditions on certain permits or approvals issued by the county.

c. SCC 30.62C.340 has been shortened by removing requirements for UIC wells and creating a new SCC 30.62C.345 addressing UIC wells that require special conditions. This is largely an organizational change with minor wording changes; the content remains consistent with the Planning Commission recommendation, except as noted in (E)(7)(b) above.

8. This ordinance also includes housekeeping amendments recommended by the Executive throughout the CAR that were not presented to the Planning Commission. Within Part 400 of chapter 30.62A SCC, for instance, there are three new sections with proposed amendments to ensure consistent language across the CAR. These include new amendments in SCC 30.62A.420, SCC 30.62A.430, and SCC 30.62A.450 to update how the code refers to critical species and habitats to be consistent with SCC 30.62A.410. Additionally, amendments are made to SCC 30.62A.010, SCC 30.62A.410 and SCC 30.91C.370 to include all state listed sensitive species in the code instead of calling them out by name and to add habitats of local importance to the list of fish and wildlife habitat conservation areas protected under chapter 30.62A SCC.

9. The Washington State Attorney General last issued an advisory memorandum, as required by RCW 36.70A.370, in September of 2018 entitled *Advisory Memorandum and Recommended Process for Evaluating Proposed Regulatory and Administrative Actions to Avoid the Unconstitutional Takings of Private Property* to help local governments avoid the unconstitutional taking of private property. The process outlined in the State Attorney

General's 2018 advisory memorandum was used by the County in objectively evaluating the regulatory changes proposed by this ordinance.

F. The proposed code amendments to the critical area regulations are consistent with the record as follows:

1. The code amendments are consistent with the record as set forth in the PDS communications to the Snohomish County Planning Commission dated April 9, 2024, May 3, 2024, June 11, 2024, and June 28, 2024.

2. The code amendments are consistent with the recommendations from the BAS to first avoid disruptions to critical areas and buffers, but where avoidance is not possible, potential impacts must be minimized and mitigated such that there is no net loss of ecological functions. The BAS provides a range of recommendations for measures that will prevent, minimize, and mitigate potential impacts. These recommendations vary depending on the type of critical area, a variety of existing conditions that may be present, the existing ecological functions and values, as well as on the types of impacts that may result from new development of varying types and intensities. Also considered is whether the recommended measures will provide protection for critical area functions and values, or whether the protective measures are designed to protect public health and safety. A BAS report was created in 2006 called *Revised Draft Summary of Best Available Science for Critical Areas*, and the 2024 CAR update produced an annotated bibliography to supplement the 2006 report. The BAS reviewed for the 2024 update covers a variety of topics, including but not limited to, marine and nearshore habitats, wetland guidance and mitigation, salmon and wildlife habitat, riparian protection, shoreline modifications, emerging knowledge of contaminants harmful to fish and water quality, groundwater, and guidance for UIC wells, and clean water guidance for agriculture.

3. The code amendments updating the critical area regulations are described below. The purpose and reasoning upon which the amendments are based is also provided. Generally, the amendments are based on recommendations from BAS, implementation and procedural improvements, improved clarity for permit applicants and staff, or housekeeping corrections.

a. Chapter 30.43C SCC – Flood Hazard Permits is amended:

i. *Additional submittal requirements – SCC 30.43C.030:*

The amendment provides a cross reference to the habitat assessment and management plan submittal requirements within SCC 30.62A.460 that also apply to projects proposed within the special flood hazard area. BAS indicates that the special flood hazard area is a primary association area for critical fish species during flood events, thus triggering the need for habitat assessment and management plans when applying for flood hazard permits. This amendment codifies current practice as required under the National Flood Insurance Program.

b. Chapter 30.62A SCC – Wetlands and Fish and Wildlife Habitat Conservation Areas is amended:

i. *Purpose and applicability – SCC 30.62A.010:*

Housekeeping amendment to add “habitats of local importance” within the fish and wildlife habitat conservation areas of (1)(b) to be consistent with the amendments within Part 400 and the amended definition of critical areas within SCC 30.91C.340.

ii. *Submittal requirements – SCC 30.62A.130:*

SCC 30.62A.130(1)(f): Amendments to how far outside of the site applicants need to display wetlands and fish and wildlife habitat areas on the site plan. This amendment requires critical areas on the site and within 300 feet of the project site to be shown on the site plan, this is the same as the existing code. The amendment removes the “or the width of the widest potential buffer from the site boundaries” from the provision as this is already included in the 300 feet and as written often confuses staff and applicants. The amendment is proposed by staff to streamline permit application requirements. The amendment will not remove the need to display onsite buffers on the critical area study map.

SCC 30.62A.130(1)(i): Addition based on guidance in the 2022 Department of Ecology "Wetland Guidance for Critical Areas Ordinance (CAO) Updates" publication #22-06-014 to include proposed stormwater facilities and their estimated area of intrusion into buffers on the site plan at submittal.

SCC 30.62A.130(2)(e) and (f): Adding a requirement to submit wetland field delineation worksheets and wetland categorization worksheets at submittal, where applicable. If a development proposal will not impact wetlands, and a critical area study is not required, the applicant must still display wetlands on the site plan. In order for staff to confirm the accurate location of these potential wetlands and buffers on the site, these two worksheets are required. The addition is to clarify this requirement for applicants and will likely result in a more efficient review of permits as staff will not have to ask for this documentation after the first review.

iii. *Critical area study content requirements – SCC 30.62A.140:*

Housekeeping amendment to change “director” to “department” throughout the section, as well as inserting language requiring that the critical area study must be prepared by a qualified professional. This is based on 2022 Ecology wetland guidance, publication #22-06-014. The CAR amendments also provide a new definition of qualified professional to ensure this is implemented consistently. Further housekeeping amendments within (2) and (3) update the referenced documentation to reflect the most recently published, and new language in (15) clarifies that submittal checklists can be the source of necessary information for applications.

S*CC 30.62A.140(7) and (8):* Adding requirement to show the buffer locations and any functionally and effectively disconnected areas from buffers within the critical area

study. Amendments are based on 2022 Ecology wetland guidance, publication #22-06-014, and connecting this code section to amendments later in the chapter.

SCC 30.62A.140(13): To be consistent with later amendments within SCC 30.62A.460, adding that a habitat management plan is required for any activity within a habitat of local importance, special flood hazard area, or a Priority Habitat Species (PHS) area mapped by WDFW.

iv. *Mitigation plan requirements – SCC 30.62A.150:*

Amendment to ensure that mitigation plans are prepared by qualified professionals, similar to the amendments for the preparation of critical area studies. This amendment is based on guidance received from the Washington State Department of Fish and Wildlife (WDFW).

SCC 30.62A.150(1): A 2008 Federal Mitigation Rule (U.S. Army Corps of Engineers, Department of Defense; and Environmental Protection Agency, "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule, April 10, 2008) requires mitigation plans for wetlands and fish and wildlife habitat conservation areas to incorporate 12 essential components. Ecology's 2022 Wetland guidance provides suggested language to ensure the 12 components are represented in code. The existing County Code includes much of the required components and amendments to (1) help ensure full compliance with the 2008 Rule. No net loss is clearly stated as the requirement within SCC 30.62A.310 (general standards and requirements), as well as within the monitoring program in SCC 30.62A.710, the existing code does not ask the applicant to specify how their actions and mitigation will result in no net loss and amendments to (1)(c) include this to clarify the requirement.

*SCC 30.*62A.150(2): A new (2) is added to reference two Wetland mitigation documents from Ecology that mitigation plans should reflect. The amendment stems from the 2022 Ecology guidance.

v. *Permanent identification, protection, and recording – SCC 30.62A.160:*

*A*mendments detail when permanent fencing is required around critical areas, and how it must be constructed. Amendments also add consistent temporary and permanent marking requirements for critical areas. These amendments are consistent with Ecology 2022 guidance and reorganizes language already present in Chapter 30.62A SCC into one location.

vi. *Classification of streams, lakes, wetlands, and marine waters – SCC 30.62A.230*:

Minor amendments to include supply and storage of water as functions of streams, and minor amendments to Table 1 to better align with WAC 222-160-030 definitions. Table 1 amendments are also based on July 2018 Ecology modifications to the Habitat Function Score for a moderate level of function for habitat, as well as the need to clarify

that there are other special characteristic Category I wetlands, and that high level habitat function is also included within Category III wetlands.

vii. *Functions and values of wetlands, fish and wildlife habitat conservation areas, and buffers – SCC 30.62A.220(1) and (7):*

Minor amendment to include the supply and storage of water as a function of streams, as well as shade as a function of buffers. Amendments are based in science and stem originally from a public comment.

viii. *Classifications of streams, lakes, wetlands, and marine waters – SCC 30.62A.230:*

Housekeeping amendment to update the publications listed in (2) to be the most up to date and minor amendments to Table 1 to better align with WAC 222-160-030. Addition of mature forest and old growth forest wetlands to Category I wetlands to clarify that there are other special characteristic Category I wetlands as displayed in the wetland worksheets. Further, coastal lagoons greater than or equal to 1/10 acre is one of several criteria within the Wetland Rating System for Western WA: 2014 Update, Rating Form - Version 2, July 2023, that determine a Category I or Category II wetland. By removing this criterion from the code for Category I wetlands, and adding in coastal lagoons for Category II wetlands, the applicant and staff are better able to rely on the form. Amendments were also made to increase the habitat function score for Category II wetlands to 6-7, and a low habitat function score to 5 or less per July 2018 Habitat Score Range amendments made by Ecology. Finally, a staff driven amendment to Category III habitat function to include high level habitat function. This amendment will reduce confusion for applicants and staff during permit submittals.

ix. *General standards and requirements – SCC 30.62A.310(3):*

The 2008 Federal Mitigation Rule flips the preference for mitigation of critical area impacts from onsite to offsite. Snohomish County incorporates this preference switch for mitigation of impacts to wetlands and allows offsite mitigation in a different sub-drainage basin subject to analysis of a qualified professional. The addition to (3)(b) and (3)(b)(i) is meant to alert the public and staff to this possibility and provide guidance on the need for a qualified professional.

Other amendments in (3) add general mitigation requirements for cases where mitigation is required for a project. Amendments include that mitigation timing shall be planned to reduce impacts to existing fisheries, wildlife, and flora, that plantings must be native and appropriate for the climate and ecoregion, and that monitoring is required for a minimum of five years. These amendments are aligned with the 2022 Ecology guidance and public input and work to codify existing County practice.

x. *Standards and requirements for buffers and impervious surfaces – SCC 30.62A.320*

30.62A.320(1)(a): Amending Table 2a to remove the 100-foot buffer for Type F waterbodies without anadromous or resident salmonids. The amendment ensures all Type F waterbodies have a 150-foot buffer. The amendment is based on public input, definitions in WAC 222-16-030, and the BAS within the WDFW's Riparian Ecosystems Volume 1, as well as the Management Recommendations within Volume 2. A new note is added to Table 2a to adjust buffer widths when streams or lakes are located within a Special Flood Hazard Area. The amendment is made to be consistent with the Federal Emergency Management Agency (FEMA) Region 10 "Model Ordinance for Floodplain Management under the National Flood Insurance Program and the Endangered Species Act," January 2012. The amendment aims to help maintain streams and floodplains in their natural state to the maximum extent possible so they support healthy biological ecosystems, by: 1) assuring that flood loss reduction measures under the NFIP protect natural floodplain functions and riparian habitat, and the natural processes that create and maintain fish habitat, and 2) preventing or minimizing loss of hydraulic, geomorphic, and ecological functions of freshwater and estuarine floodplains and stream channels.

Minor adjustments to Table 2b to align with changes within Table 1, and to help with table readability. Further, with the addition of functionally disconnected buffers into the code, the county acknowledges the disturbance that roads as land uses can have on the landscape. Amendments to the Table 2b notes adds public roads within the UGA to the list of high intensity land uses, therefore public roads within the rural areas and private roads will be considered moderate land uses.

SCC 30.62A.320(1)(b): Amendment to how a buffer is measured within a channel migration zone. The amendment is consistent with WDFW's Riparian Ecosystem Volume 1 and the guidance in Volume 2. Page 271 of Volume 1 notes, "The riparian ecosystem begins at the edge of the active channel or active floodplain, whichever is wider. As the active channel moves back and forth across the channel migration zone (CMZ), the riparian ecosystem moves with it. Consequently, there are times when the riparian ecosystem lies adjacent to and immediately outside the CMZ. Hence, to maintain riparian ecosystem functions, management must anticipate and protect future locations of the riparian ecosystems." (1)(b) is also amended to add a new (iv) that specifies that if there are two or more buffers that need to be applied in one location, the wider buffer will be applied. New (iv) is consistent with 2022 Ecology guidance and codifies existing County practice.

SCC 30.62A.320(1)(c): Addition of functionally and effectively disconnected buffer exclusions that are consistent with 2022 Ecology guidance, and work to codify existing County practice. When buffers are bisected by existing, legally established structures or roads, the buffer functions may be blocked, and increasing the buffer on the far side of the existing development would not add protective benefit.

SCC 30.62A.320(1)(d): Amendments include a clarification within SCC 30.62A.320(1)(d)(ii) to better describe when total new effective impervious surfaces shall be limited to 10 percent within 300 feet of waterbodies containing salmonids. The 10 percent limit is not required if the stormwater from the new effective impervious surface will not drain into the waterbody containing salmonids. The reason for the change is to ensure a more efficient and consistent review of permit applications.

SCC 30.62A.320(1)(e): If it can be determined that a tree fell down as a result of a development activity (for example, due to damage to the root structure) this is an impact to the buffer requiring mitigation. This amendment is consistent with WDFW guidance.

SCC 30.62A.320(1)(f): Repealing two buffer width reduction criteria that are present in existing code that allow reduced buffers when a critical area is located in a separate tract or behind a fence within a new development. All critical areas must be located within a tract or easement pursuant to SCC 30.62A.160(3). When an applicant selects an option that is not beyond an existing requirement, this does not provide additional protection or enhancement of the critical area and should not receive reduced buffer widths. Similarly, fencing is often required along critical areas protection boundaries pursuant to SCC 30.62A.160(5). Therefore, providing a reduced buffer width for installing a permanent fence does not better protect or provide increased value in a way that would warrant a reduced buffer width. This repeal is consistent with Ecology and WDFW guidance.

SCC 30.62A.320(1)(g): Addition of new standards for buffer averaging requirements for wetlands based on the category of wetland, and to clarify that the existing buffer averaging requirements in code pertain to streams, lakes, and marine waters. These updates to the buffer averaging requirements for wetlands are to align with Ecology's 2022 guidance on this type of flexibility using a moderate risk approach. Ecology guidance states that "The buffer recommendations contained herein are based on a moderate-risk approach. In this document, risk is addressed by tailoring the degree of protection to several factors the scientific literature says are important. The widths recommended in this guidance were selected from the middle of the range of buffers suggested in the literature. In combination with other strategies like limiting buffer reductions, buffer averaging, and exemptions, it represents a moderate-risk approach to determining buffer widths." Amendments also remove the ability for applicants to combine buffer reductions with buffer averaging in line with Ecology's guidance and to be consistent with the repealed language within (1)(f). 2022 Ecology guidance does not include the ability to combine buffer averaging with other reductions.

SCC 30.62A.320(2): Adding further detail to the requirements for new utilities and transportation corridors allowed in buffers with mitigation within SCC 30.62A.320(2)(a) to ensure that entrance and exits must be outside of the buffer. The existing code provides general requirements to minimize impacts to the buffer, and the new criteria focuses particularly on underground utilities and transportation corridors and requires a study from a professional hydrologist to ensure that impacts are not created altering

the percolation of surface water through the soil column or groundwater connection to the critical area. This better protects the values and functions of critical areas and is consistent with 2022 Ecology guidance.

SCC 30.62A.320(3): Amendments to clarify what areas can be included in the buffer mitigation area required by the ratios in Table 3 (Buffer Mitigation Ratios). Areas cannot include driveways, roads, paved areas for vehicles or foot traffic, easements for utility corridors, stormwater facilities, rights-of-way, and streams conveyed underground. These types of areas do not allow for full protection of the values and functions of buffers and therefore should not be given as credit to the project. This clarification is consistent with 2022 Ecology guidance.

SCC 30.62A.320(4): Relocate the optional mitigation measures for wetlands from SCC 30.62A.340 into SCC 30.62A.320(4) to improve the readability of the chapter and allow the public and staff to better locate all relevant code sections in one place. Additional mitigation measures are added to Table 4 consistent with 2022 Ecology guidance to be more helpful to applicants and staff, as well as more inclusive of a wide variety of minimization measures. Additional amendments aim to reduce the complexity of optional mitigation measure 2 for habitat corridors to potentially increase this measure's use in projects. The amendments are in line with 2022 Ecology guidance, in particular, to require that all corridors are a minimum of 100 feet in width.

xi. *Standards and requirements for activities conducted within streams, lakes, and marine waters – SCC 30.62A.330:*

Minor housekeeping amendments along with an additional requirement for roads that cross any of the listed water bodies. Amendment aims to encourage road crossings designed to withstand higher flows expected as a result of climate change, and includes a new requirement that "Incorporating Climate Change into the Design of Water Crossing Structures: Final Project Report" (Washington Department of Fish and Wildlife, revised November 2017) be considered when designing road crossings. This amendment will help inform applicants of the existence of the report, without requiring adherence to the information therein.

xii. *Standards and requirements for activities conducted in wetlands – SCC 30.62A.340:*

Minor amendment to (1)(a) to align with previous amendments within Table 1. Adding new mitigation type requirements within SCC 30.62A.340(4) to indicate the shift in preferences from onsite mitigation for wetland impacts by the project proponent, to offsite mitigation through a third party mitigation bank or in-lieu fee program pursuant to the scientific understanding within the 2008 Federal Mitigation Rule previously referenced. This approach considers the watershed scale, where it could be more beneficial to protect, create, or enhance wetlands elsewhere in the watershed than at a specific site where development is proposed. Additional amendments are included to exclude certain areas from the mitigation ratios required in Table 5 such as driveways consistent with the amendments within SCC 30.62A.320(3).

Table 5 includes a new column for rehabilitation as a form of mitigation and an increase in mitigation ratios required for enhancement. Table 5 currently includes creation and enhancement, two forms of mitigation that have been in the code since 2007 following Ecology guidance at that time. Ecology's current definition of rehabilitation is similar to how the existing Snohomish County code treats enhancement, although, there are some important differences. Breaking out rehabilitation from enhancement in this table could provide more options to applicants for mitigation.

Amendments to increase the mitigation ratios for enhancement are based on scientific rationale primarily within a 2021 Ecology publication (#21-06-003) that states on page 84, "A 2002 study of mitigation in Washington State (Johnson et al., 2002) raised concerns about the value of enhancement. Only 11 percent of enhanced wetlands were even moderately successful, and none were fully successful. Furthermore, regulatory agency compliance inspections of compensatory wetland mitigation sites since 2006 indicate these concerns are still relevant:

- Most enhancement actions focus on improving vegetation structure and ignore improving environmental processes that support wetland systems and functions.

- There is a net loss of water quality and quantity functions, and only modest gains in habitat functions.

- The use of enhancement as a primary means of compensatory mitigation contributes to a loss of wetland area and functions…

- Enhancement could be more effective if it were geared to improve functions that are limited in a watershed or region…

Because enhancement occurs within existing wetlands that already provide functions to a certain degree, applicants proposing enhancement of freshwater wetlands will generally need to demonstrate a gain in wetland functions (i.e., functional lift) sufficient to compensate for wetland impacts by applying the Credit-Debit Method (Hruby, 2012a; Hruby, 2012b)."

Adding a new provision within (4)(e) based on Ecology 2022 guidance to provide applicants with the option to utilize a credit-debit method of mitigation as an alternative to the mitigation ratios within Table 5. This new provision provides applicants with more options for their projects and follows BAS for the protection of critical areas.

xiii. *Innovative development design – SCC 30.62A.350:*

Housekeeping amendments to clarify that any innovative design must be based on BAS, the proposal must demonstrate why the other standards cannot be met, and that outside of the specific deviation(s) addressed by innovative approach, all other

standards must be met. This is an existing County practice and codifying it provides more backing for staff to require adherence to BAS.

Additional housekeeping amendments to align the section with updates to the 2024 Comprehensive Plan including, Transit Pedestrian Villages will no longer be a future land use designation on the future land use map with the 2024 Update to the Comprehensive Plan. The 2024 Update also introduces new designations where density is encouraged in the county's urban growth areas. With allowances for increased densities, including more affordable housing, there may be the need to utilize innovative design when there are critical areas on site.

xiv. *Mitigation banking and in-lieu fee program – SCC 30.62A.360:*

This section is relocated from the exemptions within Part 500. With the shift in preferring offsite mitigation rather than onsite mitigation for wetland impacts based on the 2008 Federal Mitigation Rule, offsite mitigation is no longer an exception to the standard requirements. There is also an update to the referenced guidance for the in-lieu fee (ILF) program to be an Ecology, US Army Corps of Engineer Seattle District, and U.S Environmental Protection Agency Region 10 2021 publication (# 21-06-003). Ecology no longer guides the state's ILF program. The Seattle District of the US Army Corps of Engineers is the agency that provides support on ILF programs with authorization to approve an ILF program. The interagency publication provides general guidance and is a publication that will aid applicants in their ILF mitigation.

xv. *Advance mitigation – SCC 30.62A.370:*

Amendments include a new section in line with Ecology's 2022 guidance, as well as the Advanced Permittee Responsible Mitigation guidance from Ecology dated 2012 (#12-06-015). Advanced mitigation is within a new section because while it is a general standard, the mitigation location is offsite, unlike the default discussion within SCC 30.62A.310. Advance mitigation fulfills several of the objectives that are cited in 33 CFR 332.3(a) as basis for concluding that mitigation banks and ILF programs are preferable forms of compensatory mitigation: reducing temporal losses of functions, and reducing uncertainty over mitigation project success. Although it is not a third party mitigation option like those two options, it is permittee responsible mitigation.

xvi. *Purpose – SCC 30.62A.410:*

Amendments to clarify there are more habitats that could be protected than just what is listed in (4) as "state natural habitats." Adding habitats to species and habitats of local importance to better align to the existing definition within SCC 30.91S.535 and adding a reference to a new SCC 30.62A.465 that utilizes the WDFW Priority Habitat and Species (PHS) program and the Department of Natural Resource's (DNR's) Natural Heritage Program (WNHP) to designate species of local importance. Amendments to SCC 30.62A.410(3) to remove all individually listed Washington State sensitive species, and replace it with all WDFW listed sensitive species. This will allow

the code section to be continually aligned with changes to listed state sensitive species and to remove the need to update this code section in the future.

xvii. *Applicability –SCC 30.62A.420:*

Housekeeping amendments to ensure this section is consistent with other changes made throughout Part 400 referring to habitats of local importance and critical species and habitats.

xviii. *Administrative rules authorized – SCC 30.62A.430:*

Housekeeping amendments to ensure this section is consistent with other changes made throughout Part 400 referring to critical species and habitats instead of species and *their* habitats. State natural habitats are included within the definition of critical species and habitats within SCC 30.62A.410, and do not need to be specifically called out again.

xix. *Administrative rules – minimum protection requirements – SCC 30.62A.440:*

Amendment details that the primary association area for fish includes the stream, lake, wetland, or marine water buffer. This is a clarification driven by staff input that will help resolve questions among the public and staff and allow for more efficient permit review.

xx. *General standards and requirements – SCC 30.62A.450:*

Housekeeping amendments to ensure this section is consistent with other changes made throughout Part 400 referring to critical species and habitats and the amended title of habitat assessment and management plans.

xxi. *Habitat assessment and management plan contents – SCC 30.62A.460:*

Additions to better align the existing habitat management plan section to special flood hazard area requirements from FEMA Region 10 (Model Ordinance for Floodplain Management under the NFIP and the ESA, FEMA - Region 10, January 2012). This amendment codifies existing requirements. Also adding in mapped PHS areas as a trigger for a habitat assessment. The WAC 365-190-130(4)(b) states that the county must consult WDFW in the designation and protection of habitats and species of local importance. The WDFW PHS program represents the BAS for the identification and protection of habitats and species of local importance, so it is also in line with BAS for applicants to conduct a habitat assessment when a PHS is mapped on their property to ensure the protection of all critical species and their primary association areas.

xxii. *Designation of species and habitats of local importance – SCC 30.62A.465:*

A new section SCC 30.62A.465 is added to include WDFW's list of priority habitats and species (PHS) and DNR's Natural Heritage Program (WNHP) list of high quality

ecological communities and systems and rare plants located in Snohomish County as species and habitats as species of local importance. The WAC 365-190-130(4)(b) states that the county must consult WDFW PHS Program list and DNR's WNHP list of high-quality ecological communities and systems and rare plants in the designation and protection of habitats and species of local importance. The WDFW PHS Program and DNR WNHP include BAS in the creation of their lists. The WDFW PHS list was published in 2008 and updated in 2023. The WNHP publishes a list of vascular plant species of conservation concern, and updates that list approximately every two years. The most recent rare plant list was published in July 2024 (Natural Heritage Report 2024-07). This new section also requires the County to create an administrative rule listing these species and habitats located in Snohomish County from the PHS and WNHP program lists. The county will review the PHS and WNHP program lists annually and the administrative rule will be updated as necessary for consistency with the program lists.

xxiii. *Nomination of species and habitats of local importance – SCC 30.62A.470:*

Adding the DNR WNHP and WDFW PHS Program as two circumstances that could be used to designate species of local importance. The new SCC 30.62A.465 designates species and habitats of local importance, this section now outlines how the public could nominate additional species and habitats of local importance. Amendments also remove "native" throughout the section as the language is confusing and not defined.

xxiv. *Minor development activity exceptions – SCC 30.62A.510:*

SCC 30.62A.510(1): The requirement within WAC 365-196-830(4) has not substantively changed since the last CAR update, although a sentence was added in 2023 noting that, "Avoidance is the most effective way to protect critical areas." Amendments add clarifying language to subsection (1) that states that best management practices (BMPs) should include those that avoid impacts where possible, in addition to those that minimize and mitigate for any adverse impacts to ensure no net loss of critical area functions and values.

SCC 30.62A.510(3)(g): Repealing (g) as a minor development activity allowed. Instead of allowing development in non-riparian Category II and II wetlands smaller than 5,000 square feet and Category IV wetlands smaller than 10,000 square feet, (4) is added consistent with 2022 Ecology guidance to allow development within Category IV wetlands less than 4,000 square feet that meet new criteria. A new (5) is also added to exempt Category IV wetlands less than 1,000 square feet with criteria. These amendments are made because the WAC requires no net loss of critical areas, and Ecology has refined their guidance since the last major CAR update about the wetlands that are acceptable to be impacted by development. A new (3)(g) is added to exempt Forest Practices pursuant to chapter 76.09 RCW, and a new (3)(m) is added to exempt conservation and preservation projects. Conservation projects aim to enhance critical areas and do not need to provide additional mitigation. This

amendment is consistent with the 2024 Comprehensive Plan that amended policies to encourage and support conservation projects.

xxv. *Single family residential development exceptions in buffers – SCC 30.62A.520:*

Housekeeping amendments to clarify intent of the provision. Minor amendments to (4) to be consistent with amendments earlier in the chapter related to new effective impervious surfaces, as well as (12) to clarify that mitigation plans are required for development proposed under this exception.

xxvi. *Reasonable use – SCC 30.62A.540:*

Reasonable use does not mean the highest economic value of a property. Amendments provide parameters around the total impact area that can be permitted in a critical area consistent with SCC 30.62A.520 as well as policies within other nearby jurisdictions. This amendment will help ensure consistent implementation of this allowance and efficient permit review. Amendments within this section also clarify that mitigation plans are required for development projects applying for this exemption.

xxvii. *General Agricultural Standards – SCC 30.62A.620:*

Minor amendments to clarify that there can be no net loss of critical area ecological function or value and the addition of a new source of BMPs.

xxviii. *Farm conservation plans and best management practices – SCC 30.62A.640:*

Minor amendment to remove a redundant sentence within (2)(b) as BMPs should always be maintained as long as the agricultural activity is ongoing. Addition within (5) to add that monitoring records provided by the farm operator shall be retained by the County to ensure Farm Plans are working as intended.

xxix. *Monitoring and adaptive management program – SCC 30.62A.710:*

The monitoring and adaptive management program was created after the 2007 update to the CAR, and amendments to this section update the tense and description of the program.

xxx. *Monitoring and adaptive management program – contents – SCC 30.62A.720:*

Minor amendments to better align the code with current County practice.

b. Chapter 30.62B SCC – Geologically Hazardous Areas is amended:

i. *Intent – SCC 30.62B.015:*

Housekeeping amendment to remove an incorrect reference to wetlands and fish and wildlife habitat conservation areas and replace it with geologically hazardous areas.

ii. *Geotechnical report requirements – SCC 30.62B.140:*

Minor amendment to ensure that licensed engineers or geologists preparing the geotechnical reports must be licensed in the State of Washington. The code already requires that the engineer be licensed, and this amendment adds that the license must be from Washington State. This is already practice, and the amendment codifies this practice. The amendment originally came from public input.

iii. *Erosion hazard areas – Channel migration zones – SCC 30.62B.330:*

Amendments within (1) to clarify that Table 1 is one way to identify channel migration zones (CMZs), and there are other ways to identify CMZs utilizing BAS. In the existing code, the subsequent study required when a development activity or action is proposed within a CMZ can only be performed using a DNR method developed for Forest Practices. Amendments add an additional Ecology methodology that County consultants identified as effective, and is currently in use by Surface Water Management. There are similarities between the DNR and Ecology methodologies, although Ecology's methodology provides multiple mapping methods that allow it to be more cost effective, its documentation provides greater detail, and Ecology's CMZ program is kept more up to date. The addition of the second allowed method provides applicants with another, usually more cost effective, option for CMZ studies.

c. Chapter 30.62C SCC - Critical Aquifer Recharge Areas is amended:

i. *Intent – SCC 30.62C.015:*

Housekeeping amendment to correct an incorrect reference to wetlands and fish and wildlife habitat conservation areas and refer instead to critical aquifer recharge areas.

ii. *Hydrogeologic report and mitigation plan – SCC 30.62C.140:*

Amendment to add criteria for when a hydrogeologic report is required for a project. This will provide clarity to the public and staff. The proposed amendments to this section require preparation of a hydrogeologic report when specific types of uses are proposed within critical aquifer recharge areas with varying levels of vulnerability. A report is required in all critical aquifer recharge areas for those uses with the greatest potential for impacts to groundwater. When uses present less potential for impacts to groundwater, the hydrogeologic report is required only when located within aquifer recharge areas of higher vulnerability. This proposed amendment includes new requirements that uses otherwise prohibited in critical aquifer recharge areas with high or medium vulnerability must now prepare a hydrogeologic report if located in low vulnerability critical aquifer recharge areas; and uses that pose a potential risk to groundwater that are not otherwise listed in the chapter must also prepare a hydrogeologic report

iii. *Notice to Group A water systems – SCC 30.62C.150:*

Revising the section to clarify when notice will be provided to Group A water systems when certain activities are proposed within the wellhead protection zones of wells used for public water supply. Related amendments are also proposed to SCC 30.62C.340 and new section SCC 30.62C.345 concerning certain uses subject to conditions necessary to protect critical aquifer recharge areas to allow the department to consider, and impose conditions based on, recommendations from affected Group A public water systems. These changes will help ensure consistent permit review and reduce potential for impaired water quality of public drinking water supplies.

iv. *Classification of critical aquifer recharge areas – SCC 30.62C.220:*

Amendment to add Group A wellhead protection zones identified through watershed protection plans prepared by licensed engineers with hydrogeologic expertise. The detailed analysis contained in watershed protection plans may identify 10-year travel zones, additional buffer zones and zones of contribution which are all considered part of the critical aquifer recharge area.

v. *General requirements – SCC 30.62C.320:*

Amendment to add a provision stating that avoidance of impacts is the standard that must be met within Group A wellhead protection areas. Mitigation is not an option due to risk to human health. Impairment of water quality or quantity within a Group A wellhead zone is unacceptable.

vi. *Uses prohibited within certain critical aquifer recharge areas – SCC 30.62C.330:*

The amendment expands the prohibitions to include within CARA of medium sensitivity. The prohibition of landfills is expanded to address emerging issues such as e-wastes. The prohibition on Underground Injection Control (UIC) wells is clarified to address specific classes and types instead of a generic prohibition on all UICs.

UIC wells are categorized into Class I through Class V by the EPA. Class V UIC wells include certain types of stormwater management facilities considered as “low impact development” (LID). Use of LID is required as the preferred method for stormwater management under the county’s Phase I Municipal Stormwater Permit issued by Ecology under authority of the federal Clean Water Act (CWA) and the Washington Water Pollution Control Act, chapter 90.48 RCW, and codified in Chapter 30.63A SCC. The Phase I Permit also requires that adoption of county policy and code must not create barriers to the use of LID. Current language in SCC 30.62C.330 prohibits the use of all UIC wells within CARA of high sensitivity without recognizing the specific requirements for LID under the CWA.

vii. *Uses and development activities subject to special conditions – SCC 30.62C.340:*

Amendment to revise the table listing specific uses that are subject to CARA requirements as well as subject to additional state or federal requirements. The table has been reorganized to group storage tank requirements together, add requirements for petroleum processing and recycling facilities, and separate out UIC wells for special treatment in a new section. The table also includes updated references to applicable WACs (junk yards and salvage yards; reclaimed water for groundwater recharge; pesticide, herbicide and fertilizer storage and use; and solid waste handling and recycling facilities) and guidance documents for sawmills. The section specifies the uses may be conditioned based on state and federal regulations and recommendations from hydrogeologic reports, and adds authority for the department to consider recommendations from Group A public water systems when uses are proposed within wellhead protection zones.

viii. *UIC wells subject to special conditions - SCC 30.62C.345:*

A new section is added to clarify requirements for UIC wells. A new table identifies UIC wells by class and the associated state or federal requirements that apply. These UIC wells may also be subject to hydrogeologic reports and recommendations from Group A public water system. Requirements for UIC wells used for stormwater management are categorized by: (1) those that do not meet the state endangerment standard, (2) those that meet the endangerment standards under WAC 173-218-080 or WAC 173-218-090, and (3) those that automatically meet the state endangerment standard under WAC 173-218-100.

The amendments contain provisions for stormwater-related UIC wells resolving the potential conflict between Chapters 30.62C and 30.63A SCC while still recognizing the potential for stormwater UIC wells to contaminate groundwater. A hydrogeologic report would be required for any stormwater UIC wells located within certain CARA with high or medium sensitivity (including Group A wellhead protection zones and sole source aquifers) that do not meet the non-endangerment standard in the states UIC well program described in WAC 173-218-080, -090, and -100. Stormwater UIC wells that meet the nonendangerment standard in WAC 173-218-080 or WAC 173-218-090 may still be conditioned based on recommendations from Group A public water systems if necessary to protect the critical aquifer recharge area.

d. Chapter 30.86 SCC – Fees:

i. *Special flood hazard areas permit fees – SCC 30.86.300:*

Consistent with the amendment to codify the required habitat assessment and management plan for projects needing flood hazard permits in Chapter 30.43C SCC, the amendment is to add the associated fees for review. The fee for habitat assessment and management plan in the special flood hazard area is the same as within Table 30.86.525(5) for habitat assessment and management plans outside of the special flood hazard area when otherwise required under Chapter 30.62A SCC.

e. Chapter 30.91 SCC – Definitions

i. *Appurtenance – SCC 30.91A.250*:

Minor amendment to be consistent with the amendment within SCC 30.86.300 that lists "appurtenance" in the fee table.

ii. *Critical area – SCC 30.91C.340*:

Housekeeping amendment to add "habitats of local importance" within the fish and wildlife habitat conservation areas of (3)(f) to be consistent with the amendments within Part 400 and the amendment within SCC 30.62A.010. An additional minor amendment to help the public and staff understand that the term "frequently flooded areas" as used in the GMA to define a critical area, includes "special flood hazard areas" used by the National Flood Insurance Program and chapter 30.65 SCC. The GMA Guidelines in WAC 365-190-110(1) directs that frequently flooded areas are a critical area and must include, at a minimum, the 100-year flood plain designations of the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program (NFIP). FEMA and the NFIP refer to these floodplains as "special flood hazard areas." Snohomish County Code utilizes the term special flood hazard areas to align with FEMA definitions as per SCC 30.65.040 and SCC 30.91F.370.

iii. *Critical species – SCC 30.91C.370:*

Critical species are defined in county code as including species listed by state and federal government as endangered, threatened, or sensitive, and species of local importance. Amendment to the critical species definition to ensure all state listed sensitive species are included within the definition. The amendment removes the individually listed state sensitive species, consistent with the amendment to SCC 30.62A.410, and will ensure the code will remain consistent with WDFW listings without the need to be updated in the future.

iv. *Qualified Professional – SCC 30.91Q.020*:

New definition to provide clarity to the public and staff. The term "qualified professional" is utilized within existing code in Chapters 30.62B and 30.62C SCC and is within an amendment to Chapter 30.62A SCC. The new definition applies to Chapters 30.62A and 30.62B SCC because the term is sufficiently defined for chapter 30.62C SCC in SCC 30.62C.140.

v. *Special waste – SCC 30.91S.528:*

New definition necessary to aid in the implementation of the amendments to Chapter 30.62C SCC that is consistent with the definition of special waste in WAC 173-030-040.

vi. *Underground injection control well (UIC well) – SCC 30.91U.065*:

New definition necessary to aid in the implementation of the amendments to Chapter 30.62C SCC that is consistent with the definition of UIC well in the Washington Underground Injection Control Program, chapter 173-218 WAC.

vii. *Wellhead protection area (WHPA) – SCC 30.91W.050:*

New definition necessary to aid in the implementation of the amendments to Chapter 30.62C SCC. This definition is based on WAC 365-190-030 and on information in Wellhead Protection Areas: Protecting Drinking Water, Washington Department of Health (DOH) Publication No. 331-634.

G. The critical area amendments have been evaluated for the potential to create barriers to the implementation of low impact development (LID) principles and measures for stormwater management. Since the updates support the basic LID principles of preserving native vegetation, limiting impervious surfaces, and protecting native soils and drainage channels, the county determined that the critical area regulations support and implement LID principles and thus, do not create a barrier to the use of LID techniques for stormwater management.

H. The critical area amendments address utilities in terms of when utilities can or cannot be constructed through or within critical areas. Critical areas exist in rural and urban areas and the amendments will not have an impact on the demand for capital facilities and utilities. County and external service providers maintain long-range plans and financing strategies to meet projected service demands that will not be impacted by the critical area regulation amendments.

I. The critical area regulation amendments may impact the buildable lands of Snohomish County potentially impacting housing and job creation in the County. The critical area regulation amendments do not increase buffer widths, although they do remove certain exemptions and flexible buffer provisions which will strengthen existing protections. The costs associated with the provision of housing and jobs may increase with the need for further environmental reviews.

Section 2. The County Council makes the following conclusions:

A. The amendments to the critical area regulations are consistent with the requirements in the Growth Management Act.

B. The amendments to the critical area regulations are based on recommendations from the best available science.

C. The amendments to the critical area regulations are consistent with the multicounty planning policies, the countywide planning policies, and the County's policies in the comprehensive plan adopted in compliance with the Growth Management Act.

D. The processes to develop and adopt the updates to the critical area regulations meet GMA requirements for public participation and public hearings.

E. The County has met the GMA requirements for public notice.

F. The SEPA process conducted for this ordinance satisfies the requirements of chapter 43.21C RCW, as implemented by chapter 197-11 WAC and chapter 30.61 SCC.

G. The amendments to the critical area regulations do not create a barrier to the use of low impact development principles and facilities for management of stormwater whenever such use is feasible.

H. The amendments do not result in an unconstitutional taking of private property for a public purpose.

Section 3. The Snohomish County Council bases its findings and conclusions on the entire record of the County Council, including all testimony and exhibits. Any finding, which should be deemed a conclusion, and any conclusion which should be deemed a finding, is hereby adopted as such.

Section 4. The *Revised Draft Summary of Best Available Science for Critical Areas*, *March 2006,* the *Draft Summary Snohomish County 2015 Best Available Science Review for Critical Area Regulation Update, April 2015*, and the annotated bibliography identified as *Summary of BAS and Other Key Resources, June 2024 (Parts I and II),* are incorporated into the record for this 2024 update to the critical area regulations.

Section 5. Snohomish County Code Section 30.43C.030, last amended by Ordinance No. 20-076 on November 4, 2020, is amended to read:

30.43C.030 Additional submittal requirements.

All persons applying for a flood hazard permit shall make application to and shall meet the submittal requirements established by the department pursuant to SCC 30.70.030. Additional submittal requirements shall include the following:

(1) Name of the stream or body of water associated with the floodplain in which the development is proposed;

(2) General location of the proposed development, including direction and distance from the nearest town or intersection;

(3) Site plan map showing:

(a) Site boundaries;

(b) Location and dimensions of the proposed development or structure;

(c) Location and volume of any proposed fill material; and

(d) Location of existing structures;

(4) Topographic, engineering, and construction information necessary to evaluate the proposed project that may be requested by the department through the preapplication process or during the initial review for completeness of the application;

(5) Additional information when required pursuant to chapter 30.65 SCC;

(6) If a project proposes to alter or relocate a riverine watercourse, the flood hazard permit application shall include a description of the extent to which the riverine watercourse will be altered or relocated;

(7) If a project will alter the base flood elevation or the boundaries of the special flood hazard area the flood hazard permit application shall include:

(a) Engineering documentation and analysis developed by a registered qualified professional engineer regarding the proposed change; and

(b) If required by the Federal Emergency Management Agency, a letter of map change from that agency. If a letter of map change is required, the applicant must receive approval of a conditional letter of map revision from the Federal Emergency Management Agency before the flood hazard permit may be approved. The application for the flood hazard permit shall include the complete conditional letter of map revision application package;

(8) Elevation and floodproofing certification under SCC 30.65.130 and SCC 30.65.140;

(9) If a project is proposed in a V, V1-30, or VE zone, a design certificate as described in SCC 30.65.295(1)(c); ((~~and~~))

(10) If a project is proposed in the floodway, certification by a registered professional engineer as described in SCC 30.65.230(1)(b) confirming that the proposal will not result in any increase in flood levels during the occurrence of the base flood discharge((~~.~~)) ; and

(11) Habitat assessment and management plan under SCC 30.62A.460.

Section 6. Snohomish County Code Section 30.62A.010, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.010 Purpose and applicability.

(1) The purpose of this chapter is to provide critical area regulations pursuant to the Growth Management Act (chapter 36.70A RCW) for the designation and protection of:

(a) Wetlands, and

(b) Fish and wildlife habitat conservation areas including:

(i) streams, including those planted with game fish by a governmental or tribal entity;

(ii) lakes, including those planted with game fish by a governmental or tribal entity;

(iii) naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat, including those planted with game fish by a governmental or tribal entity. Reference to "lake" or "lakes" in this chapter includes naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat;

(iv) marine waters;

(v) primary association areas for critical species; and

(vi) state natural area preserves, natural resource conservation areas, ((~~and~~)) state wildlife areas, and habitats of local importance.

(2) This chapter applies to:

(a) Development activities, actions requiring project permits, and clearing, except for the following:

(i) Non-ground disturbing interior or exterior building improvements;

(ii) Routine landscape maintenance of established, ornamental landscaping;

(iii) Non ground disturbing normal maintenance or repair;

(iv) Removal of noxious weeds conducted in accordance with chapter 16-750 WAC;

(v) Maintenance or replacement that does not expand the affected area of the following existing facilities:

(A) septic tanks and drainfields;

(B) wells;

(C) individual utility service connections; and

(D) individual cemetery plots in established and approved cemeteries;

(vi) Data collection and research by nonmechanical means if performed in accordance with state-approved sampling protocols or Endangered Species Act (ESA) Section 10(a)(1)(a), Section 7 consultation (16 USC § 1536);

(vii) Nonmechanical survey and monument placement; and

(viii) Quasi-judicial rezones not accompanied by another permit or approval.

(b) Agricultural activities, which are subject only to Part 600 of this chapter.

Section 7. Snohomish County Code Section 30.62A.015, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62A.015 Intent.

It is the intent of this chapter to provide the protection required by chapter 36.70A RCW for wetlands and for fish ((~~&~~)) and wildlife habitat conservation areas while simultaneously protecting property rights. The county council nevertheless recognizes that implementation of some provisions of this chapter 30.62A SCC will inevitably entail some restriction of property rights. It is the intent of the county council that this chapter be always construed and interpreted so that property rights be restricted no further than strictly necessary for the critical area protection required under chapter 36.70A RCW.

Section 8. Snohomish County Code Section 30.62A.130, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.130 Submittal requirements.

(1) For any development activity or action requiring a project permit, the applicant shall submit a site development plan drawn to a standard engineering scale which includes:

(a) Boundary lines and dimensions of the subject property;

(b) Boundary lines and dimensions of the site;

(c) The topography at contour intervals of five feet unless the underlying project permit requires a lesser interval;

(d) Location, size, and type of any existing structures, cleared areas and other existing improvements;

(e) Location, size, and type of all proposed development activities, activities subject to project permits, and clearing;

(f) Location and description of all wetlands and fish and wildlife habitat conservation areas located on the site ((~~or~~)) and within 300 feet ((~~or the width of the widest potential buffer of the site boundaries~~)) of the site;

(g) Location of all other critical areas regulated pursuant to chapters 30.62B, 30.62C, and 30.65 SCC on or within 300 feet of the site; ((~~and~~))

(h) Location of structure setbacks as required in chapter 30.23 SCC((~~.~~)) ; and

(i) Location, size, and type of proposed stormwater facilities, including estimated areas of intrusion into buffers.

(2) In addition to a site development plan the following additional information will be required where applicable:

(a) Classification of all streams, wetlands, or lakes pursuant to SCC 30.62A.230 (Table 1). Classification is not required if the project permit applicant applies the maximum protection for the specific critical area as specified at SCC 30.62A.320 (Table ((~~2~~)) 2a and 2b);

(b) Provisions for permanent protection as specified at SCC 30.62A.160;

(c) Provisions for temporary marking on the site of all critical area protection areas, or the limits of the proposed site disturbance outside of the critical area protection areas; ((~~and~~))

(d) A critical area study as required by SCC 30.62A.140((~~.~~)) ;

(e) Wetland delineation field worksheets in accordance with the approved federal wetland delineation manual and applicable regional supplement (see WAC 173-22-035); and

(f) Wetland categorization worksheets based on the Washington State Wetland Rating System for Western Washington: 2014 Update (Version 2), Hruby, T. & Yahnke, A. (2023), Department of Ecology Publication #23-06-009, or latest edition.

Section 9. Snohomish County Code Section 30.62A.140, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.140 Critical area study content requirements.

For any development activity or action requiring a project permit occurring in wetlands, fish and wildlife habitat conservation areas, or within a buffer unless otherwise provided in Part 300, the ((~~director~~)) department may require, where applicable, a critical area study prepared by a qualified professional. The critical area study shall include a survey or map drawn to scale and a report describing the following information:

(1) A wetland delineation map and report, including field worksheets in accordance with the approved federal wetland delineation manual and applicable regional supplement (see WAC 173-22-035). This requirement may be waived if a wetland delineation has been performed within the previous five years that was approved by the department, and the department determines after site review that the wetland boundary is the same as the approved delineation;

(2) Wetland categorization, including worksheets, documenting the proposed wetland categories, based on the Washington State Wetland Rating System for Western Washington: 2014 Update((~~, (Hruby, T., October 2014, or latest edition, Department of Ecology Publication #14-06-029~~))) (Version 2), Hruby, T. & Yahnke, A. (2023), Department of Ecology Publication #23-06-009, or latest edition;

(3) Wetland classes present as defined in the United States Fish and Wildlife Service's Classification of Wetlands and Deep Water Habitats in the U.S. ((~~Cowardin et al., 1979~~))) (i.e. Cowardin classification), Federal Geographic Data Committee (2013), or latest edition;

(4) Stream location, stream name (if named), and stream type pursuant to the typing system contained in SCC 30.62A.230 (Table 1);
(5) Lake location, lake name (if named), and lake type pursuant to the typing system contained in SCC 30.62A.230 (Table 1);

(6) The ordinary high-water mark of any stream, lake, or marine water;

(7) Buffer location pursuant to SCC 30.62A.320;

(8) A description and assessment of any areas that are functionally and effectively disconnected from buffers;

((~~(7)~~))) (9) A description and illustration of proposed activities within any critical area or ((~~buffers~~)) buffer;

((~~(8)~~))) (10) An assessment of the existing functions and values of the critical area(s) or buffers that will be affected by the proposed activity and the methods used to assess those functions and values;

((~~(9)~~))) (11) An assessment of how the activity meets the protection standards established in SCC 30.62A.310 and SCC 30.62A.450. For applications under SCC 30.62A.350, an assessment of how the proposal protects the functions and values specified in SCC 30.62A.220, and how the proposal provides protection equivalent to the standards established in SCC 30.62A.310 and SCC 30.62A.450;

((~~(10)~~))) (12) A mitigation plan for activities occurring in a critical area or buffer according to the requirements in SCC 30.62A.150;

((~~(11)~~))) (13) A habitat management plan in accordance with SCC 30.62A.460 for any activity occurring within the primary association area of a critical species, habitats of local importance, state natural habitats, special flood hazard areas, or Priority Habitat Species (PHS) areas mapped by the Washington Department of Fish and Wildlife (WDFW);

((~~(12)~~))) (14) When shoreline or bank stabilization measures and/or flood protection measures are proposed, a geotechnical report investigating alternative structural and non-structural methods pursuant to SCC 30.62B.140; and

((~~(13)~~))) (15) Any other information necessary to determine compliance with this chapter or identified on a submittal checklist created by the department.

Section 10. Snohomish County Code Section 30.62A.150, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.150 Mitigation plan requirements.

Unless otherwise provided by this chapter, project permit applicants must provide a mitigation plan prepared by a qualified professional to address impacts to affected wetland, fish and wildlife habitat conservation area, or buffer functions and values as identified in the critical area study required pursuant to SCC 30.62A.140, provided that mitigation for the primary association area of critical species shall also comply with the requirements of Part 400.

(1) All mitigation plans shall:

(a) Describe the actions taken to avoid and minimize impacts to the critical area or buffer;

((~~(a)~~)) (b) Include a report that describes and evaluates the existing functions and values, the functions and values that will be impacted (both directly or indirectly, and permanently or temporarily), ((~~and~~)) the functions and values after mitigation, and the baseline conditions of the proposed location for compensatory mitigation if it is off-site;

((~~(b)~~)) (c) Specify how functions and values lost as a result of the activity will be replaced and result in no net loss of ecological values and functions. Include the amount of mitigation to be provided and the rationale for the type and location of compensatory mitigation selected, as applicable;

((~~(c)~~)) (d) Include performance standards;

((~~(d)~~)) (e) Specify when mitigation will occur relative to project construction and to the requirements of permits required by other jurisdictional entities;

((~~(e)~~)) (f) Include provisions for monitoring and maintenance of the mitigation area on a long-term basis to determine whether the mitigation was successful and that the mitigation measures in the approved plan will be sustainable after the monitoring period has expired;

((~~(f)~~)) (g) Include provisions for ((~~performance and maintenance~~)) security devices pursuant to ((~~chapter 30.84 SCC~~)) SCC 30.84.015 and SCC 30.84.140 to ensure that work is completed in accordance with approved plans; and

((~~(g)~~)) (h) Include provisions on a form approved by the department for right of entry to the county for the purpose of inspection for the length of the monitoring and maintenance period.

(2) Mitigation plans for wetlands shall be consistent with Wetland Mitigation in Washington State–Part 2: Developing Mitigation Plans—Version 1 (Ecology Publication #06-06-011b, or as revised), and Selecting Wetland Mitigation Sites Using a Watershed Approach (Ecology Publication #09-06-32, or as revised).

((~~(2)~~)) (3) For development activities that require approval by the hearing examiner or those that receive phased administrative, conditional, or preliminary approvals, the ((~~director~~)) department may allow mitigation plans to be submitted in two phases: a conceptual phase and a detailed plan phase.

Section 11. Snohomish County Code Section 30.62A.160, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.160 Permanent identification, protection, and recording.

The following measures for permanent identification and protection of wetlands, fish and wildlife habitat conservation areas, and buffers are required for any development activity or action requiring a project permit, except those occurring in public and private road, trail, or utility easements and rights-of-way, or for those projects conducted for the primary purpose of habitat enhancement or restoration.

(1) Critical area site plans.

(a) All wetlands, fish and wildlife habitat conservation areas, and buffers occurring on the site shall be designated on a critical area site plan as critical area protection areas.

(b) A critical area site plan is any plan approved by the department that includes but is not limited to subdivisions, records of survey, official site plans, administrative site plans, binding site plans, or other form drawn to a standard engineering scale.

(c) Critical area site plans shall include at a minimum:

(i) the boundaries of the site;

(ii) the boundaries of the property;

(iii) a legal description of the subject property;

(iv) accurate locations/boundaries of the critical area protection area(s), identified by critical area type;

(v) identification of existing legally established uses and structures;

(vi) provisions allowing habitat enhancement in wetland(s), fish and wildlife habitat conservation area(s), and buffers; and

(vii) provisions for the permanent protection of the critical area(s) functions and values including, at minimum, the following:

(A) restrictions on the construction of new structures;

(B) restrictions on the removal of existing native vegetation; and

(C) restrictions on other development activities that would adversely affect the functions and values of the wetland(s), fish and wildlife habitat conservation area(s), or buffers.

(2) *Recording.* Critical area site plans shall be recorded with the county auditor. Documentation of recording shall be provided to the department prior to permit issuance.

(3) *Separate tracts and easements.* Wetlands, fish and wildlife habitat conservation areas, and buffers shall be located in easements or in separate tracts or other protected open space owned in common by all owners of the lots or parcels within any land division or land use permit or decision regulated pursuant to chapters 30.41A, 30.41B, 30.41C and 30.41D SCC or any other multi-family project approval with protected open space owned in common.

(4) *Legally established uses and structures.* Existing legally established uses or structures that fall within the boundaries of the critical area protection area shall be allowed to continue to be used and maintained without any additional restrictions. These uses and structures shall be clearly identified and described on the critical area site plan.

(5) ((~~When~~)) *Permanent Fencing.* Permanent fencing is required along critical area protection area boundaries when using easements on lots for the protection of critical areas or buffers, or when adjacent activities could degrade the functions or values of the critical area or buffer. Examples of adjacent activities include, but are not limited to, maintained landscaping, agricultural uses, and commercial uses. ((~~a fence~~)) Permanent fencing shall be installed in a manner that minimizes impacts to the critical area and buffer consistent with the ((~~fence~~)) following design and placement requirements ((~~of SCC 30.62A.320(1)(f)(ii).~~)):

(a) fencing shall allow for the passage of wildlife, including fish runs, with a maximum height of three- and one-half feet and include a minimum gap of one- and one-half feet at the bottom of the fence; and

(b) fencing placement shall clearly demarcate the critical area protection area(s) from the developed portion of the site and limit access of landscaping equipment, vehicles, or other human disturbances.

(6) *Previously approved critical area site plans.* For any development activity, action requiring a project permit or clearing occurring consistent with a previously approved critical area site plan shall be governed according to the terms and conditions of the approved site plan, provided that all wetlands, fish and wildlife habitat conservation areas, and buffers have been identified and specific permanent protection has been provided. “Consistent” means that there are no proposed modifications to the critical area protective measures established on the previously approved plan ((~~or~~)) , increase in impacts, or direct impacts to the critical areas or buffers.

(7) *Temporary marking.* Critical area protection area boundaries and the clearing limits identified on the critical area site plan of an approved permit shall be marked in the field with temporary high-visibility fencing to prevent unauthorized intrusion. Temporary markings are subject to inspection by the department prior to the commencement of permitted activities. Temporary

markings shall be maintained throughout construction and shall not be removed until required permanent fencing or markings are in place, or as directed by the department.

((~~(7)~~)) (8) *Permanent marking.* Critical area protection area boundaries shall be permanently marked with signs on the site prior to final inspection by the ((~~county using methods and materials acceptable to the county~~)) department, provided that this requirement does not apply to single family residential development occurring on existing lots. Permanent signs shall comply with the following requirements:

(a) signs shall be made of an enamel-coated metal face attached to a metal post or another non-treated material of equal durability;

(b) signs shall be posted at an interval of one sign every one hundred feet, or one sign per lot if the lot is less than one hundred feet wide;

(c) signs shall be worded as follows or with alternative language approved by the department:

Critical Area Protection Area (CAPA)
This area is protected to provide wildlife habitat and maintain critical area(s) functions/values.
Please do not disturb this valuable resource.
Consult recorded plat or Snohomish County Planning and Development Services for CAPA restrictions

(d) signs shall be maintained by the property owner in perpetuity; and

(e) the department may modify the requirements for permanent signs in SCC 30.62A.160(8)(a)-(d) as necessary for the protection of sensitive features or wildlife.

Section 12. Snohomish County Code Section 30.62A.220, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.220 Functions and values of wetlands, fish and wildlife habitat conservation areas, and buffers.

The functions and values listed in this section are included primarily based on their ecological relationship and value to the critical areas subject to this chapter, and include, but are not necessarily limited to, the following elements:

(1) *Streams.* Fish and wildlife habitat; supply, transport, and storage of water, sediment, and organic material; floodwater storage and attenuation;

(2) *Wetlands.* Fish and wildlife habitat, pollution assimilation, sediment retention, shoreline stabilization, floodwater storage, attenuation and conveyance, wave energy attenuation, stream base-flow maintenance, and groundwater discharge/recharge;

(3) *Lakes.* Fish and wildlife habitat, sediment retention, pollution assimilation, and floodwater attenuation, storage and conveyance;

(4) *Marine waters.* Fish and wildlife habitat; wind, wave and current attenuation; sediment supply; longshore transport of sediment; and pollution assimilation;

(5) *Primary association areas of critical species.* Fish and wildlife habitat;

(6) *State natural area preserves, natural resource conservation areas, and state wildlife areas.* Fish and wildlife habitat and recreation; and

(7) *Buffers.* Habitat for water associated and riparian associated wildlife, wildlife movement corridors, noise and visual screening, large woody debris and other natural organic matter recruitment, floodwater attenuation and storage, temperature maintenance, pollution assimilation, streambank stabilization, shade, and supply of sediments and nutrients.

Section 13. Snohomish County Code Section 30.62A.230, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.230 Classification of streams, lakes, wetlands, and marine waters.

(1) Classification of streams, lakes, and marine waters shall be established in accordance with the water typing rules contained in WAC 222-16-030, summarized in Table 1. In the event of a conflict between WAC 222-16-030 and the contents of Table 1, the provisions in WAC 222-16-030 will govern.

(2) Classification and scoring of wetlands shall occur pursuant to the Washington State Wetland Rating System for Western Washington: 2014 Update (Version 2), ((~~(~~))Hruby, T. & Yahnke, A. (2023), ((~~October 2014, or latest edition,~~)) Department of Ecology Publication #((~~14-06-029~~))) 23-06-009, or latest edition, summarized in Table 1. In the event of a conflict between the DOE publication and the contents of Table 1, the provisions in the DOE publication will govern.

Table 1 Classification of Streams, Lakes, and Wetlands

Classification	Classification Criteria Summary
Streams and Lakes	
Type S	Segments of all waters within their bankfull width, as inventoried as "shorelines of the state" under chapter 90.58 RCW and the rules promulgated pursuant to chapter 90.58 RCW.
Type F	Segments of natural waters other than Type S waters, which are within the bankfull widths of defined channels or within lakes or impoundments having a surface area of 0.5 acres or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:

Classification	Classification Criteria Summary
	(a) ((~~Are~~)) Waters diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the Washington State Department of Natural Resources to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less; (b) ((~~Are~~)) Waters diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality; (c) Waters which are within federal, state, local or private campgrounds with more than 10 camping units: Provided that the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement; (d) Riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat.
Type Np	Segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of the year of normal rainfall. However, for the purpose of water typing, Type Np waters include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. ((~~Np waters begin downstream of the point along the channel where the contributing basin area is at least 52 acres in size.~~))
Type Ns	Segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np water. Ns waters must be physically connected by an above-ground channel system to Type S, F, or Np waters.
Wetlands	
Category I	Wetlands listed by the Washington Natural Heritage Program as having high conservation value

Classification	Classification Criteria Summary
	Bogs, Mature Forest, and Old Growth Forest Wetlands
	Estuarine wetlands (greater than or equal to one acre) & Coastal Lagoons (((~~greater than or equal to 1/10 acre~~)))
	High Level Habitat Function (habitat function score is 8-9)
	Moderate Level Habitat Function (habitat function score is ((~~5~~)) 6-7)
	Total score 23 or above but not meeting above criteria
Category II	Estuarine wetlands (less than one acre) and Coastal Lagoons
	High level of function for habitat (habitat function score is 8-9)
	Moderate level of function for habitat (habitat function score is ((~~5~~)) 6-7)
	High level of function for water quality improvement and low for habitat (water quality function score is 8-9 and habitat function score is ((~~less than~~)) 5 or less)
	Total score 20-22 but not meeting above criteria
Category III	Moderate to High Level Habitat Function (habitat function score is ((~~5-7~~)) 6-9)
	Total score of 16-19 but not meeting above criteria
Category IV	Total score for all functions less than 16

Section 14. Snohomish County Code Section 30.62A.310, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.310 General standards and requirements.

(1) This Part establishes specific standards and requirements for protection of wetlands, fish and wildlife habitat conservation areas, and their buffers, and under what circumstances mitigation may be used to address the impacts of development.

(2) Any development activity, action requiring a project permit or clearing occurring within wetlands, fish and wildlife habitat conservation areas, and buffers is prohibited unless conducted in compliance with this chapter.

(3) Except as otherwise provided in Part 500, all development activities, actions requiring a project permit or clearing shall be designed and conducted to achieve no net loss of critical area functions and values and comply with the following general standards and requirements:

(a) The project proponent shall make all reasonable efforts to avoid and minimize impacts to wetlands, fish and wildlife habitat conservation areas, and buffers in the following sequential order of preference:

(i) avoiding impacts altogether by not taking a certain action or parts of an action; ((~~or~~ ~~;~~))

(ii) when avoidance is not possible, minimizing impacts by limiting the degree or magnitude of the action and its implementation, using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts; and

(iii) mitigating for the affected functions and values of the critical area((~~;~~)).

(b) When mitigation is required it shall be conducted in accordance with the following requirements, unless otherwise provided in this chapter:

(i) mitigation location. Unless otherwise provided in this chapter, mitigation for impacts to the functions and values of wetlands, fish and wildlife habitat conservation areas, and buffers shall be in-kind and on-site. Off-site mitigation may be approved ((~~only~~)) in those situations where appropriate and adequate on-site mitigation cannot replace the function(s) of the wetlands, fish and wildlife habitat conservation area(s) or buffers at an equivalent level to the off-site location. Off-site mitigation must occur in the same sub-drainage basin for streams, lakes, and wetlands, or drift cell for marine waters((~~;~~)) unless the applicant's qualified professional can demonstrate that a mitigation site in a different sub-drainage basin is ecologically preferable.

(ii) mitigation timing. Mitigation shall be timed to reduce impacts to existing fisheries, wildlife, and flora and completed prior to granting of final building occupancy, or the completion or final approval of any development activity or action requiring a project permit for which mitigation measures have been required, except as set forth in chapter 30.84 SCC; ((~~and~~))

(iii) function replacement. Unless otherwise provided in this chapter, functions and values shall be replaced at a one to one ratio;

(iv) plantings shall be native species appropriate to the climate and ecoregion; and

(v) monitoring shall be required for a period of at least five years. If the mitigation goals described in the mitigation plan (SCC 30.62A.150) are not attained within the initially established monitoring period, the applicant remains responsible for managing the mitigation project until the goals of the mitigation plan are achieved.

(c) A project proponent may demonstrate compliance with subsection (3) of this section by:

(i) adhering to the standards and requirements in SCC 30.62A.320(1), .330(1), .340(1) and (2) and .450 as applicable; or by

(ii) adhering to the performance standards in SCC 30.62A.320(2) and (3), .330(2), .340(3) and (4) or .350 and mitigating for impacted functions and values as follows:

(A) any development activity, action requiring a project permit or clearing allowed pursuant to SCC 30.62A.320(2), .330(2), .340(3) or .350 shall also comply with general mitigation requirements in SCC subsection (3) of this section. Activities not listed or deviations from the standards contained in Part 300 may only be conducted pursuant to SCC 30.62A.350 or Part 500; and

(B) any development activity or action requiring a project permit listed in SCC 30.62A.320(2), .330(2), .340(3) or .350 shall also comply with the critical area study requirements of SCC 30.62A.140, and the mitigation plan requirements of SCC 30.62A.150((~~; and~~)) .

(d) Permanent identification and protection of wetlands, fish and wildlife habitat conservation areas, and their buffers shall be provided as required by SCC 30.62A.160.

Section 15. Snohomish County Code Section 30.62A.320, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.320 Standards and requirements for buffers and impervious surfaces.

Buffers shall be required adjacent to streams, lakes, wetlands, and marine waters to protect the functions and values of these aquatic critical areas.

(1) Buffer standards and requirements – no mitigation required. All development activities, actions requiring project permits, and clearing that comply with the buffer requirements of ((~~subsections (1)(a) through (g)~~)) subsection (1) of this section satisfy the avoidance criteria of SCC 30.62A.310(3) and are not required to provide mitigation.

(a) Buffer widths shall be as set forth in Table 2a or 2b below.

Table 2a Stream, Lake, and Marine Buffer Width Standards (Feet)

*Streams and Lakes**

Type S		150
Type F ((~~with anadromous or resident salmonids~~))		150
((~~Type F without anadromous or resident salmonids~~))		((~~100~~))
Type Np		50
Type Ns		50
Marine Waters		
Type 1	All marine waters	150

1 * When the stream or lake is located within the Special Flood Hazard Area, the buffer shall
2 be the greater of the width listed in Table 2a, the channel migration zone where mapped plus
3 50 feet, or the mapped floodway.

4

5 **Table 2b Wetland Buffer Width Standards (feet)**

Wetlands						
Wetland Category	**Description**	**Buffer Width Requirements (feet)**				
		Standard Buffer Width **	**High Intensity Land Use [1] ((~~[30.62A.340(4)(c)]~~)) See SCC 30.62A.320(4) for optional mitigation measures 1 and 2**			**Low Intensity Land Use [2]**
			Buffer w/out optional mitigation ((~~measure 1 or 2~~)) measures	**Buffer w/ optional mitigation measure 1 ((~~(*may use measure 1 OR 2~~))) or 2**	**Buffer w/ optional mitigation measures 1 AND 2**	
Wetlands containing salmonids (minimum)		150				

Wetlands						
Wetland Category	**Description**	**Buffer Width Requirements (feet)**				
		Standard Buffer Width **	**High Intensity Land Use [1] (([~~30.62A.340(4)(c)~~])) <u>See SCC 30.62A.320(4) for optional mitigation measures 1 and 2</u>**			**Low Intensity Land Use [2]**
			Buffer w/out <u>optional</u> mitigation ((~~measure 1 or 2~~)) <u>measures</u>	**Buffer w/ <u>optional</u> mitigation measure 1 (((~~*may use measure 1 OR 2~~))) <u>or 2</u>**	**Buffer w/ <u>optional</u> mitigation measures 1 AND 2**	
Category 1	Wetlands listed by the Washington Natural Heritage Program as having High Conservation Value	190	250	220((<u>*</u>))	190	125
	Bogs<u>, Mature Forest, and Old Growth Forest Wetlands</u>	190	250	220((<u>*</u>))	190	125
	Estuarine wetlands (greater than or equal to one acre) & Coastal Lagoons (((~~(greater than or equal to 1/10 acre)~~)))	150	200	175((<u>*</u>))	150	100
	High level habitat function	225	300	262((<u>*</u>))	225	150

Wetlands						
Wetland Category	**Description**	**Buffer Width Requirements (feet)**				
		Standard Buffer Width **	**High Intensity Land Use [1] ((~~[30.62A.340(4)(c)]~~)) See SCC 30.62A.320(4) for optional mitigation measures 1 and 2**			**Low Intensity Land Use [2]**
			Buffer w/out optional mitigation ((~~measure 1 or 2~~)) measures	**Buffer w/ optional mitigation measure 1 ((~~(*may use measure 1 OR 2)~~))) or 2**	**Buffer w/ optional mitigation measures 1 AND 2**	
	(habitat function score is 8-9)					
	Moderate level habitat function (habitat function score is ((~~5~~)) 6-7)	110	150	130((*))	110	75
	Total score 23 or above but not meeting above criteria	75	100	75		50
Category II	Estuarine wetlands (less than 1 acre)	110	150	130((*))	110	75
	Coastal Lagoon	150	200	175	150	100
	High level of function for habitat (habitat function score is 8-9)	225	300	262((*))	225	150

Wetlands						
Wetland Category	**Description**	**Buffer Width Requirements (feet)**				
		Standard Buffer Width **	**High Intensity Land Use [1] ((~~[30.62A.340(4)(c)]~~)) See SCC 30.62A.320(4) for optional mitigation measures 1 and 2**			**Low Intensity Land Use [2]**
			Buffer w/out optional mitigation ((~~measure 1 or 2~~)) measures	**Buffer w/ optional mitigation measure 1 ((~~(*may use measure 1 OR 2)~~)) or 2**	**Buffer w/ optional mitigation measures 1 AND 2**	
	Moderate to high level of function for habitat (habitat function score is ((~~5~~)) 6-7)	110	150	130((*))	110	75
	High level of function for water quality improvement and low for habitat (water quality function score is 8-9 and habitat function score is ((~~less than~~)) 5 or less)	75	100	75		50
	Total score 20-22 but not meeting above criteria	75	100	75		50
Category III	High or Moderate level habitat	110	150	110		75

Wetlands						
Wetland Category	**Description**	**Buffer Width Requirements (feet)**				
		Standard Buffer Width **	**High Intensity Land Use [1] (([~~30.62A.340(4)(c)~~])) See SCC 30.62A.320(4) for optional mitigation measures 1 and 2**			**Low Intensity Land Use [2]**
			Buffer w/out optional mitigation ((~~measure 1 or 2~~)) measures	**Buffer w/ optional mitigation measure 1 (((~~*may use measure 1 OR 2~~))) or 2**	**Buffer w/ optional mitigation measures 1 AND 2**	
	function (habitat function score is ((~~5-7~~)) 6 - 9)					
	Total score of 16-19 but not meeting above criteria	60	80	60		40
Category IV	Low level function score (less than 16)	40	50	40		25

1 High intensity land uses include:

- commercial or industrial uses
- nonresidential use in zones where the primary intent is residential use as per SCC 30.21.025
- Residential use (4 or more units/acre)
- High-intensity recreation (golf courses, ball fields, ORV parks, etc.)
- Public roads within the Urban Growth Area (UGA)

2 Low intensity land uses include:

- Forestry (cutting of trees only)
- Low-intensity open space (hiking, bird-watching, preservation of natural resources, etc.)
- Unpaved trails
- Utility corridor without a maintenance road and little or no vegetation management.

** Standard buffers represent moderate level land use intensity and include uses that are not defined as high or low intensity.

(b) Buffer widths shall be measured as follows:

(i) the buffer for streams, lakes, and marine waters shall be measured from the ordinary high-water mark extending horizontally in a landward direction ((~~and for~~)) if there is not a channel migration zone. If a channel migration zone is determined pursuant to SCC 30.62B.330, the buffer shall be measured horizontally from the landward edge of the channel migration zone;

(ii) the buffer for wetlands ((~~, the buffer~~)) shall be measured from the edge of the wetland extending horizontally in a landward direction;((~~and~~))

(((~~ii~~))) (iii) ((~~provided however,~~)) where the landward edge of the standard buffer shown in Table 2a or 2b extends on to a slope of 33 percent or greater, the buffer shall extend to a point 25 feet beyond the top of the slope((~~.~~)); and

(iv) if two or more stream, wetland, lake, or marine water buffers overlap, the wider buffer shall be applied.

(c) Buffers may exclude areas that are functionally and effectively disconnected from the critical area by an existing public or private road, or other legally established development that is to continue its legally established use. Areas of exclusion shall be limited to those buffer areas where buffer functions are blocked by the road or other legally established development.

(((~~c~~))) (d) New effective impervious surface restrictions:

(i) no new effective impervious surfaces are allowed within the buffer of streams, wetlands, lakes, or marine waters; and

(ii) total new effective impervious surfaces shall be limited to 10 percent within 300 feet of ((~~.~~)) any streams or lakes containing salmonids, wetlands containing salmonids, or marine waters containing salmonids, except when:

(A) ((~~any streams or lakes containing salmonids;~~

~~(B) wetlands containing salmonids; or~~

~~(C) marine waters containing salmonids.~~)) the new effective impervious surfaces are not within a flow path to the ordinary highwater mark of a stream, lake, wetland, or marine waters containing salmonids; or

(B) the flow path from the new effective impervious surfaces is functionally and effectively disconnected from the stream, lake, wetland, or marine water containing

salmonids by an existing public or private road, or other legally established development that is to continue its legally established use.

(((~~d~~))) (e) All development activities, actions requiring project permits, or clearing shall be designed to avoid the loss of or damage to trees in buffers due to blow down or other causes. If loss or damage does occur, mitigation measures must be taken to achieve no net loss of ecological values and functions.

(((~~e~~))) (f) All development activities, actions requiring project permits, or clearing shall be sited and designed to prevent the need for shoreline or bank stabilization and structural flood hazard protection measures for the life of the development except as allowed pursuant to SCC 30.62A.330(2)(b).

((~~(f) The following measures for reducing buffer width and area may be used without a critical area study or mitigation plan:~~

~~(i) separate tract reductions. Up to a 15 percent reduction of the standard buffer is allowed when the buffer and associated aquatic critical area are located in a separate tract as specified in SCC 30.62A.160(3);~~

~~(ii) fencing reductions. Up to a 15 percent reduction of the standard buffer is allowed when a fence is installed along the perimeter of the buffer. The fence shall be designed and constructed as set forth below:~~

~~(A) the fence shall be designed and constructed to be a permanent structure;~~

~~(B) the fence shall be designed and constructed to clearly demarcate the buffer from the developed portion of the site and to limit access of landscaping equipment, vehicles, or other human disturbances;~~

~~(C) the fence shall allow for the passage of wildlife, with a minimum gap of one and one half feet at the bottom of the fence, and a maximum height of three and one half feet at the top; and~~

~~(D) the enhancement area complies with the enhancement ratios of Table 3; and~~

~~(iii) for permanent fencing combined with separate tracts, the maximum reduction shall be limited to 25 percent.~~))

(g) ((~~The~~)) One of the following buffer reduction methods ((~~are only~~)) is allowed in conjunction with a critical area study, pursuant to SCC 30.62A.140, demonstrating that the methods will provide protection equivalent to the standard requirements contained in Tables 2a and 2b((~~;~~)). The buffer reduction methods may not be combined.

(i) ((~~the~~)) Buffer averaging. The width of a buffer may be averaged, by reducing the width of a portion of the buffer and increasing the width of another portion of the same buffer, if all of the following requirements are met:

(A) averaging will not diminish the functions and values of the wetland(s), fish and wildlife habitat conservation area(s), or buffer(s);

(B) the total area of the buffer on the subject property may not be less than the area that would have been required if averaging had not occurred;

(C) the total area of buffer averaging shall be placed between the developed area and the wetland, lake, stream, or marine water;

(D) no part of the width of the buffer may be less than 50 percent of the standard required width or 25 feet, whichever is greater, for streams, lakes, and marine waters;

(E) the wetland buffer at its narrowest point shall not be less than the greater of either:

(I) 75 percent of the standard required buffer width, or

(II) 75 feet for Category I and II wetlands, 50 feet for Category III wetlands, and 25 feet for Category IV wetlands;

((~~(E)~~)) (F) averaging of a buffer shall not be allowed where the reduction extends into associated sloping areas of 33 percent or greater; and

((~~(F)~~)) (G) buffers on isolated ((-)) wetlands or lakes located in close proximity to other aquatic critical areas shall be connected by corridors of native vegetation where possible using the buffer averaging provisions of this section and the following criteria:

((~~(1)~~)) (I) the width of the corridor connection between the aquatic critical areas shall be no less than the combined average of the standard buffers for each of the critical areas, provided that if there is not sufficient buffer area available when using averaging to establish a connection, a connection is not required;

((~~(2)~~)) (II) no more than 25 percent of the buffer of the individual critical areas shall be used to make a corridor connection; and

((~~(3)~~)) (III) the corridor connection shall be established where feasible using the highest quality habitat existing between the critical areas((~~;~~)).

(ii) ((~~enhancement~~)) Enhancement reductions. Up to a 25 percent reduction of the standard buffer width and area is allowed provided the project proponent demonstrates the enhancement complies with all of the following criteria:

(A) a comparative analysis of buffer functions and values prior to and after enhancement, demonstrates that there is no net loss of buffer functions and values;

(B) a full enhancement reduction shall only be allowed where it can be demonstrated that the existing buffer functions and values are non-existent or significantly degraded. Buffers with partial function may receive a partial or prorated reduction; and

(C) the total buffer area after reduction is not less than 75 percent of the total buffer area before reduction((~~;~~)).

(((~~(iii) reductions may be combined based on the following criteria:~~

~~(A) for enhancement combined with permanent fencing, the maximum reduction in width and area shall be limited to 30 percent; and~~

~~(B) for enhancement combined with separate tracts, the maximum reduction in both width and area shall be limited to 30 percent.~~

~~(h) When averaging is used in combination with any or all of the reduction methods contained in this section, the buffer shall not be reduced to less than half of the standard buffer widths contained in SCC subsection (1)(a) of this section, Tables 2a or 2b.~~))

(2) Buffer standards and requirements - mitigation required. All actions, structures, or facilities listed in this section are allowed in buffers only when they are determined to be unavoidable pursuant to SCC 30.62A.310(3) and are conducted according to the standards and requirements identified in this section. When a permit is required, an applicant must also provide a critical area study meeting the requirements of SCC 30.62A.140 and a mitigation plan meeting the requirements of SCC 30.62A.150.

(a) New utilities and transportation structures are allowed within buffers when:

(i) no other feasible alternative exists or the alternative would result in unreasonable or disproportionate costs; ((~~and~~))

(ii) location, design, and construction minimizes impacts to the buffers pursuant to SCC 30.62A.310((~~.~~)); and

(iii) for underground utility or transportation corridors, the entrance and exit portals shall be located completely outside of the buffer, and the corridor shall not alter the percolation of surface water through the soil column or the groundwater connection to adjacent critical areas as demonstrated by a professional hydrologist study.

(b) Stormwater ((~~detention/retention~~)) facilities are allowed pursuant to the requirements of SCC 30.63A.570 and the Snohomish County Drainage Manual.

(c) Access through buffers is allowed provided it is designed and constructed to be the minimum necessary to accommodate the use or activity.

(d) Construction of pedestrian walkways or trails in buffers is allowed when constructed with natural permeable materials and does not exceed 6 feet in width.

(e) Trimming of vegetation for purposes of providing a view corridor in a buffer is allowed provided that:

(i) trimming shall not include felling, topping, or removal of trees and be limited to hand pruning of branches and vegetation;

(ii) trimming and limbing of vegetation for the creation and maintenance of view corridors shall occur in accordance with the pruning standards of the International Society of Arboriculture (See articles published by the International Society of Arboriculture, Consumer Information Program, updated July, 2005);

(iii) trimming shall be limited to view corridors of 30 feet wide or 50 percent of the lot width, whichever is less;

(iv) no more than 30 percent of the live crown shall be removed; and

(v) the activity will not increase the risk of landslide or erosion.

(f) New shoreline and bank stabilization measures or flood protection are allowed pursuant to SCC 30.62A.330(2).

(g) Reconstruction or replacement of buildings may be allowed provided the new building does not encroach further into a critical area or its buffer than did the original building being reconstructed or replaced.

(3) Buffer standards and requirements – mitigation ratios.

(a) The mitigation ratios in Table 3 shall apply to buffer impacts ((~~and mitigation measures~~)) that exceed those allowed in ((~~subsections (1)(f)(i), (1)(f)(ii), (1)(g)(i), and (1)(g)(ii) of this section~~)) SCC 30.62A.320(1).

(b) Except as provided in subsections (3)(c) and (d) of this section, to mitigate the loss of buffer functions and values, the ratios in Table 3 shall be required. The ratios are based upon the existing type of vegetative cover and are expressed in terms of the units of mitigation area needed to replace the lost functions and values of the impacted buffer area.

(c) Enhancement shall occur in accordance with enhancement criteria contained in ((~~subsections (1)(g)(ii)(A), (B) and (C) of this section~~)) SCC 30.62A.320(1)(g)(ii).

(d) For temporary impacts, the ratios shall be ((~~to be~~)) 1:1. Temporary impacts are those that can be restored to pre-disturbance conditions in one growing season.

(e) The following areas shall not be part of the buffer mitigation area:

(i) easements for utility corridors, stormwater facilities, rights-of-way, and streams conveyed underground;

(ii) driveways;

(iii) roads; or

(iv) any paved or graveled areas intended to convey vehicle or foot traffic.

Table 3 Buffer Mitigation Ratios

Existing Riparian habitat vegetation type	Creation	Enhancement [1]
Mature forest	6:1	12:1
Non-mature forest	3:1	6:1
Shrub	2:1	4:1
Non-woody vegetation	1.5:1	3:1
No vegetated cover	1:1	2:1

1 enhancement of the existing buffer is allowed in lieu of creation for up to one acre of buffer loss

(4) Wetland buffer standards and requirements – high intensity land use optional mitigation measures. The following optional mitigation measures and process requirements may be applied to reduce wetland buffer widths shown in SCC 30.62A.320(1)(a) Table 2b for high intensity land uses.

(a) *Optional mitigation measure 1.* To qualify for the reduced buffer widths listed in SCC 30.62A.320(1)(a) Table 2b, all applicable mitigation measures from Table 4 shall be used to minimize impacts to wetlands from high intensity land uses;

Table 4 Mitigation Measures for High Intensity Land Uses

Type of disturbance	Activities and uses that cause disturbances	Measures to minimize impacts
Lights	• Parking lots • Warehouses • Manufacturing • Residential • Commercial/industrial • Recreation (e.g., athletic fields) • Agricultural building	• Direct lights away from wetland • Only use lighting where necessary for public safety and keep lights off when not needed • Use motion-activated lights • Use full cut-off filters to cover light bulbs and direct light only where needed • Limit use of blue-white colored lights in favor of red-amber hues • Dim light to the lowest acceptable intensity
Noise	• Manufacturing • Residential • Industrial • Recreation (e.g., athletic fields, bleachers, etc.) • Agriculture	• Locate activity that generates noise away from the wetland • Construct a fence to reduce noise impacts on adjacent wetland and buffer • Plant a strip of dense shrub vegetation adjacent to wetland buffer
Toxic runoff *	• Parking lots • Roads • Manufacturing • Residential areas • Landscaping • Application of pesticides • Commercial/industrial • Agriculture	• Route all new untreated runoff away from wetland while ensuring that wetland is not dewatered • Establish covenants governing use of pesticides within 150 feet of wetland • Apply integrated pest management
Stormwater runoff	• Parking lots • Roads • Manufacturing	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters buffer

Type of disturbance	Activities and uses that cause disturbances	Measures to minimize impacts
	• Residential areas • Commercial/industrial • Landscaping/ lawns • Other impermeable surfaces, compacted soil, etc.	• Infiltrate or treat, detain, and disperse new runoff from impervious surfaces and lawns
Pets and human disturbance	• Residential areas • Recreation	• Use privacy fencing • Plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion • Place wetland and its buffer in a separate tract • Place signs around the buffer every 50-200 feet, and for subdivisions place signs at the back of each residential lot • When platting new subdivisions, locate greenbelts, stormwater facilities, and other lower-intensity uses adjacent to buffers
Dust	• Tilled fields • Roads	• Use best management practices to control dust

***** These measures may not be adequate for minimizing toxic runoff if threatened or endangered species are present at the site.

(b) *Optional mitigation measure 2.* For Category I, II, or III wetlands that score moderate or high for habitat (6 points or more for the habitat functions), to qualify for the reduced buffer widths listed in SCC 30.62A.320(1)(a) Table 2b, a habitat corridor shall be preserved that meets the following criteria:

(i) except as allowed in SCC 30.62A.320(4)(b)(ii), the habitat corridor shall connect the Category I or II wetland to any other wetland, fish and wildlife habitat conservation area, or buffer which is:

(A) on the same property or within the same development, including all phases proposed;

(B) on adjacent property and already protected as Native Growth Protection Area or Critical Area Protection Area or other permanently protected open space suitable for wildlife habitat use, and either extends to the development property boundary or is connected by easement; or

(C) on county, state, or federal land used for forestry, conservation, or passive recreation parks;

(ii) the habitat corridor may connect to a stormwater detention facility on-site or on an adjacent site if it is designed to replicate a natural pond or wetland;

(iii) the habitat corridor shall meet the following minimum physical characteristics:

(A) the corridor shall consist of a relatively undisturbed, vegetated corridor; and

(B) the corridor shall be a minimum width of 100 feet;

(iv) the department may approve alternative configurations through innovative development design under SCC 30.62A.350; and

(v) the following activities are allowed within the habitat corridor:

(A) unpaved trails limited to single-file paths for foot traffic that require minimal maintenance and do not allow bicycles and motorized vehicles;

(B) hazardous tree management with the creation of snags and down logs favored over tree removal whenever possible;

(C) hand removal of invasive plant species;

(D) restorative/enhancement planting with native species to increase species diversity or replace plants lost to disease or damage; and

(E) planting with native species along outer edge of corridor to increase plant density and discourage disturbance or intrusion.

(c) Process requirements in Part 100 shall be supplemented with the necessary information to document the mitigation locations and protection requirements, provide an assessment of functions and values and an evaluation of the protection achieved by the optional mitigation measures, and establish provisions for permanent protection.

Section 16. Snohomish County Code Section 30.62A.330, last amended by Amended Ordinance No. 19-020 on July 3, 2019, is amended to read:

30.62A.330 Standards and requirements for activities conducted within streams, lakes, and marine waters.

This section provides standards and requirements for activities conducted within streams, lakes, and marine waters. Protection of streams, lakes, and marine waters is inextricably linked to protection of the adjacent buffers. Standards and requirements for buffers adjacent to streams, lakes, and marine waters are found in SCC 30.62A.320.

(1) *Standards and requirements for streams, lakes, and marine waters - no mitigation required.* Any development activity, action requiring project permit, or clearing that does not encroach into streams, lakes, or marine waters and provides buffers consistent with the requirements of SCC 30.62A.320(1) satisfies the avoidance criteria of SCC 30.62A.310(3) and does not require mitigation.

(2) *Standards and requirements for streams, lakes, and marine waters - mitigation required.* All actions, structures, or facilities listed in this ((~~section~~)) subsection are allowed only when they are determined to be unavoidable pursuant to SCC 30.62A.310(3), and are conducted according to the standards and requirements identified in this ((~~section~~)) subsection. When a permit is required, an applicant must also provide a critical area study meeting the requirements of SCC 30.62A.140 and a mitigation plan meeting the requirements of SCC 30.62A.150.

(a) All development activities, actions requiring project permits, and clearing shall meet the following requirements:

(i) the project shall be sited and designed to prevent the need for shoreline or bank stabilization and structural flood hazard protection measures for the life of the development;

(ii) the project shall be sited and designed to avoid the need for new or maintenance dredging; and

(iii) the project shall not obstruct the source and movement of sediment from bluffs along marine waters except as necessary pursuant to subsection (2)(b) of this section.

(b) *Shoreline and streambank stabilization and flood protection measures.* Shoreline and streambank stabilization and flood protection measures are only allowed to protect an existing primary structure; new or existing utilities, roads, and bridges; agricultural land; or as part of a project where the sole purpose is to protect or restore wetlands, fish and wildlife habitat conservation areas, or buffers. Activities allowed under subsection (2)(b) of this section shall meet the following conditions:

(i) the applicant shall submit a geotechnical report as required pursuant to SCC 30.62B.140 which establishes that the stabilization or flood protection is necessary;

(ii) non-structural measures shall be used unless a geotechnical report indicates that the only alternative is use of structural stabilization measures;

(iii) the activity shall avoid interrupting hyporheic zone continuity; and

(iv) the activity should be designed and constructed based on the guidance contained in the Marine Shoreline Design Guidelines (Washington State Department of Fish and Wildlife, 2014) and the Soft Shoreline Stabilization Shoreline Master Program Planning and Implementation Guidance (Washington State Department of Ecology, March 2014, Publication No. 14-06-009) as appropriate for the type of critical area impacted.

(c) *Utility construction.* For utilities permitted under Title 30 SCC and Title 13 SCC, the following additional requirements shall apply:

(i) new utility crossings shall be bored beneath types S and F streams, and channel migration zones where feasible, and comply with SCC 30.62A.320(2)(a)(iii);

(ii) underground utilities shall avoid interrupting hyporheic zone continuity;

(iii) utilities shall be contained within the developed footprint of existing roads or utility crossings, where feasible;

(iv) utilities placement shall not increase or decrease the natural rate of shore migration, channel migration or longshore sediment transport within a drift cell;

(v) utilities placement shall avoid interrupting downstream movement of wood and sediment; and

(vi) new overhead electrical facilities are allowed when no other feasible alternative exists or the alternative would result in unreasonable or disproportionate costs, and the location, design and construction minimizes impacts to streams, lakes, and marine waters pursuant to SCC 30.62A.310.

(d) Road crossings are subject to the following requirements:

(i) road crossings on fish-bearing streams shall be designed according to the guidelines set forth in Water Crossing Design Guidelines (Washington Department of Fish and Wildlife, May 9, 2013) or as subsequently amended or revised; ((~~and~~))

(ii) road crossings shall consider the guidelines set forth in Incorporating Climate Change into the Design of Water Crossing Structures: Final Project Report (Washington Department of Fish and Wildlife, revised November 2017) or as subsequently amended or revised; and

((~~(ii)~~)) (iii) road crossings shall avoid interrupting natural rates of the downstream movement of woody debris and sediment.

(e) *Stream conveyances.* Where feasible, stream conveyances shall avoid interrupting natural rates of the downstream movement of woody debris and sediment.

(f) Docks, piers, and floats are subject to the following requirements:

(i) use of toxic or treated materials that will come in contact with the water is prohibited;

(ii) construction timing shall avoid critical life cycle stages of fish and wildlife;

(iii) these structures shall avoid critical saltwater habitats; and

(iv) joint use of docks, piers and floats shall be required where feasible.

Section 17. Snohomish County Code Section 30.62A.340, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.340 Standards and requirements for activities conducted in wetlands.

Protection of wetlands is inextricably linked to protection of the adjacent buffer areas. Standards and requirements for the buffers adjacent to wetlands are found in SCC 30.62A.320. Additional standards and requirements for development activities, actions requiring project permits, and clearing within wetlands are in this section.

(1) *Standards for wetlands - prohibitions.* The following actions are prohibited:

(a) Filling of estuarine wetlands, wetlands listed by the Washington Natural Heritage Program as having High Conservation Value, mature forested wetlands ((~~and~~)), Category I bogs, and old growth forest wetlands;

(b) Point discharges of stormwater into Category I bogs; and

(c) Septic systems and effective impervious surfaces within 300 feet of Category I bogs.

(2) *Standards for wetlands - no mitigation required*. All development activities, actions requiring project permits, and clearing that do not encroach into wetlands and provide buffers consistent with the requirements of SCC 30.62A.320(1) ((~~(a) through (f)~~)) and the prohibitions in subsection (1) of this section satisfy the avoidance criteria of SCC 30.62A.310(3) and do not require mitigation.

(3) *Standards for wetlands - mitigation required.* The actions, structures, and facilities listed in this ((~~section~~)) subsection are allowed only when they are determined to be unavoidable pursuant to SCC 30.62A.310, are consistent with the prohibitions in subsection (1) of this section, and are conducted according to the standards and requirements identified in this section. When a permit is required, an applicant must also provide a critical area study meeting the requirements of SCC 30.62A.140 and a mitigation plan meeting the requirements of SCC 30.62A.150.

(a) New utilities and transportation structures are allowed within wetlands provided no other feasible alternative exists and activities comply with SCC 30.62A.320(2)(a)(iii).

(b) Stormwater ((~~detention/retention~~)) facilities are prohibited in Category I bogs pursuant to subsection (1)(b) of this section but are otherwise allowed pursuant to the requirements of SCC 30.63A.570 and the Snohomish County Drainage Manual.

(4) *Standards for wetlands – mitigation requirements*.

(a) Mitigation type. Mitigation shall be provided through one of the following mechanisms listed in order of preference:

(i) a mitigation bank established and managed by a third party that meets the requirements in SCC 30.62A.360(1) through (3);

(ii) an in-lieu fee program established and managed by a third party that meets the requirements of SCC 30.62A.360(4) and (5); or

(iii) project proponent mitigation provided that it is demonstrated through a critical areas study pursuant to SCC 30.62A.140 to be ecologically preferable to the mitigation options in SCC 30.62A.340(4)(a)(i) and (ii).

(b) Mitigation ratios ((-)). Except as provided in ((~~subsection (4)(b)~~)) subsections (4)(d) and (e) of this section, to mitigate the loss of wetland functions, the ratios in Table ((4)) 5 shall be required. The ratios are expressed in terms of the units of area needed to replace the lost functions and values of the wetland.

(c) The following areas shall not be part of the mitigation area:

(i) easements for utility corridors, stormwater facilities, rights-of-way, and streams conveyed underground;

(ii) driveways;

(iii) roads; or

(iv) any paved or graveled areas intended to convey vehicle or foot traffic.

(((~~b~~))) (d) For temporary impacts, the ratios shall be to be 1:1. Temporary impacts are those that can be restored to pre-disturbance conditions in one growing season.

Table ((4)) 5 Wetland Mitigation Ratios

Category/Type of Wetland	Creation	Rehabilitation	Enhancement [1]
All Category IV	1.5:1	3:1	((~~3:1~~)) 6:1

Category/Type of Wetland	Creation	Rehabilitation	Enhancement [1]
All Category III	2:1	4:1	((~~4:1~~)) 8:1
Category II Estuarine	innovative development only	4:1	4:1
All other Category II	3:1	6:1	((~~6:1~~)) 12:1
Category I based on score for functions	4:1	8:1	((~~8:1~~)) 16:1
Category I listed by the Washington Natural Heritage Program as having High Conservation Value	Innovative development only	Innovative development only	Innovative development only
Category I Coastal Lagoon	Innovative development only	Innovative development only	Innovative development only
Category I Bog, Mature Forest, and Old Growth Forest Wetlands	Not allowed	Innovative development only	Innovative design only
Category I Estuarine	Innovative development only	Innovative development only	Innovative development only

1 Enhancement is allowed in lieu of creation for up to one acre of wetland fill

(e) Credit-Debit Method. As an alternative to the ratios in Table 5, the department may allow the amount of mitigation required to be determined using the Credit-Debit Method in accordance with Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington, Final Report, March 2012 (Department of Ecology, Publication # 10-06-011), or as subsequently amended or revised.

(((~~(c) To reduce wetland buffer widths from the width required for high intensity land uses, optional mitigation measures and process requirements may be applied to reduce wetland buffer widths as shown in SCC 30.62A.320(1)(a) Table 2b.~~

~~(i) Optional mitigation measures.~~

~~(A) *Mitigation measure 1.* All applicable mitigation measures from Table 5 may be used to mitigate impacts to wetlands from high intensity land uses. When fencing and/or separate tracts are used pursuant to this section additional buffer width reductions for fencing or separate tracts otherwise allowed in SCC 30.62A.320(1) shall not be applied~~;

Table 5 Mitigation Measures for High Intensity Land Uses

Examples of disturbance	Activities and uses that cause disturbances	Examples of measures to minimize impacts
Lights	• Parking lots • Warehouses • Manufacturing • Residential	• Direct lights away from wetland
Noise	• Manufacturing • Residential	• Locate activity that generates noise away from the wetland
Toxic runoff *	• Parking lots • Roads • Manufacturing • Residential areas • Landscaping	• Route all new untreated runoff away from wetland while ensuring that wetland is not dewatered • Establish covenants governing use of pesticides within 150 feet of wetland • Apply integrated pest management
Stormwater runoff	• Parking lots • Roads • Manufacturing • Residential areas • Commercial • Landscaping	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters buffer
Change in water regime	• Impermeable surfaces • Lawns • Tilling	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surface and new lawns

Examples of disturbance	Activities and uses that cause disturbances	Examples of measures to minimize impacts
Pets and human disturbance	• Residential areas	• Use privacy fencing; plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion; place wetland and its buffer in a separate tract

* These examples are not necessarily adequate for minimizing toxic runoff if threatened or endangered species are present at the site.

(B) *Mitigation measure 2.* For Category I or II wetlands that score moderate or high for habitat (5 points or more for the habitat functions), a habitat corridor shall be preserved that meets the following criteria:

(I) Except as allowed in number (II) below, the habitat corridor shall connect the Category I or II wetland with a habitat score of 5 or more to any other wetland, fish and wildlife habitat conservation area or buffer which is:

(aa) on the same property or within the same development, including all phases proposed;

(bb) on adjacent properties and already protected as Native Growth Protection Areas or Critical Area Protection Areas or other permanently protected open space suitable for wildlife habitat use and which either extends to the property boundary or connected by easement; or

(cc) on county, state or federal land used for forestry, conservation or passive recreation parks.

(II) The habitat corridor may connect to a stormwater detention facility, either on-site or on an adjacent site, if it is designed to replicate a natural pond or wetland.

(III) The habitat corridor shall meet the following minimum physical characteristics:

(aa) The corridor shall consist of a relatively undisturbed, vegetated corridor.

(bb) The corridor shall maintain an average width equal to the difference between the high intensity buffer and the standard buffer for the relevant Category I or II wetland as shown in Table 6, except when the corridor is connecting two Category I or II wetlands each with a habitat score of 5 or more and the corridor maintains an average width of 100 feet, it will fulfill the connection requirement for both wetlands.

Table 6 Average Width for Habitat Corridor (Feet)

Wetland Category	Description	Standard Buffer Width	High Intensity Buffer Width	Average Habitat Corridor Width
Category I	Listed by the Washington Natural Heritage Program as having High Conservation Value	190	250	60
	Bogs	190	250	60
	Estuarine (at least 1 acre) & Coastal Lagoons	150	200	50
	High Level Habitat Function (habitat function score is 8 or greater)	225	300	75
	Moderate Level Habitat Function (habitat function score is 5-7)	110	150	40
Category II	Estuarine (less than 1 acre)	110	150	40
	High Level Habitat Function (habitat function score is 5-7)	225	300	75
	Moderate Level Habitat Function (habitat function score is 5-8)	110	150	40

(cc) The corridor shall maintain a width at each connection not less than the required average width as described in subsection (4)(c)(i)(B)(III)(bb) of this section.

(dd) The director may approve alternative configurations which meet the intent of no net loss of habitat functions and values pursuant to SCC 30.62A.350.

(IV) The following activities are allowed within the habitat corridor:

~~(aa) If the corridor maintains an average width of 100 feet or more, an unpaved trail - narrow single file walking path no bicycles or motorized vehicles allowed – may be allowed.~~

~~(bb) Vegetation management is allowed as follows:~~

~~(A) hazardous tree management - creation of snags and down logs is favored over tree removal whenever possible~~

~~(B) hand removal of invasive plant species~~

~~(C) when trails are allowed as per subsection (4)(c)(i)(B)(IV)(aa) of this section, minimal trail maintenance is also allowed~~

~~(D) restorative/enhancement plantings with native species to increase species diversity or replace plants lost to disease or damage; and~~

~~(E) planting with native species along outer edge of corridor to increase plant density and discourage disturbance or intrusion.~~

~~(ii) Process requirements in Part 100 shall be supplemented with the necessary information to document the mitigation locations and protection requirements, provide an assessment of functions and values and evaluation of the level of protection achieved by the mitigation measures and establish provisions for permanent protection.~~))

Section 18. Snohomish County Code Section 30.62A.350, last amended by Ordinance No. 15-103 on January 11, 2016, is amended to read:

30.62A.350 Innovative development design.

(1) A project permit applicant may request approval of an innovative design based on best available science, which addresses wetland, fish and wildlife habitat conservation area, or buffer treatment in a manner that deviates from the standards contained in Part 300. The innovative design shall comply with all reporting, monitoring, and performance standards of this chapter not subject to the proposed deviation. The applicant shall demonstrate in a critical area study and mitigation plan required pursuant to SCC 30.62A.140 and SCC 30.62A.150 why the standards of Part 300 cannot be met and how the innovative development design complies with the following requirements:

(a) The innovative design will achieve protection at least equivalent to the treatment of the functions and values of the critical area(s) which would be obtained by applying the standard prescriptive measures contained in this chapter;

(b) Applicants for innovative designs are encouraged to consider measures prescribed in guidance documents, such as watershed conservation plans or other similar conservation plans, and low impact stormwater management strategies that address ((~~wetlands~~)) wetland,

fish and wildlife habitat conservation area, or buffer protection consistent with this section; and

(c) The innovative design will not be materially detrimental to the public health, safety, or welfare or injurious to other properties or improvements located outside of the subject property.

(2) Applicants proposing development activities on properties designated as Urban Center ((~~Transit Pedestrian Village~~)) Light Rail Community, Mixed Use Corridor, or Urban Village on the county's Future Land Use Map may utilize the innovative design provisions in this section to deviate from the requirements in Part 300. Such deviations may include but are not limited to provisions related to avoidance of impacts, standard buffer widths, allowed uses in buffers and wetlands, and mitigation ratios ((~~and use of off-site mitigation~~)). The applicant shall demonstrate in a critical area study required pursuant to SCC 30.62A.140 and mitigation plan pursuant to SCC 30.62A.150:

(a) Why the deviation is necessary to implement the policies in the county's comprehensive plan ((~~General Policy Plan~~)), including the policies within the Land Use Element under objective LU 3.B, and the Natural Environment Element; and

(b) How the innovative development design achieves protection at least equivalent to the treatment of the functions and values of the critical area(s) which would be obtained by applying the standard prescriptive measures contained in Part 300.

Section 19. A new Snohomish County Code Section 30.62A.360 is added to read:

30.62A.360 Mitigation banking and in-lieu fee program.

(1) Mitigation banking. The department may approve the establishment and use of a wetland, fish and wildlife habitat conservation area, or buffer mitigation bank to provide compensatory mitigation required by this chapter. The department's approval may allow for deviations from the requirements of Parts 100 through 400 with respect to the treatment of wetlands, fish and wildlife habitat conservation areas, or buffers.

(2) Criteria for approval of use of mitigation banks:

(a) The following must have been approved by the county and the federal, state, and local agencies with jurisdiction:

(i) a memorandum of agreement (MOA) defining guidelines for establishing a wetland, fish and wildlife habitat conservation area, or buffer mitigation banking program and an implementation manual establishing a mitigation bank at a specific site; and

(ii) the MOA and/or implementation manual shall include, but not necessarily be limited to, provisions for the following:

(A) specific criteria and standards for use of the mitigation bank;

(B) methods for tracking credits;

(C) an interagency oversight committee composed of representatives from each of the agencies with jurisdiction for the purpose of regulatory review and approval of banking activities;

(D) permanent management and maintenance to assure the long-term viability of the bank site;

(E) professional construction oversight to ensure successful construction of the mitigation bank site;

(F) quantitative and qualitative performance standards;

(G) systematic compliance and performance monitoring to determine the degree to which the site meets performance standards;

(H) a schedule and timeline for compliance and performance monitoring;

(I) contingency plans;

(J) methods to be used to determine the functions and values of replacement wetlands, fish and wildlife habitat conservation area or buffers based on a watershed analysis;

(K) provisions for assuring the funding of long-term maintenance of the bank and performance of mitigation and monitoring requirements;

(L) a description of wetland, fish and wildlife habitat conservation area, or buffer mitigation ratios to be used and justification for these ratios based upon best available science. Mitigation ratios will be based upon consideration of factors including but not limited to the likelihood of success of the mitigation, the types and quality of wetland, fish and wildlife habitat conservation areas, or buffers involved, research results, and monitoring results;

(M) the mitigation plan requirements contained in SCC 30.62A.150; and

(N) provisions for mitigation sequencing that requires at minimum that all proposals using a mitigation bank shall have made reasonable efforts to avoid and minimize impacts to wetlands, fish and wildlife habitat conservation areas, and buffers.

(b) Credits from a wetland mitigation bank certified under chapter 173-700 WAC may be used to compensate for impacts located within the service area specified in the mitigation bank instrument if all the following are met:

(i) the department determines that it would provide appropriate compensation for the proposed impacts;

(ii) the proposed use of credits is consistent with the terms and conditions of the mitigation bank instrument; and

(iii) mitigation ratios are consistent with ratios specified in the mitigation bank instrument.

(c) The use of the mitigation bank will result in equivalent treatment of the functions and values of the wetland, fish and wildlife habitat conservation area, or buffer to offset the impacts to critical areas functions and values on the project site such that the total net impact will be no net loss of critical area functions and values in the watershed in which the impacts will occur. For the purposes of this section, "watershed" means an area identified as a state of Washington water resource inventory area (WRIA) under WAC 173-500-040.

(d) The creation and operation of the mitigation bank and development activity which utilizes the wetland, fish and wildlife habitat conservation area, or buffer bank, shall not create unmitigated long term or permanent adverse impacts to the critical functions and values of the wetlands, fish and wildlife habitat conservation areas, or buffers in the sub-drainage basin in which the impacts will occur. Critical functions and values listed at SCC 30.62A.220 are those that are important to the long-term ecological viability of the wetlands, fish and wildlife habitat conservation areas, or buffers in the sub-drainage basin.

(3) The department shall make MOAs and mitigation banking documents available for public review and comment prior to approval.

(4) In-lieu fee mitigation. The department may approve the establishment and use of a wetland, fish and wildlife habitat conservation area, or buffer mitigation in-lieu fee (ILF) program to provide compensatory mitigation required by this chapter. The department's approval may allow for deviations from the requirements of Parts 100 through 400 with respect to the treatment of wetlands, fish and wildlife habitat conservation areas, or buffers.

(5) Criteria for the use of an approved ILF program:

(a) in-lieu fee mitigation shall be conducted in accordance with the guidance contained in Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Version 2), Washington State Department of Ecology, US Army Corps of Engineers Seattle District, and U.S Environmental Protection Agency Region 10 (2021), Ecology Publication # 21-06-003, or latest revision;

(b) the department determines that an approved ILF program would provide appropriate compensation for the proposed impacts;

(c) the proposed use of credits is consistent with the terms and conditions of the approved ILF program;

(d) debits associated with the proposed impacts calculated by the applicant's qualified professional using the credit assessment method specified in the approved instrument for the ILF program; and

(e) The impacts are located within the service area specified in the approved ILF program.

Section 20. A new Snohomish County Code Section 30.62A.370 is added to read:

30.62A.370 Advance mitigation.

The department may approve the use of advance mitigation to provide compensatory mitigation required by this chapter. Advance mitigation shall be performed by the applicant and developed in accordance with Interagency Regulatory Guide: Advance Permittee-Responsible Mitigation, U.S. Army Corps of Engineers, Washington State Department of Ecology, and Washington State Department of Fish and Wildlife (2012), Ecology Publication #12-06-015, or latest revision, and Chapter 4.2 of Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Version 2), Washington State Department of Ecology, US Army Corps of Engineers Seattle District, and U.S Environmental Protection Agency Region 10 (2021), Ecology Publication # 21-06-003, or latest revision. Credits for advance mitigation may not be sold or transferred to another applicant.

Section 21. Snohomish County Code Section 30.62A.410, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.410 Purpose.

This Part establishes standards and requirements for the protection of critical species and ((~~state natural~~)) habitats, which includes:

(1) Species listed as threatened or endangered under RCW 77.12.020 and Title 16 United States Code;

(2) Species and habitats of local importance designated under ((~~SCC 30.62A.470; and~~)) SCC 30.62A.465 or through the nomination process under SCC 30.62A.470;

(3) ((~~The following~~)) Washington Department of Fish and Wildlife State listed sensitive species((~~:~~

~~(a) Larch mountain salamander;~~

~~(b) Common loon;~~

~~(c) Peregrine falcon;~~

~~(d) Olympic mudminnow;~~

~~(e) Pygmy whitefish;~~

~~(f) Gray whale;~~

~~(g) Bald eagle; and~~

~~(h) Margined sculpin.~~)); and

(4) State natural area preserves, natural resource conservation areas, and state wildlife areas, collectively referred to as "state natural habitats."

Section 22. Snohomish County Code Section 30.62A.420, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.420 Applicability.

(1) The provisions of this Part shall apply as of the effective date of the listing to all development activities, actions requiring project permits, and clearing occurring on a site containing a primary association area for a critical species. The provisions of this Part shall also apply to all development activities, actions requiring project permits, and clearing within a habitat of local importance or state natural habitat. The provisions of this Part shall apply in addition to any other requirements of this chapter.

(2) Actions subject to this chapter not requiring a project permit should consult with state or federal resource agencies with technical expertise and/or regulatory authority over such critical species or habitat or necessary protection measures and comply with the administrative rules for the species adopted pursuant SCC 30.62A.430.

Section 23. Snohomish County Code Section 30.62A.430, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.430 Administrative rules authorized.

In order to protect critical species and ((~~their~~)) habitats ((~~and state natural habitats~~)), the department shall develop administrative rules under chapter 30.82 SCC that establish protection requirements specific to these species and ((~~their~~)) habitats ((~~and state natural habitats~~)).

Section 24. Snohomish County Code Section 30.62A.440, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.440 Administrative rules - minimum protection requirements.

In developing administrative rules under this section, the department shall consider establishing at least the following minimum protections:

(1) Establishment of the primary association area. For critical species that are fish, the primary association area includes, but is not limited to, the buffer of the associated stream, lake, wetland, or marine water;

(2) Limitation on development activities within the primary association area;

(3) Limitation on access to the primary association area;

(4) Provisions for seasonal restrictions on construction activities where appropriate;

(5) Preservation of habitat for the critical species;

(6) Permanent protection pursuant to SCC 30.62A.160; ((~~and~~))

(7) Protection of habitats of local importance; and

(((~~7~~))) (8) Protection of state natural habitats.

Section 25. Snohomish County Code Section 30.62A.450, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.450 General standards and requirements.

Proponents for all development activities, actions requiring project permits, or clearing shall make all reasonable efforts to avoid and minimize impacts to critical species and ((~~state natural~~)) habitats pursuant to the requirements of this section, in the following sequential order of preference:

(1) Avoid impacts altogether by not taking a certain action or parts of an action; or

(2) When avoidance is not possible, minimize impacts by limiting the degree or magnitude of the action and its implementation, using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts; and

(3) Comply with rules adopted pursuant to SCC 30.62A.430 and a habitat assessment and management plan when required pursuant to SCC 30.62A.460.

Section 26. Snohomish County Code Section 30.62A.460, last amended by Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.62A.460 Habitat assessment and management plan contents.

For any development activity or action requiring a project permit occurring within the primary association area of a critical species ((~~or~~)), habitats of local importance, state natural habitats, special flood hazard areas, or Priority Habitats and Species (PHS) areas mapped by the Washington Department of Fish and Wildlife (WDFW), the ((~~director~~)) department may require all or a portion of the following:

(1) A critical area study meeting the requirements of SCC 30.62A.140;

(2) A map drawn to scale or survey showing the location and description of the primary association area(s) of the critical species or ((~~state natural~~)) critical habitats on the subject property;

(3) Evidence of use of the site by a critical species, including the location and nature of use;

(4) An assessment of how the proposed activities will affect the critical species and/or its habitat or the ((~~state natural~~)) critical habitat, and how the proposal will avoid, minimize, or mitigate impacts to those critical species ((~~and their habitats~~)) or ((~~state natural~~)) habitats pursuant to SCC 30.62A.450. The department shall waive this requirement when a proposed activity is consistent with the protection standards adopted in an administrative rule developed pursuant to SCC 30.62A.430; ((~~and~~))

(5) If applicable, the assessment shall include a description of the impact of the proposed development on existing floodplain and instream habitat functions and processes prepared in accordance with Regional Guidance for Floodplain Habitat Assessment and Mitigation in the Puget Sound Basin, FEMA Region 10 (2013), or latest revision; and

(((~~5~~))) (6) In the absence of an adopted administrative rule governing a listed species or ((~~state natural~~)) habitat, the applicant shall provide a habitat assessment and management plan consistent with the minimum requirements of SCC 30.62A.440. In addition, the habitat assessment and management plan shall contain an assessment of best available science applicable to the species or ((~~the state natural~~)) habitat, demonstrating how the proposal will provide sufficient protection of the critical species and its habitat or the ((~~state natural~~)) critical habitat. Applicants are encouraged to consult with the department, and federal and state agencies with technical expertise or regulatory jurisdiction.

Section 27. A new Snohomish County Code Section 30.62A.465 is added to read:

30.62A.465 Designation of species and habitats of local importance.

(1) Snohomish County designates the species and habitats in the Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) List, last updated June 2023, that are located in Snohomish County as species and habitats of local importance.

(2) Snohomish County designates the rare and high-quality ecosystems, and the rare plant species identified by the Washington Department of Natural Resources Natural Heritage Program (WNHP), last updated in 2024, that are located in Snohomish County as species and habitats of local importance.

(3) The department shall develop an administrative rule listing the species and habitats of local importance. The department shall review the PHS Program and WNHP listings annually and make updates to the administrative rule as necessary for consistency with these programs. The annual review shall commence in January.

Section 28. Snohomish County Code Section 30.62A.470, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62A.470 ((~~Species~~)) Nomination of species and habitats of local importance.

This section provides the process for the designation, nomination, and protection of additional species and habitats of local importance beyond those designated under SCC 30.62A.465. The designation, nomination, and protection strategies shall be based on best available science.

(1) Designation criteria.

(a) Designation of species or habitats of local importance must be based on both the following circumstances:

(i) protection of the ((~~native~~)) species and its primary association area through existing policies, laws, regulations, or non-regulatory tools is not adequate to prevent degradation of the species in the county; and

(ii) the primary association area nominated to protect a particular species is high quality ((~~native~~)) habitat or has a high potential to be high quality habitat, or provides landscape connectivity which contributes to the designated species' preservation.

(b) In addition to the requirements in SCC 30.62A.470(1)(a), designation of species or habitats of local importance must also be based on one or more of the following circumstances:

(i) local populations of a ((~~native~~)) species are in danger of extirpation based on existing trends;

(ii) local populations of a ((~~native~~)) species are likely to become threatened or endangered under state or federal law;

(iii) local populations of a ((~~native~~)) species are vulnerable or declining;

(iv) the ((~~native~~)) species has recreational, commercial, or tribal significance; ((~~or~~))

(v) long-term persistence of a ((~~native~~)) species is dependent on the protection, maintenance, and/or restoration of the nominated primary association area((~~.~~)) ;

(vi) The Washington Department of Natural Resources Natural Heritage Program (WNHP) prioritizes the species or habitat; or

(vii) The Washington Department of Fish and Wildlife identifies the species or habitat within their Priority Habitats and Species (PHS) Program.

(2) *Petition Contents.* The petition to nominate a species or habitat of local importance shall contain all the following:

(a) A map showing the nominated primary association area location(s);

(b) An environmental checklist in conformance with SCC 30.61.100;

(c) A written statement that

(i) identifies which designation criteria form the basis of the nomination;

(ii) includes supporting evidence that designation criteria are met; and

(iii) indicates what specific habitat feature(s) or plant communities are to be protected (e.g., nest sites, breeding areas, and nurseries);

(d) Recommended management strategies for the species, supported by the best available science and which meet the minimum requirements of SCC 30.62A.440; and

(e) An economic analysis identifying the cost of implementing a mitigation or protection plan and the financial impact of the requested designation on affected properties or local governments.

(3) *Approval Process.*

(a) *Timing.* Nominations for species or habitats of local importance will be considered by the council no more than once per year. The department will accept proposals for amendments at any time; however, proposals received after July 31st of each year will be processed in the next annual review cycle.

(b) *Process.* The county may include a species or habitat of local importance for protection pursuant to this section through adoption of legislation by the council. The council considers whether to adopt a motion to list a species or habitat of local importance through the following process:

(i) any person may nominate species or habitat for designation by submitting a petition meeting the requirements of SCC 30.62A.470(2) and payment of fees as required by chapter 30.86 SCC;

(ii) the department shall complete a SEPA threshold determination and provide notice of the petition as required under SCC 30.70.045 for SEPA threshold determinations associated with a project permit;

(iii) the department shall review the submittal of the petitioner, and coordinate and assemble all available comments of the public, other county departments, and other agencies. Based on the available record, and any other information that may be available, the department shall provide a staff report and recommendation to the council concerning whether the petition meets the requirements for approval;

(iv) the department shall submit to the executive an executive/council approval form (ECAF) containing the staff recommendation, all relevant SEPA documents, and a proposed motion which provides for disposition of the petition; and

(v) upon delivery of an ECAF to the council by the executive, the proposed motion will be subject to the requirements of chapter 2.48 SCC.

(c) *Cost of environmental studies.* Any person submitting a petition to nominate a species of local importance shall pay the cost of environmental review and studies necessary under SEPA, as required under chapter 30.61 SCC. The person may, at his or her own expense and to the extent determined appropriate by the responsible official, provide additional studies or other information.

(4) *Establishment of specific rules for protection.* Within 120 days of an action by the council, the department shall develop an administrative rule pursuant to chapter 30.82 SCC addressing protection of the species or habitat of local importance in compliance with this section.

(5) The department may establish administrative procedures necessary to administer this section.

Section 29. Snohomish County Code Section 30.62A.510, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.510 Minor development activity exceptions.

(1) Certain minor development activities may occur in or cause impacts to wetlands, fish and wildlife habitat conservation areas, or buffers provided the project proponent complies with best management practices (BMPs) adopted through rulemaking pursuant to chapter 30.82 SCC and all known and available reasonable technology (AKART) appropriate for compliance with this chapter to ensure no net loss of functions or values. ((~~Best management practices~~)) BMPs are physical, structural, or managerial practices which have gained general acceptance by professionals in the appropriate field to avoid, minimize, and mitigate adverse impacts to the functions and values of critical areas.

(2) All minor development activities authorized in ((~~this section~~)) SCC 30.62A.510(3) shall comply with administrative BMP rules upon adoption. Prior to adoption of such administrative rules, project proponents shall comply with all known and available BMPs as defined in subsection (1) of this section. The ((~~director~~)) department shall adopt BMPs for the minor development activities listed in this section pursuant to the rulemaking provisions of chapter 30.82 SCC.

(3) The following minor development activities may occur pursuant to this section:

(a) Normal maintenance and repair that does not expand the footprint of existing:

(i) improved public and private road rights-of-way,

(ii) utility corridors,

(iii) trails,

(iv) utility facilities,

(v) flood protection and bank stabilization structures,

(vi) stormwater facilities((~~;~~)), and

(vii) structures;

(b) Minor replacement, modification, extension, installation, or construction by a utility purveyor in an improved public road right-of-way;

(c) Survey or monument placement;

(d) Minor replacement or modification of existing facilities by a utility purveyor in an improved utility corridor;

(e) Minor replacement or modification by a utility purveyor of individual utility service lines connecting to a utility distribution system;

(f) Minor replacement, modification, minor installation or construction in an improved road right-of-way by the county or by the holder of a current right-of-way use permit;

(g) ((~~All development activities in non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet, and their associated buffers;~~)) Forest practices that are exempt from local regulation and conducted pursuant to the Forest Practices Act, chapter 76.09 RCW, and implementing regulations in title 222 WAC. This section does not apply to development activity or actions requiring a Class IV General forest practices permit pursuant to chapter 30.43F SCC;

(h) Removal of invasive weeds;

(i) Felling or topping of hazardous trees based on review by a qualified arborist;

(j) Minor replacement, modification, or installation of enhancement projects related to drainage, water quality, or habitat ((~~enhancement projects~~));

(k) All other on-going lawfully established development activities not specifically addressed in this chapter; ((~~and~~))

(l) Site investigative work necessary for land use application submittals pursuant to this title, such as surveys, soil borings, test pits, percolation tests, non-mechanical survey monument placement, data collection by non-mechanical means or other related activities, provided that the work is otherwise consistent with the provisions of other local, state, and federal laws and regulations. Land disturbance shall be no greater than that necessary to accomplish the site

investigative work and disturbed areas shall be restored to pre-disturbance conditions in one growing season((.)); and

(m) Conservation or preservation of soil, water, vegetation, fish, shellfish, or other wildlife that does not change the structure or functions of the existing critical area.

(4) Category IV wetlands less than 4,000 square feet that meet the following criteria as demonstrated through a critical areas study under SCC 30.62A.140 may be filled provided their impacts are fully mitigated under SCC 30.62A.340:

(a) the wetland is not associated with fish and wildlife conservation areas or their buffers;

(b) the wetland is not associated with shorelines of statewide significance or their buffers;

(c) the wetland is not part of a wetland mosaic consisting of multiple small wetlands;

(d) the wetland does not have a habitat function score of 6 or more points; and

(e) the wetland is not a primary association area for critical species, located in a state natural habitat, or mapped as a priority habitat and species (PHS) area by the Washington Department of Fish and Wildlife.

(5) Category IV wetlands less than 1,000 square feet that meet the criteria in SCC 30.62A.510(4)(a) through (e) as demonstrated through a critical areas study under SCC 30.62A.140 are exempt from the buffer requirements contained in this chapter and may be filled provided their impacts are fully mitigated per SCC 30.62A.340.

Section 30. Snohomish County Code Section 30.62A.520, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.520 Single family residential development exceptions in buffers.

((New)) On lots existing prior to October 1, 2007, new single family residential development, expansions of existing single family residences, and ordinary residential improvements ((on lots existing prior to October 1, 2007)) are allowed in buffers only as follows:

(1) The development cannot feasibly comply with the ((standard)) buffer width requirements contained in PART 300 of this chapter;

(2) The development shall not disturb more than 4,000 square feet of the buffer;

(3) There is not 4,000 square feet of area available for the development outside of the standard buffer;

(4) To the extent feasible, ((total effective new impervious areas shall be limited to 10 percent within 300 feet of all waters containing salmonids and bogs)) the development shall comply with the provisions of new effective impervious surface restrictions in SCC 30.62A.320(1)(d);

(5) Expansion of an existing single family residence or accessory structure may be allowed within a buffer provided the footprint of the expansion does not exceed 50 percent of the existing structure or 2,000 square feet, whichever is less, and the expansion is set back from the critical area a distance which is greater than or equal to the setback of the original structure;

(6) For new single family development, there must be no alternate location for the development outside of the buffer;

(7) Development in the buffer shall be located to avoid impacts to critical species and habitats;

(8) The buffer shall not be reduced to less than one half of the standard buffer as provided at SCC 30.62A.320(1)(a) or 25 feet, whichever is greater, provided that access road crossing may encroach further into the buffer when there are no feasible alternatives;

(9) To the maximum extent feasible, the development shall be designed to avoid the removal of existing native vegetation with an emphasis on preservation of conifers greater than or equal to 24 inches diameter at breast height (dbh), and hardwoods greater than or equal to 20 inches dbh;

(10) Utility service lines servicing a single family residence may be allowed in areas of the buffer containing native vegetation provided that the removal of any vegetation within the buffer shall be the minimum necessary to install the lines;

(11) A permanent fence or other equivalent visual and physical barrier shall be installed along the edge of the reduced buffer, provided that the barrier may be installed at the edge of the naturally or restored vegetated part of the buffer;

(12) ((~~Mitigation~~)) A mitigation plan pursuant to SCC 30.62A.150 shall be required for any encroachment into the buffer. Mitigation shall include, where beneficial, enhancement of existing buffers on the site based on the following criteria:

(a) The enhanced buffer should be located between the residential structures and improvements and the aquatic critical area; and

(b) The ratio of the area of buffer enhanced to the area of the buffer encroached upon should be 2 to1.

Section 31. Snohomish County Code Section 30.62A.540, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62A.540 Reasonable use.

(1) A project permit applicant who is unable to comply with the specific standards of this chapter without forfeiting all economically viable use of the property may seek approval of a “reasonable use” allowance under this section. The application must be made on a form provided by the department and accompany a project permit application.

(2) To qualify as a reasonable use, the ((~~director~~)) department shall find that the proposal meets the following criteria:

(a) Application of this chapter will deny all economically viable use of the subject property. In making this determination, the ((~~director~~)) department shall also determine that:

(i) the subject property is an existing legal lot and the inability to derive reasonable use of the subject property is not the result of actions by the applicant in segregating, dividing, or creating a condition on the site after April 1, 1995; and

(ii) the inability to derive all reasonable use of the subject property is not the result of prior actions taken in violation of this title or any other local, state, or federal law or regulation; and

(b) The proposed development activity meets all other requirements of this title, does not otherwise constitute a nuisance or pose a threat to public health, safety, and welfare on or off the site.

(3) If the ((~~director~~)) department determines that a project permit application meets the requirements of SCC 30.62A.540(2), the project permit application may be approved where the ((~~director~~)) department finds:

(a) The applicant has complied with Part 100 of this chapter;

(b) After review of the project under this chapter, there is no other permitted use of the property with less impact on wetlands, fish and wildlife habitat conservation areas, or buffers;

(c) The proposed alteration of a wetland, fish and wildlife habitat conservation area, or buffer is the minimum necessary to allow for reasonable use of the property. Activities shall be located as far away as possible from wetlands, fish and wildlife habitat conservation areas, and buffers and low impact development techniques shall be used to the maximum extent possible. In all cases, disturbance of a wetland, stream, marine water, or lake may only occur if no reasonable use can be achieved by disturbance of a buffer associated with that feature;

(d) The proposed activity is located to minimize impacts to critical species;

(e) If a reasonable use of a parcel cannot exist without modification of the required front, side, or rear setbacks or other bulk standards, the department may consider modifying those standards only to the extent necessary to provide for a reasonable use, while providing as much protection as is possible under the circumstances to critical areas, while maintaining the public health, safety, and welfare. This section shall not relieve an applicant from the obligation of complying with applicable variance procedures set forth in chapters 30.43B and 30.43E SCC or other applicable modification procedures adopted under this title; ((~~and~~))

(f) ((~~To the greatest extent feasible, the~~)) The project ((~~includes compensation and~~)) applicant shall provide mitigation for unavoidable impacts to the functions and values of

critical areas regulated under this chapter in accordance with the requirements of SCC 30.62A.150((.)); and

(g) The maximum disturbance area impacting a wetland, fish and wildlife habitat conservation area, or buffer may be no greater than 4,000 square feet. The disturbance area includes the primary structure and any appurtenant development connected to the use and enjoyment of the primary structure, including garages, decks, driveways, parking, on-site septic systems, and lawn or other nonnative landscaping.

Section 32. Snohomish County Code Section 30.62A.550, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is repealed:

((30.62A.550 Mitigation banking and in lieu fee program.

(1) The director may approve the establishment and use of a wetland, fish and wildlife habitat conservation area or buffer mitigation bank to provide mitigation required by this chapter. The director's approval may allow for deviations from the requirements of Parts 100 through 400 with respect to the treatment of wetlands, fish and wildlife habitat conservation areas or buffers.

(2) Criteria for approval of use of mitigation banks:

(a) The following must have been approved by the county and the federal, state and local agencies with jurisdiction:

(i) a memorandum of agreement (MOA) defining guidelines for establishing a wetland, fish and wildlife habitat conservation area or buffer mitigation banking program and an implementation manual establishing a mitigation bank at a specific site; and

(ii) the MOA and/or implementation manual shall include, but not necessarily be limited to, provisions for the following:

(A) specific criteria and standards for use of the mitigation bank;

(B) methods for tracking credits;

(C) an interagency oversight committee composed of representatives from each of the agencies with jurisdiction for the purpose of regulatory review and approval of banking activities;

(D) permanent management and maintenance to assure the long-term viability of the bank site;

(E) professional construction oversight to ensure successful construction of the mitigation bank site;

(F) quantitative and qualitative performance standards;

~~(G) systematic compliance and performance monitoring to determine the degree to which the site meets performance standards;~~

~~(H) a schedule and timeline for compliance and performance monitoring,~~

~~(I) contingency plans;~~

~~(J) methods to be used to determine the functions and values of replacement wetlands, fish and wildlife habitat conservation area or buffers based on a watershed analysis;~~

~~(K) provisions for assuring the funding of long-term maintenance of the bank and performance of mitigation and monitoring requirements;~~

~~(L) a description of wetland, fish and wildlife habitat conservation area or buffer mitigation ratios to be used and justification for these ratios based upon best available science. Mitigation ratios will be based upon consideration of factors including but not limited to the likelihood of success of the mitigation, the types and quality of wetland, fish and wildlife habitat conservation areas or buffers involved, research results, and monitoring results;~~

~~(M) the mitigation plan requirements contained in SCC 30.62A.150; and~~

~~(N) provisions for mitigation sequencing that requires at minimum that all proposals using a mitigation bank shall have made reasonable efforts to avoid and minimize impacts to wetlands, fish and wildlife habitat conservation areas and buffers.~~

~~(b) The use of the mitigation bank will result in equivalent treatment of the functions and values of the wetland, fish and wildlife habitat conservation area or buffer to offset the impacts to critical areas functions and values on the project site such that the total net impact will be no net loss of critical area functions and values in the watershed in which the impacts will occur. For the purposes of this section, "watershed" means an area identified as a state of Washington water resource inventory area (WRIA) under WAC 173-500-040.~~

~~(c) The creation and operation of the mitigation bank and development activity which utilizes the wetland, fish and wildlife habitat conservation area or buffer bank, shall not create unmitigated long term or permanent adverse impacts to the critical functions and values of the wetlands, fish and wildlife habitat conservation areas or buffers in the sub-drainage basin in which the impacts will occur. Critical functions and values listed at SCC 30.62A.220 are those that are important to the long-term ecological viability of the wetlands, fish and wildlife habitat conservation areas or buffers in the sub-drainage basin.~~

~~(3) The director shall make MOAs and mitigation banking documents available for public review and comment prior to approval.~~

~~(4) In-lieu fee mitigation.~~

~~(a) The director may approve the establishment and use of a wetland, fish and wildlife habitat conservation area or buffer mitigation in-lieu fee program to provide mitigation required by this chapter. The director's approval may allow for deviations from the requirements of Parts 100 through 400 of this chapter with respect to the treatment of wetlands, fish and wildlife habitat conservation areas or buffers.~~

~~(b) In-lieu fee mitigation shall be established in accordance with the guidance contained in "Guidance on In-lieu Fee Mitigation" (Washington State Department of Ecology, December 2012, or latest edition, Publication #12-06-012).~~))

Section 33. Snohomish County Code Section 30.62A.620, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.620 General Agricultural Standards.

Except as provided in SCC 30.62A.630, normal agricultural activities as defined in SCC 30.91A.090 or 30.91A.092, subject to this Part 600, are in compliance with this chapter when those activities are performed in accordance with subsection (1), (2) or (3) of this section and ensure no net loss of ecological functions and values of critical areas:

(1) The best management practices contained in the latest edition of the USDA Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG);

(2) Other recognized best management practices for such activity that protect the functions and values of critical areas, including those in the Voluntary Clean Water Guidance for Agriculture, Washington Department of Ecology Publication No. 20-10-008, revised August 2023, or as subsequently revised or amended, where the NRCS FOTG does not provide specific guidance or a best management practice; or

(3) A farm conservation plan that includes provisions addressing critical areas protection specific to the farm site recommended by the NRCS or the Snohomish ((~~conservation district~~)) Conservation District (SCD), approved by the county and signed by the landowner. Any confidential or proprietary information contained in a farm conservation plan may be redacted prior to public disclosure.

Section 34. Snohomish County Code Section 30.62A.630, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.630 Special Agricultural Conditions.

(1) Notwithstanding SCC 30.62A.620, agricultural activities as defined in SCC 30.91A.090 or 30.91A.092 subject to this Part 600 that meet one or more of the following special conditions shall comply with subsection (2) of this section:

(a) Agricultural activities that require a county permit or project approval except for a flood hazard permit required pursuant to chapter 30.43C SCC;

(b) In certain special flood hazard areas designated by the Federal Emergency Management Agency (FEMA) as specified in SCC 30.65.040, the construction of agricultural access or service roads greater than six inches average and twelve inches maximum height above grade;

(c) Agricultural activities that occur in a wetland, except where:

(i) The activity is exempt from wetland regulation under Section 404(f) of the federal Clean Water Act;

(ii) The activity is occurring in a non-riparian Category II or III wetland that is no greater than 5,000 square feet in size; or

(iii) The activity is occurring in a non-riparian Category IV wetland that is no greater than 10,000 square feet in size; and

(d) Agricultural activities that bring land into agricultural use by removal of native woody vegetation or alteration of surface or ground water flows, other than that which results from normal cultivation.

(2) The agricultural activities listed in subsection (1) of this section are in compliance with this chapter when those activities are performed as follows:

(a) The activity complies with Parts 000 through 500 of this chapter;

(b) The activity is done in compliance with a farm conservation plan, as described in SCC 30.62A.620(3); or

(c) The ((~~director~~)) department issues a written decision finding that the landowner's compliance with other state or federal regulations or permits provides sufficient protection on the site to satisfy related critical areas requirements of this chapter.

Section 35. Snohomish County Code Section 30.62A.640, adopted by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62A.640 Farm conservation plans and best management practices.

(1) Farm conservation plans and best management practices described in SCC 30.62A.620 are subject to the approval of the county.

(2) Farm conservation plans and best management practices shall:

(a) Specify when implementation will occur relative to project construction;

(b) Include provisions for monitoring and maintenance on a long term basis to determine whether the practices are successful((~~. The length of time for monitoring and maintenance should be sufficient to determine if performance standards have been achieved~~)); and

(c) Include provisions on a form approved by the department for the right to entry to the county for the purpose of inspection for the length of the monitoring and maintenance period. Prior to a site inspection the county shall provide reasonable notice to the property owner as to the purpose and need for entry.

(3) The county and/or the farm operator shall monitor and report farm plan implementation and compliance provided in the farm plan. The farm plan should include periodic inspections by the county for the first two years after permit issuance or self-assessment and certification by the operator, or by other appropriate means thereafter as determined by the county.

(4) Agricultural operations shall cease to be in compliance with this chapter when the department determines one of the following three conditions is met. In such an event, a new or revised farm conservation plan may be required or the noncompliance may be referred to the appropriate agency for enforcement:

(a) The operator fails to implement and maintain the farm plans and/or best management practices;

(b) It has been determined by the county that the farm conservation plan and/or best management practices fails to protect critical areas. If so a new or revised plan shall be required; or

(c) Substantial changes in the agricultural activities of the operation have occurred which render the current plan ineffective.

(5) The county shall only retain summary information of that portion of the plan needed for permit approval and monitoring described in SCC 30.62A.640(2) and (3), including the general location of the operation, the nature of the activity, required permits and specific best management practices. The summary information shall be supplied to the county by the operator and used to document the basis for the county's approval of the plan. Any confidential or proprietary information contained in a farm conservation plan may be redacted prior to public disclosure.

Section 36. Snohomish County Code Section 30.62A.710, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62A.710 Monitoring and adaptive management program.

The ((~~Executive shall develop and implement a~~)) executive's monitoring and adaptive management program ((~~to establish a baseline and provide performance measures~~)) monitors and assesses impacts to critical areas to determine whether the ((~~County~~)) county is achieving no net loss through its policies and programs affecting wetlands and fish and wildlife habitat conservation areas, in conformance with the Natural Environment Element of the ((~~General Policy Plan of the~~)) comprehensive plan. ((~~The program along with a~~)) Program updates shall be submitted for approval to the ((~~County Council within six months of the effective date of this ordinance~~))county council.

Section 37. Snohomish County Code Section 30.62A.720, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62A.720 Monitoring and adaptive management program - contents.

(1) Monitored critical areas shall include wetlands and fish and wildlife habitat conservation areas.

(2) The purpose of the monitoring and adaptive management program is to

(a) Identify and collect meaningful data concerning the effectiveness of the county's programs and policies concerning protection of wetlands and fish and wildlife habitat conservation areas; and

(b) Identify corrective actions in response to a clear indication that the county's programs are not sufficient to actually protect wetlands and fish and wildlife habitat conservation areas.

(3) The monitoring and adaptive management program shall be based on best available science, and shall incorporate the following:

(a) Benchmarks that ((~~describe~~)) compare the state of indicators related to the condition of existing functions and values of the monitored critical areas ((~~and that are tied to the protective measures being assessed~~)) to the established baseline;

(b) Data collection methods that ((~~provides~~)) provide accurate measurements of the indicators used to assess the conditions of functions and values of the monitored critical areas ((~~and that are tied to the protective measures being assessed~~)), including appropriate time periods for collection of data;

(c) Threshold levels for addressing management practices, regulations and other measures that are determined through data collection and monitoring to be negatively affecting functions and values of monitored critical areas((~~. Thresholds are to be set in light of the benchmarks for existing conditions and in accordance with scientifically based habitat minimums~~)); and

(d) Strategies for adaptive management or addressing change to provide for expeditious action in reaction to reaching a threshold level. The monitoring and adaptive management program may provide for different strategies for action, depending on the critical area being monitored, the cause of the negative impacts to functions and values, and other variables.

Section 38. Snohomish County Code Section 30.62B.015, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62B.015 Intent.

It is the intent of this chapter to provide the protection required by chapter 36.70A RCW for ((~~wetlands and for fish & wildlife habitat conservation areas~~)) geologically hazardous areas while

simultaneously protecting property rights. The county council nevertheless recognizes that implementation of some provisions of this chapter 30.62B SCC will inevitably entail some restriction of property rights. It is the intent of the county council that this chapter be always construed and interpreted so that property rights be restricted no further than strictly necessary for the critical area protection required under chapter 36.70A RCW.

Section 39. Snohomish County Code Section 30.62B.140, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62B.140 Geotechnical report requirements.

(1) A geotechnical report will be required for any development activity, action requiring a project permit or clearing proposed within:

(a) An erosion hazard area;

(b) A landslide hazard area;

(c) Two hundred feet of a mine hazard area; or

(d) Two hundred feet of any faults.

(2) The geotechnical report shall be prepared, stamped, and signed by ((~~a licensed~~)) an engineer or geologist licensed in the state of Washington and contain the following information relevant to the geologically hazardous area:

(a) The topography at contour intervals of five feet unless the underlying project permit requires a lesser interval;

(b) Significant geologic contacts, landslides, or downslope soil movement on and within 200 feet of the site;

(c) A channel migration zone study when required pursuant to SCC 30.62B.330(2);

(d) Impervious surfaces, wells, drain fields, drain field reserve areas, roads, easements, and utilities on the site;

(e) The location or evidence of any springs, seeps, or other surface expressions of groundwater;

(f) The location or evidence of any surface waters;

(g) Identification of all existing fill areas;

(h) The location and extent of all proposed development activity;

(i) A discussion of the geological condition of the site including:

(i) a description of the soils in accordance with the Natural Resource Conservation Service indicating the potential for erosion;

(ii) engineering properties of the soils, sediments, and rocks on the subject property and adjacent properties and their effect on the stability of the slope;

(iii) a description of the slope in percent gradient;

(iv) the location or evidence of seismic faults and soil conditions indicating the potential for liquefaction; and

(v) a hazard analysis and finding of risks associated with geologic hazards and the potential impacts to public safety, the hazard area and the subject property;

(j) The proposed method of drainage and locations of all existing and proposed surface and subsurface drainage facilities and patterns, and the locations and methods for erosion control;

(k) The extent and type of existing vegetative cover;

(l) A vegetation management and restoration plan prepared by persons experienced in vegetation management and restoration plans such as botanists, landscape architects and certified arborist, or other means for maintaining long-term stability of slopes;

(m) Analysis of erosion rates, slope recession rates and potential impacts to existing or proposed development from wave cutting, stream meandering, or other erosional forces to determine the recommended solution for bank or shoreline stabilization or flood protection in conformance with SCC 30.62B.320(2);

(n) Analysis of soil borings when the geology of an area is uncertain; and

(o) Any other information determined by the department to be necessary to determine compliance with this chapter including but not limited to the use of LIDAR, technical reports, studies or documents related to geologic hazards and models for estimating how far landslide materials will travel.

(3) The geotechnical report shall include a summary or abstract of the report for the property where the development activity is proposed. The abstract shall at a minimum include the type of hazard, extent of the hazard, hazard analysis and geologic conditions.

Section 40. Snohomish County Code Section 30.62B.330, last amended by Ordinance No. 19-022 on June 26, 2019, is amended to read:

30.62B.330 Erosion hazard areas - Channel migration zones.

(1) This section establishes specific standards and requirements for development activities, actions requiring a project permit or clearing in channel migration zones ((~~adjacent to the following rivers :~~)) .

Table 1 Potential Channel Migration Zone Locations

River Name	River Sections (mi)
North Fork Skykomish River	0.00 - 8.64
North Fork Stillaguamish River	0.00 - 35.18
Pilchuck Creek	0.00 - 6.96
Pilchuck River	0.00 - 36.17
Sauk River	All
Skykomish River	0.00- 29.15
Snohomish River & Sloughs	All
Snoqualmie River	0.00 - 5.41
South Fork Skykomish River	0.00 - 6.71
South Fork Stillaguamish River	0.00 - 43.07
Stillaguamish River & Sloughs	All
Sultan River	0.00 - 7.64
Wallace River	0.00 - 7.71

(a) The location and extent of a channel migration zone adjacent to the river sections identified in Table 1 shall be determined by a channel migration zone study required under SCC 30.62B.330(2), or other best available science.

(b) Where best available science identifies a channel migration zone adjacent to any river or river section not listed in Table 1, the protection standards in SCC 30.62B.330(3) shall apply.

(2) The department may require a channel migration zone study when a development activity or action requiring a project permit is proposed to occur in areas where evidence indicates channel migration is likely, in accordance with the following requirements:

(a) The study shall be conducted in accordance with Section 2 of the Forest Practices Board Manual ((~~(Title 222 WAC)~~)), Standard Methods for Identifying Bankfull Channel Features and Channel Migration Zones, Department of Natural Resources, November, 2004, or A Framework for Delineating Channel Migration Zones, Washington State Department of Ecology, November 2003 (Publication No. 03-06-027), except that areas behind natural or manmade features which limit channel migration that allow fish passage shall not be included in the channel migration zone;

(b) The study shall be performed under the direction of a qualified professional with experience in fluvial geomorphology or river hydraulics;

(c) The study shall contain the following:

(i) a determination of the presence of channel migration, and if present, the delineation of the channel migration zone;

(ii) an analysis of the impacts of potential channel migration on the proposed development activity; and

(iii) an analysis of the impacts of the proposed development activity on the channel migration zone.

(3) Channel Migration Zone (CMZ) standards and requirements.

All development activities, actions requiring a project permit and clearing are prohibited in the channel migration zone, except as provided below:

(a) removal of hazardous trees;

(b) new utility facilities based on the following requirements;

(i) pipelines shall be bored 10 feet beneath the thalweg scour depth of the river within the CMZ;

(ii) surface utilities such as power transmission lines shall be located away from the current channel if feasible; and if not feasible, foundations within the CMZ shall be designed as in-channel structures if determined by the department to be necessary;

(c) new public bridges and transportation structures when no other feasible alternative exists or the alternative would result in unreasonable and disproportionate costs;

(d) boat ramps;

(e) normal maintenance or repair of existing flood control and bank stabilization structures, buildings, roads, bridges and utilities;

(f) shoreline and bank stabilization and flood protection measures pursuant to the general requirements contained SCC 30.62B.320(2);

(g) habitat restoration and enhancement projects;

(h) mitigation banks; and

(i) public parks intended to create or preserve open space, provide public access to shorelines of statewide significance, or provide passive recreation opportunities. For the purposes of this subsection, passive recreation may include, but is not limited to, memorials, interpretive facilities, seasonal primitive camping, and soft surface trails, as well as support infrastructure for those amenities, such as parking. All development subject to this subsection shall meet the following specific performance standards and be designed, to the greatest extent possible, to not inhibit channel migration:

(i) total impervious surface area shall not exceed the lesser of 10 percent of the site area or two acres;

(ii) the maximum footprint of any individual building shall not exceed 600 square feet, and the aggregate square footage of buildings on the site shall not exceed 2,400 square feet; and

(iii) improvements shall be removed or relocated if at any time the ordinary high water mark of the river channel is within two years of the average migration rate distance of such improvements.

Section 41. Snohomish County Code Section 30.62C.015, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62C.015 Intent.

It is the intent of this chapter to provide the protection required by chapter 36.70A RCW for ((~~wetlands and for fish & wildlife habitat conservation areas~~)) critical aquifer recharge areas while simultaneously protecting property rights. The county council nevertheless recognizes that implementation of some provisions of this chapter 30.62C SCC will inevitably entail some restriction of property rights. It is the intent of the county council that this chapter be always construed and interpreted so that property rights be restricted no further than strictly necessary for the critical area protection required under chapter 36.70A RCW.

Section 42. Snohomish County Code Section 30.62C.130, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62C.130 Submittal requirements.

(1) For any development activity or action requiring a project permit, the applicant shall submit a site development plan drawn to a standard engineering scale which includes:

(a) Boundary lines and dimensions of the subject property;

(b) Boundary lines and dimensions of the site;

(c) Topography at contour intervals of five feet unless the underlying project permit requires a lesser interval;

(d) Location, size, and type of any existing structures, cleared areas or other existing improvements;

(e) Location, size, and type of all proposed structures and development activities requiring project permits and clearing on the site;

(f) Location, size, and type of all critical aquifer recharge areas on the subject property;

(g) Location of all other critical areas regulated pursuant to chapters 30.62A, 30.62B and 30.65 SCC on and within ((~~200~~)) 300 feet of the site; and

(h) Location of structure setbacks as required in ((~~chapter~~)) chapters 30.62A SCC, 30.62B SCC and ((~~chapter~~)) 30.23 SCC; and

(2) A hydrogeologic report as required pursuant to SCC 30.62C.140.

Section 43. Snohomish County Code Section 30.62C.140, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62C.140 Hydrogeologic report and mitigation plan.

(1) A hydrogeologic report is required ((~~for~~)) when any of the following conditions apply:

(a) any activity or use requiring a project permit regulated in ((~~Part 300~~)) SCC 30.62C.330 when proposed within a critical aquifer recharge area with low groundwater sensitivity;

(b) any activity or use requiring a project permit regulated in SCC 30.62C.340 when proposed within a critical aquifer recharge area;

(c) any activity or use requiring a project permit regulated in SCC 30.62C.345 and proposed within a sole source aquifer, Group A wellhead protection area, or critical aquifer recharge area with high or medium groundwater sensitivity;

(d) any activity or use requiring a project permit regulated in SCC 30.62C.345 that does not meet the nonendangerment standard in WAC 173-218-080, 173-218-090, or 173-218-100 when proposed within a critical aquifer recharge area; or

(e) any activity or use requiring a project permit proposed within a critical aquifer recharge area but not otherwise listed in Part 300 when the department determines there is potential for impairment to water quality or quantity within the critical aquifer recharge area.

(2) The hydrogeologic report shall be prepared by a qualified professional who is a geologist, hydrogeologist, engineering geologist, or engineer, who is licensed by the State of Washington and who has experience preparing hydrogeologic assessments.

(3) The hydrogeologic report shall contain the following information relevant to the critical aquifer recharge area:

(a) The surface location of all critical aquifer recharge areas located on site or immediately adjacent to the site, and the permeability of the unsaturated zone;

(b) Groundwater depth, flow direction, and gradient based on available information;

(c) Currently available data on wells and springs within one fourth mile of the site;

(d) Currently available information on the location of surface waters within one fourth mile of the site;

(e) Historic water quality data for the area to be affected by the proposed activity or use compiled for at least the previous five-year period;

(f) Discussion of the effects of the proposed project on the groundwater quality and quantity, including:

(i) Predictive evaluation of groundwater withdrawal effects on nearby wells and surface water features;

(ii) Predictive evaluation of contaminant transport based on potential releases to groundwater;

(iii) Recharge potential of the site including permeability and transmissivity; and

(iv) If water use is proposed for the development activity, a description of the groundwater source of water to the site or a letter from an approved water purveyor stating the ability to provide water to the site;

(g) Best management practices relevant to the proposed activity or use;

(h) Provisions to monitor the groundwater quality and quantity;

(i) A spill plan that identifies equipment and structures that could fail, resulting in an impact to the critical aquifer recharge area. Spill plans shall include provisions for regular inspection, repair, and replacement of structures and equipment with the potential to fail, and a remediation plan should clean-up become necessary;

(j) Salt-water intrusion addendums shall be required for withdrawals of groundwater or reductions in available recharge within one fourth mile of any part of Puget Sound, or a greater distance inland where there is evidence that chloride (bicarbonate + carbonate) ratio exceeds 1.5 equivalent parts per million at any time of the year. The addendum shall include an assessment of the likelihood and extent of seawater intrusion into a critical aquifer and a description of probable impact on wells on adjacent or nearby parcels;

(k) An assessment of how the development activity meets the protection standards established in SCC 30.62C.320;

(l) If the hydrogeologic report identifies impacts to critical aquifer recharge areas, the project applicant will be required to:

(i) Identify and provide an analysis of alternatives by which such impacts could be avoided or prevented; and

(ii) ((~~Provide~~)) When mitigation is allowed, provide a detailed mitigation plan for any unavoidable impacts. The mitigation plan should include preventative measures, monitoring, process control and remediation, and a contingency plan, as appropriate;

(m) Recommendations for implementation and operation of activities, including size limitations, monitoring, reporting and best management practices (BMP);

(n) An evaluation of potential nitrate and nitrite impacts on the aquifer, including cumulative impacts of adjacent or surrounding developments and activities, and provide recommendations for monitoring and BMP of nitrate and nitrite generating activities; and

(o) Any other information necessary to determine compliance with this chapter.

Section 44. Snohomish County Code Section 30.62C.150, last amended by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62C.150 Notification to purveyors of Group A public water supply systems.

The department shall provide notification and an agency comment period as required by chapter 30.70 SCC of any proposed development activity or actions requiring a project permit subject to Part 300 to purveyors of Group A public water supply established pursuant to ((~~WAC~~)) chapter 246-290 WAC, except that notification is not required for stormwater UIC wells that automatically meet the nonendangerment standard in WAC 173-218-100.

Section 45. Snohomish County Code Section 30.62C.220, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62C.220 Classification of critical aquifer recharge areas.

The county has established the following three classifications of critical aquifer recharge areas (CARAs):

(1) Sole source aquifers designated by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act of 1974 (Public Law 93-523);

(2) Areas within the 10-year travel zone of Group A wellhead protection areas, determined in accordance with delineation methodologies specified by the Washington Department of Health under authority of chapter 246-290 WAC. Group A wellhead protection areas include the additional buffer zone or zone of contribution identified by hydrogeologic analysis conducted by qualified licensed engineers and documented in a watershed protection plan or water system comprehensive plan, provided that such plans and wellhead protection area boundary data are provided to the county; and

(3) Areas of high, medium and low sensitivity to groundwater contamination, based on depth to groundwater and in accordance with The Ground-Water System and Ground-Water Quality in Western Snohomish County, Washington (United States Geological Survey, Water Resources Investigations, Report #96-4312, 1997).

Section 46. Snohomish County Code Section 30.62C.320, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62C.320 General requirements.

(1) The project proponent shall make all reasonable efforts to avoid and minimize impacts to critical aquifer recharge areas pursuant to the requirements of this section, in the following sequential order of preference:

(a) ((~~Avoiding~~)) avoiding impacts altogether by not taking a certain action or parts of an action; or ((~~when avoidance is not possible,~~))

(b) avoiding or minimizing impacts by limiting the degree or magnitude of the action and its implementation, using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts; and

(c) when avoidance is not possible, mitigation for the impacts to the critical aquifer recharge area;

(2) Any activity or use listed in Part 300 in a Group A wellhead protection area with impacts to the critical aquifer recharge area that cannot be avoided will not be approved. Mitigation is not an option because impacts to drinking water must not occur.

((~~(2)~~)) (3) Any activity or use specifically listed in Part 300 shall comply with the best management practices and mitigation plan identified in the hydrogeologic report when required, and any additional requirements contained in SCC 30.62C.340 and SCC 30.62C.345.

((~~(3)~~)) (4) All development activities shall comply with the groundwater quality standards contained in ((~~WAC Chapter~~)) chapter 173-200 WAC and ((~~RCW Chapter~~)) chapter 90.48 RCW.

((~~(4)~~)) (5) Where the department determines that an activity or use not specifically listed in Part 300 has the potential to harm water quality or quantity within critical aquifer recharge areas, the applicant shall comply with Part 100 and apply best management practices and all known and available reasonable technology (AKART) appropriate to protect critical aquifer recharge areas.

Section 47. Snohomish County Code Section 30.62C.330, adopted by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.62C.330 ((~~Prohibited uses.~~)) Uses prohibited within certain critical aquifer recharge areas.

The following activities and uses are prohibited in sole source aquifers, Group A wellhead protection areas, and critical aquifer recharge areas with high or medium sensitivity:

(1) Landfills, ((~~including~~)) outdoor storage facilities, or outdoor recycling centers for: hazardous or dangerous waste, electronic waste, contaminated soil or dredged materials, municipal solid waste, special waste, woodwaste, ((~~and~~)) or inert and demolition waste ((~~landfills~~));

(2) Underground injection control (UIC) wells prohibited in Washington State under WAC 173-218-040;

(3) Class II UIC wells defined in WAC 173-218-040(2);

((~~(3)~~)) (4) Mining of metals and hard rock;

((~~(4)~~)) (5) Wood treatment facilities occurring over permeable surfaces (natural or manmade); and

((~~(5)~~)) (6) Facilities that store, process, or dispose of radioactive substances.

Section 48. Snohomish County Code Section 30.62C.340, last amended by Amended Ordinance No. 15-034 on September 2, 2015, is amended to read:

30.62C.340 Uses and development activities subject to special conditions.

The following activities and uses identified in Table 30.62C.340 when proposed within critical aquifer recharge areas, or identified in SCC 30.62C.330 when proposed within critical aquifer recharge areas with low sensitivity shall be conditioned as necessary to protect critical aquifer recharge areas in accordance with the applicable state and federal regulations and recommendations from an approved hydrogeologic report required pursuant to

SCC 30.62C.140, and may also include recommendations from affected Group A public water systems.

((~~Activity~~ ~~Statute - Regulation - Guidance~~

~~Above Ground Storage Tanks~~	~~WAC 173-303-640~~
~~Animal Feedlots~~	~~Chapter 173-216 WAC, Chapter 173-220 WAC~~
~~Animal feeding operations/concentrated animal feeding operations~~	~~Final Rule 40 CFR Parts 9, 122, 123, and 412~~
~~Automobile Washing facilities~~	~~Chapter 173-216 WAC, Best Management Practices for Vehicle and Equipment Discharges (Washington Department of Ecology WQ-R-95-56)~~
~~Below Ground Storage Tanks~~	~~Chapter 173-360 WAC, Chapter 90.76 RCW, RCW 43.131.394~~
~~Chemical Treatment Storage and Disposal Facilities~~	~~Chapter 173-303 WAC~~
~~Dangerous waste~~	~~Chapter 70.105 RCW, chapter 173-303 WAC, county board of health code and SCC 7.53.070~~
~~Injection Wells~~	~~Federal 40 CFR Parts 144 and 146, Chapter 173-218 WAC~~
~~Junk Yards and Salvage Yards~~	~~Chapter 173-304 WAC, Best Management Practices to Prevent Stormwater Pollution at Vehicles Recycler Facilities (Washington State Department of Ecology 94-146)~~
~~On-Site Sewage Systems (Large Scale > 3,500 gal/day)~~	~~Chapter 173-240 WAC, Chapter 246-272 WAC, Chapter 246-272B WAC, Local Health Ordinances~~
~~A single or multiple small on-site sewage systems with a combined design volume of greater than 3,500 gal/day~~	~~Chapter 246-272 WAC, Chapter 246-272A WAC, Local Health Ordinances~~
~~Pesticide and Fertilizer Storage and Use~~	~~Chapter 15.54 RCW, Chapter 17.21 RCW~~
~~Reclaimed water for groundwater recharge~~	~~Chapter 90.46 RCW~~
~~Sawmills~~	~~Chapter 173-303 WAC, Chapter 173-304 WAC, Best Management Practices to Prevent Stormwater Pollution at Log Yards (Washington State Department of Ecology, 95-53)~~
~~Solid Waste Handling and Recycling Facilities~~	~~Chapter 173-304 WAC~~
~~Surface Mining~~	~~Chapter 332-18 WAC~~

~~Wastewater Application to Land Surface~~	~~Chapter 173-216 WAC, Chapter 173-200 WAC, Washington State Department of Ecology Land Application Guidelines, Best Management Practices for Irrigated Agriculture~~))

Table 30.62C.340

Activity/Uses	**Statute - Regulation - Guidance**
Animal feedlots	Chapter 173-216 WAC; Chapter 173-220 WAC
Animal feeding operations / concentrated animal feeding operations	40 CFR Parts 122, 123, and 412
Automobile washing facilities	Chapter 173-216 WAC; Best Management Practices for Vehicle and Equipment Discharges (Washington Department of Ecology Publication No. WQ-R-95-56, or latest edition)
Chemical treatment, storage and disposal facilities	Chapter 173-303 WAC
Dangerous waste	Chapter 70.105 RCW; Chapter 173-303 WAC; Snohomish County Board of Health Ordinances
Junk yards and salvage yards	Chapter 173-304 WAC; Chapter 173-350 WAC; Chapter 173-351 WAC; Best Management Practices for Vehicle and Metal Recyclers (Washington State Department of Ecology Publication No. 94-146, or latest edition)
Pesticide, herbicide and fertilizer storage and use	Chapter 15.54 RCW; Chapter 17.21 RCW; Chapters 16-200 through 16-232 WAC
Reclaimed water for groundwater recharge	Chapter 90.46 RCW; Chapter 173-218 WAC
Petroleum processing and recycling facilities	40 CFR Part 443 (paving and roofing materials); 40 CFR Part 419 (effluent guidelines); Chapter 70A.224 RCW (used oil recycling); Chapter 90.56 RCW (spill prevention)
Sawmills	Chapter 173-303 WAC; Chapter 173-304 WAC; Industrial Stormwater General Permit Implementation Manual for Log Yards (Washington Department of Ecology Publication No. 04-10-031, or latest edition)
Solid waste handling and recycling facilities	Chapter 173-304 WAC; Chapter 173-350 WAC; Chapter 173-351 WAC
Storage tanks, above ground	WAC 173-303-640

Storage tanks, below ground	Chapter 173-360A WAC; Chapter 90.76 RCW; RCW 43.131.394
Surface mining	Chapter 332-18 WAC
Wastewater application to land surface	Chapter 173-216 WAC; Chapter 173-200 WAC

Section 49. A new Snohomish County Code Section 30.62C.345 is added to read:

SCC 30.62C.345 UIC wells subject to special conditions.

(1) The underground injection control (UIC) wells identified in Table 30.62C.345 shall be conditioned as necessary to protect critical aquifer recharge areas in accordance with the applicable state and federal regulations and recommendations from an approved hydrogeologic report required pursuant to SCC 30.62C.140, and may also include recommendations from affected Group A public water systems.

Table 30.62C.345

UIC Well – Class and Type	Statute - Regulation - Guidance
Class IV UIC wells reinjecting treated groundwater into the same formation from where it was drawn as part of a removal or remedial action	WAC 173-218-040(4). Requires approval by EPA in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act or the Resource Conservation and Recovery Act, 40 C.F.R. 144.13(c).
Class V UIC wells used for geologic sequestration of carbon dioxide	WAC 173-218-115
Class V UIC wells used for on-site sewage systems (OSS): large scale (> 3,500 gal/day); or multiple small scale OSS with combined design volume exceeding 3,500 gal/day	Chapter 173-240 WAC; Chapter 246-272 WAC; Chapter 246-272A WAC; Chapter 246-272B WAC; Chapter 173-218 WAC; Snohomish County Board of Health Ordinances
All other Class V UIC wells not identified in this table or SCC 30.62C.345, or prohibited under SCC 30.62C.330(2)	40 CFR Parts 144 and 146; Chapter 173-218 WAC

(2) Class V UIC wells used for stormwater management that meet the nonendangerment standard in WAC 173-218-080 or WAC 173-218-090 are allowed in critical aquifer recharge areas subject to the following requirements:

(a) the UIC well complies with the stormwater regulations identified in SCC 30.63A.100; and

(b) the UIC well shall be conditioned as necessary to protect critical aquifer recharge areas in accordance with applicable regulations and recommendations from an approved hydrogeologic report, if required pursuant to SCC 30.62C.140, and may also include recommendations from any affected Group A public water systems.

(3) Class V UIC wells used for stormwater management that automatically meet the nonendangerment standard in WAC 173-218-100 and comply with the stormwater regulations identified in SCC 30.63A.100 are allowed in critical aquifer recharge areas.

Section 50. Snohomish County Code Section 30.86.300, last amended by Amended Ordinance No. 24-056 on August 14, 2024, is amended to read:

30.86.300 Special flood hazard areas permit fees.

Table 30.86.300 Special Flood Hazard Area Permit Fees

FLOOD HAZARD AREA ((~~PERMIT~~)) BASE REVIEW FEE	((~~$1,050~~)) $800
FLOOD HAZARD AREA PERMIT	$250
FLOOD HAZARD AREA VARIANCE	See Table 30.86.230
PRE-APPLICATION CONFERENCE FEE	$480
FLOOD HAZARD AREA DETERMINATION	$300
FLOOD HAZARD PERMIT & FLOOD HAZARD VARIANCE APPLICATION EXTENSION(1)	$500
DENSITY FRINGE EXCEPTION APPLICATION	$500
HABITAT ASSESSMENT AND MANAGEMENT PLAN:	
Single-Family Residential, Duplex, Mobile Home and Appurtenances	$250
All other application types	$720

(1) This fee applies to Flood Hazard Permit and Flood Hazard Variance application extensions pursuant to SCC Table 30.70.140(1).

Section 51. Snohomish County Code Section 30.91A.250, last amended by Amended Ordinance No. 21-025 on June 16, 2021, is amended to read:

30.91A.250 Appurtenance.

"Appurtenance" means development necessarily connected to the use and enjoyment of a single-family residence and located landward of the perimeter of a wetland and landward of the ordinary high water mark. Normal appurtenances include a garage; deck; driveway; utilities solely servicing the subject single-family residence; fences; and grading which does not exceed 250 cubic yards (except to construct a conventional drainfield).

This definition applies only to "Shoreline" regulations in chapters 30.44 and 30.67 SCC, Special flood hazard areas permit fees in SCC 30.86.300, and "Drainage" regulations in chapter 30.63A SCC.

Section 52. Snohomish County Code Section 30.91C.340, last amended by Amended Ordinance No. 17-039 on July 12, 2017, is amended to read:

30.91C.340 Critical area.

"Critical area" means the following areas:

(1) Wetlands;

(2) Areas with a critical recharging effect on aquifers used for potable water, including:

(a) Sole source aquifers,

(b) Group A well head protection areas, and

(c) Critical aquifer recharge areas;

(3) Fish and wildlife habitat conservation areas, including:

(a) Streams, including those planted with game fish by a governmental or tribal entity,

(b) Lakes, including those planted with game fish by a governmental or tribal entity,

(c) Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat, including those planted with game fish by a governmental or tribal entity,

(d) Marine waters,

(e) Primary association areas for critical species, and

(f) State natural area preserves, natural resource conservation areas, ((~~and~~)) state wildlife areas, and habitats of local importance;

(4) Frequently flooded areas, including special flood hazard areas in chapter 30.65 SCC; and

(5) Geologically hazardous areas, including:

(a) Erosion hazard areas,

(b) Landslide hazard areas,

(c) Seismic hazard areas,

(d) Mine hazard areas,

(e) Volcanic hazard areas, and

(f) Tsunami hazard areas.

Section 53. Snohomish County Code Section 30.91C.370, last amended by Amended Ordinance No. 06-061 on August 1, 2007, is amended to read:

30.91C.370 Critical species.

"Critical species" means all species listed by the state or federal government as endangered ((~~or~~)), threatened, or sensitive, and species of local importance((~~, and also includes: Larch Mountain salamander, Common loon, Peregrine falcon, Olympic mudminnow, Pygmy whitefish, and Gray whale~~)).

Section 54. A new Snohomish County Code Section 30.91Q.020 is added to read:

30.91Q.020 Qualified Professional.

“Qualified Professional” means a person who possesses a degree or equivalent from an accredited institute of higher learning in biology, ecology, environmental science, resource management, or a related field and has professional certifications and credentials necessary to prepare plans.

This definition applies only to chapters 30.62A and 30.62B SCC.

Section 55. A new Snohomish County Code Section 30.91S.528 is added to read:

30.91S.528 Special waste.

"Special waste" is defined in WAC 173-303-040 and means any state-only dangerous waste that is solid only (nonliquid, nonaqueous, nongaseous), that is: corrosive waste (WAC 173-303-090 (6)(b)(ii)), toxic waste that has Category D toxicity (WAC 173-303-100(5)), PCB waste (WAC 173-303-9904 under State Sources), or persistent waste that is not extremely hazardous waste (EHW)

(WAC 173-303-100(6)). Any solid waste that is regulated by the United States EPA as hazardous waste cannot be a special waste.

Section 56. A new Snohomish County Code Section 30.91U.065 is added to read:

30.91U.065 Underground injection control well (UIC well).

"Underground injection control well" or "UIC well" means a well that is used to discharge fluids into the subsurface. A UIC well is one of the following: (1) A bored, drilled, or driven shaft, or dug hole whose depth is greater than the largest surface dimension; (2) an improved sinkhole; or (3) a subsurface fluid distribution system. UIC wells are as classified in WAC 173-218-040. WAC 173-218-050 identifies what is not considered a UIC well and regulated under chapter 173-218 WAC.

Section 57. A new Snohomish County Code Section 30.91W.050 is added to read:

30.91W.050 Wellhead protection area (WHPA).

"Wellhead protection area (WHPA)" means the protective areas associated with public drinking water sources established by water systems and approved or assigned by the state department of health. A WHPA is the surface and subsurface area surrounding a water well or wellfield supplying a public water system, through which contaminants are reasonably likely to move and reach such water well or wellfield. A WHPA may be divided into zones representing the travel time needed for a drop of water to move from the outer zone boundary into the well or wellfield. A WHPA may also include a buffer zone.

Section 58. Severability. If any section, sentence, clause, or phrase of this ordinance is held to be invalid or unconstitutional by the Growth Management Hearings Board, or a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause, or phrase of this ordinance. Provided, however, that if any section, sentence, clause, or phrase of this ordinance is held to be invalid by the Growth Management Hearings Board or court of competent jurisdiction, then the section, sentence, clause, or phrase in effect prior to the effective date of this ordinance shall be in full force and effect for that individual section, sentence, clause, or phrase as if this ordinance had never been adopted.

Section 59. Effective date, implementation. This ordinance shall take effect _____, 2024. The Department of Planning and Development Services is authorized to take such actions as may be necessary to implement this ordinance on its effective date.

PASSED this ____ day of _____, 2024.

SNOHOMISH COUNTY COUNCIL
Snohomish County, Washington

_____
Council Chair

ATTEST:

_____
Asst. Clerk of the Council

( ) APPROVED
( ) EMERGENCY
( ) VETOED

DATE: _____, 2024

_____
Snohomish County Executive

ATTEST: _____

Approved as to form only:

_____ 10/8/2024
Deputy Prosecuting Attorney

Planning and Community Development

Ryan Countryman

Council Initiated:
☐Yes
☒No

SNOHOMISH COUNTY COUNCIL

EXHIBIT # 3.2.001

FILE ORD 24-097

ECAF: 2024-2646
Ordinance: 24-097

Type:
☐Contract
☐Board Appt.
☒**Code Amendment**
☐Budget Action
☐Other

Requested Handling:
☒**Normal**
☐Expedite
☐Urgent

Fund Source:
☐General Fund
☐Other
☒**N/A**

Executive Rec:
☒**Approve**
☐Do Not Approve
☐N/A

Approved as to Form:
☒**Yes**
☐No
☐N/A

Subject: Code amendment – Critical Area Regulations.

Scope: Ordinance 24-097 (Ord 24-097) would revise several chapters in Title 30 SCC regarding Critical Area Regulations (CAR).

Amendment Sheet 1 would retain several mitigation options and incentives that Ord 24-097 will otherwise remove.

Duration: N/A

Fiscal Impact: ☐ Current Year ☐ Multi-Year ☒ **N/A**

Authority Granted: None

Background: Staff from Planning and Development Services (PDS) provided a briefing to the County Council regarding Ord 24-097 on December 3, 2024. Council and PDS staff discussed a variety of issues and competing priorities related to the ordinance. Council continued the discussion to December 17 to prepare possible amendments for further discussion.

The Growth Management Act (GMA) requires that counties "shall include the best available science [BAS] in developing policies and development regulations to protect the functions and values of critical areas" RCW 36.70A.172. Including BAS does not mean solely relying on it. The CAR updates proposed by PDS are based on the department's interpretation of BAS. As with any complex intersection of science and policy there is scope for legislative bodies to debate and determine appropriate regulation. In developing regulations, counties must consider other GMA goals and requirements too. Criteria for using BAS in developing regulations are in WAC 365-195-915 and -920. These criteria include guidance for use of information that departs from BAS recommendations, including ways to apply incomplete scientific information to development permitting processes.

Amendment Sheet 1 is a discussion-draft prepared at the request of Councilmembers Mead and Nehring. It responds to concerns about impacts of Ord 24-097 on housing affordability and maintenance of development capacity within Urban Growth Areas necessary to accommodate adopted growth targets. This draft only addresses code portions of the ordinance. It proposes changes to the ordinance that would retain existing incentives to:

1. Provide protecting fencing;
2. Place critical areas and buffers in separate tracts;
3. Combine fencing and tracts to increase likelihood of protection;
4. Use buffer averaging; and
5. Fill and mitigate small wetlands when following Best Management Practices (BMPs).

Amendment Sheet 1 does not yet include findings to show compliance with the WACs. Council staff may add such findings and may make technical adjustments to the code related language in a final amendment sheet prior to a public hearing.

Request: Move Ordinance 24-097 to General Legislative Session on December 18, 2024, to set date and time for a hearing. Suggested: January 15, 2025, at 10:30 a.m.

SNOHOMISH COUNTY COUNCIL
EXHIBIT # 2.0003
FILE ORD 24-097

Snohomish County
Planning and Development Services

3000 Rockefeller Ave., M/S 604
Everett, WA 98201-4046
(425) 388-3311
www.snoco.org

Dave Somers
County Executive

MEMORANDUM

TO: Snohomish County Planning Commission

FROM: Terri Strandberg, Principal Planner
Sarah Titcomb, Principal Planner

SUBJECT: Critical Area Regulations Review and Update

DATE: April 9, 2024

INTRODUCTION

The purpose of this staff report is to provide information on a non-project proposal to review and update the Critical Area Regulations (CAR) within the Snohomish County Code (SCC). The County reviewed the existing CAR within chapters 30.62A, 30.62B, 30.62C, and 30.65 SCC and proposed amendments in line with the best available science (BAS) reviewed since the last major update of the CAR in 2015. The proposal also includes housekeeping changes for internal code consistency and implementation.

BACKGROUND

Snohomish County is mandated by the Growth Management Act (GMA) to review and update its CAR according to a schedule established in RCW 36.70A.130(5), with the next deadline scheduled for December 31, 2024. Under the GMA, a periodic review and update means the County is required to review and make needed amendments to development regulations to ensure internal consistency and compliance with the GMA. The review of critical area regulations under RCW 36.70A.172(1) also requires the inclusion of BAS and special consideration given to anadromous fisheries.

Snohomish County CARs are contained in chapters:

- 30.62A SCC - Wetlands and Fish and Wildlife Habitat Conservation Areas;
- 30.62B SCC - Geologically Hazardous Areas;
- 30.62C SCC - Critical Aquifer Recharge Areas; and
- 30.65 SCC - Special Flood Hazard Areas.

Planning and Development Services (PDS) staff worked with the Department of Conservation and Natural Resources (DCNR) and the public to collect relevant and accessible BAS since the last major CAR update in 2015 (Amended Ordinance No. 15-034). The result of this collection and analysis is an over 160-record annotated bibliography (Attachment A) that gives special consideration to synthesized science from State agencies. The review of existing CAR and BAS was extensive to ensure that proposed amendments complied with the GMA, protected critical areas, and protected public safety, health, and welfare. The

annotated bibliography works in conjunction with the County's 2006 BAS report to provide the rationale for proposed amendments.

PDS determined that major changes to CAR are not necessary to comply with the GMA in 2024, incorporate BAS, and implement existing policies. The proposed amendments do not represent an overhaul of CAR, instead, the amendments are focused on Chapters 30.62A SCC, 30.62B SCC, and 30.62C SCC to better align the existing codes with the GMA and scientific advances that have occurred since 2015. There are also proposed amendments to definitions, Chapter 30.43C SCC, and the fees within Chapter 30.86 SCC to ensure consistency amongst the CAR chapters and the GMA.

PROPOSED CODE AMENDMENTS AND FINDINGS

The full scope of amendments is included in the attachments to this staff report, and a summary of the proposed changes and rationale is provided in the sections below. Chapters 30.62A, 30.62B, and 30.62C SCC are attached as separate documents (Attachments B through D) that include the entire chapter with the proposed code revisions in strikeout and underline format. Each substantive change is also accompanied by a comment that includes the source of, and rationale for, the proposed amendment. Attachments E and F display minor proposed amendments within Chapters 30.43C and 30.86 SCC respectively, and Attachment G includes amendments to existing definitions and one new definition.

It is important to note that Chapter 30.62B SCC went through a major amendment process in 2015 after the 2014 Oso Landslide. The 2015 ordinance updated the definition of a landslide hazard area, increased requirements for geotechnical reports, increased disclosure of hazardous areas to property owners, and had other measures to protect the safety, health, and welfare of the public. With the major changes in 2015, the amendments proposed to the chapter in 2024 are relatively minor and focus on how channel migration zones can be identified and studied. Similarly, there were recent amendments to Chapter 30.65 SCC in 2020. After review of the BAS and the existing provisions within the special flood hazard area chapter, there are no proposed amendments to Chapter 30.65 SCC, although there are minor amendments proposed to Chapters 30.43C and 30.86 SCC related to floodplain habitat assessments to codify existing requirements.

Many of the proposed amendments throughout the critical area chapters of code are technical or housekeeping corrections, providing consistent language between chapters, and minor clarifications. The following sections highlight the more substantive changes that are proposed in each chapter and include findings of fact that support each change. Additional findings are included in Tables 1-6 of this staff report.

Chapter 30.62A SCC - Wetlands and Fish & Wildlife Habitat Conservation

Part 100 Process Requirements

Submittal requirements – SCC 30.62A.130: Proposing to add the requirement to submit wetland field delineation worksheets and wetland categorization worksheets at submittal, where applicable, within (2). If a development proposal will not impact wetlands, and a critical area study is not required, the applicant must still display wetlands on the site development plan per (1). In order for staff to confirm the accurate location of wetlands and buffers, these two worksheets are required. The proposed addition is to clarify this requirement for applicants and will likely result in a more efficient review of permits as staff will not have to ask for this documentation after the first review.

Permanent identification, protection, and recording – SCC 30.62A.160: Proposing amendments to detail when permanent fencing is required around critical areas, and how it must be constructed. Adding consistent temporary and permanent marking requirements. These proposed amendments are consistent with Ecology 2022 guidance[1] and reorganize some language already present in Chapter 30.62A SCC into one location.

Part 200 Designation, Functions and Values, and Classification

Classification of streams, lakes, wetlands, and marine waters – SCC 30.62A.230: Minor amendments to include supply and storage of water as functions of streams, and minor amendments to Table 1 to better align with WAC 222-160-030 definitions. Table 1 amendments are also based on July 2018 Ecology modifications to the Habitat Function Score for a moderate level of function for habitat, as well as the need to clarify that there are other special characteristic Category I wetlands, and that high level habitat function is also included within Category III wetlands.

Part 300 Standards and Requirements

General standards and requirements – SCC 30.62A.310: A 2008 Federal Mitigation Rule[2] flips the preference for mitigation of critical area impacts from onsite to offsite. Snohomish County proposes to adopt this preference switch for mitigation of impacts to wetlands, and offsite mitigation could also be allowed for buffers impacts with professional analysis. The proposed addition to (3)(b) is meant to alert the public and staff to this possibility later in the chapter.

Other proposed amendments within (b) are to add general mitigation requirements when mitigation is required for a project. Amendments include that plantings must be native and appropriate for the climate and ecoregion, and that monitoring is required for a minimum of five years. These amendments are aligned with the 2022 Ecology guidance and public input, and also codify existing county practice.

Standards and requirements for buffers and impervious surfaces – SCC 30.62A.320: Proposing an amendment to remove the 100 foot buffer for Type F waterbodies without anadromous or resident salmonids in Table 2a. The amendment would ensure all Type F waterbodies have a 150 foot buffer. The amendment is based on public input, definitions in WAC 222-16-030, and the BAS within the Washington Department of Fish and Wildlife's (WDFW's) Riparian Ecosystems, Volumes 1 and 2 reports.[3]

A new note to Table 2a is also proposed to adjust buffer widths when streams or lakes are located within a Special Flood Hazard Area. The proposed amendment is for the buffer to be the greater of what is listed in Table 2a, the channel migration zone plus 50 feet, or the mapped floodway. This is consistent with the Federal Emergency Management Agency (FEMA) Region 10 "Model Ordinance for Floodplain Management under the National Flood Insurance Program and the Endangered Species Act," January 2012. The amendment aims to help maintain streams and floodplains in their natural state to the

[1] Washington State Department of Ecology. October 2022. Wetland Guidance for Critical Areas Ordinance (CAO) Updates: Western and Eastern Washington. Publication #22-06-014.
[2] U.S. Army Corps of Engineers, Department of Defense; and Environmental Protection Agency. April 10, 2008. Compensatory Mitigation for Losses of Aquatic Resources; Final Rule.
[3] Quinn, T., G.F. Wilhere, and K.L. Krueger, technical editors. 2020. Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications. Habitat Program, Washington Department of Fish and Wildlife, Olympia. Riparian Ecosystems, Volume 2: Management Recommendations. 2020. Amy Windrope, Terra Rentz, Keith Folkerts, and Jeff Azerrad. A Priority Habitats and Species Document of the Washington Department of Fish and Wildlife, Olympia, Washington

maximum extent possible so they support healthy biological ecosystems, by: 1) assuring that flood loss reduction measures under the NFIP protect natural floodplain functions and riparian habitat, and the natural processes that create and maintain fish habitat, and 2) preventing or minimizing loss of hydraulic, geomorphic, and ecological functions of freshwater and estuarine floodplains and stream channels.

Minor adjustments are proposed to Table 2b to align with proposed changes within Table 1, and to help with table readability. Based on public input, staff also propose an addition of public roads within the urban growth area to the high intensity land uses listed within Note 1 of Table 2b. This addition also implies that public roads within the rural areas and private roads will be considered moderate uses. With the addition of functionally disconnected buffers into the code, discussed below, the County acknowledges the disturbance that roads as land uses can have on the landscape.

Proposing the addition of functionally and effectively disconnected buffer exclusions to SCC 30.62A.320(1)(c) that are consistent with 2022 Ecology guidance, and work to codify existing County practice. When buffers are bisected by existing, legally established structures or roads, the buffer functions may be blocked, and increasing the buffer on the far side of the existing development would add no protective benefit.

Amendments also include a proposed clarification within SCC 30.62A.320(1)(d)(ii) to better describe when total new effective impervious surfaces shall be limited to 10 percent within 300 feet of waterbodies containing salmonids. The update is based on scientific thinking where if the stormwater from the new effective impervious surface will not drain into the waterbody, then the 10 percent limit is not required.

Proposing removal of two buffer width reductions that are present in existing code that allow reduced buffers when a critical area is located in a separate tract or behind a fence within a new development. All critical areas must be located within a tract or easement pursuant to SCC 30.62A.160(3). When an applicant selects an option that is not beyond an existing requirement, this does not provide additional protection or enhancement of the critical area and should not receive reduced buffer widths. Similarly, fencing is often required along critical areas protection boundaries pursuant to SCC 30.62A.160(5). Therefore, providing a reduced buffer width for installing a permanent fence does not better protect or provide increased value in a way that would warrant a reduced buffer width. Providing a buffer width reduction when an applicant selects a tract and a fence is effectively receiving a reduction for following the code.

Amendments propose the addition of new standards for buffer averaging requirements for wetlands based on the category of wetland, and to clarify that the existing buffer averaging requirements in code pertain to streams, lakes, and marine waters. These proposed updates to the buffer averaging requirements for wetlands are to align with Ecology's 2022 guidance on this type of flexibility using a moderate risk approach. Ecology guidance states that "The buffer recommendations contained herein are based on a moderate-risk approach. In this document, risk is addressed by tailoring the degree of protection to several factors the scientific literature says are important. The widths recommended in this guidance were selected from the middle of the range of buffers suggested in the literature. In combination with other strategies like limiting buffer reductions, buffer averaging, and exemptions, it represents a moderate-risk approach to determining buffer widths." Amendments also remove the ability for applicants to combine buffer reductions with buffer averaging in line with Ecology's guidance.

Proposing to further detail the requirements for new utilities and transportation corridors allowed in buffers with mitigation within SCC 30.62A.320(2)(a) to ensure that entrance and exits must be outside of

the buffer. The existing code provides general requirements to minimize impacts to the buffer, and the newly proposed criteria focuses in particular on underground utilities and transportation corridors and requires a study from a professional hydrologist to ensure that impacts are not created to alter the percolation of surface water through the soil column or groundwater connection to the critical area. This better protects the values and functions of critical areas and is consistent with 2022 Ecology guidance.

Amendments are also proposed within SCC 30.62A.320(3) to clarify what areas can be included in the buffer mitigation area required by the ratios in Table 3 (Buffer Mitigation Ratios). Areas cannot include driveways, roads, paved areas for vehicles or foot traffic, easements for utility corridors, stormwater facilities, rights-of-way, and streams conveyed underground. These types of areas do not allow for full protection of the values and functions of buffers and therefore should not be given as credit to the project. This clarification is consistent with 2022 Ecology guidance.

Proposing to relocate the optional mitigation measures for wetlands from SCC 30.62A.340 into SCC 30.62A.320(4) to improve the readability of the chapter and allow the public and staff to better locate all relevant code sections in one place. Additional mitigation measures are proposed to be added to Table 4 consistent with 2022 Ecology guidance to be more helpful to applicants and staff, as well as more inclusive of a wide variety of minimization measures. Additional amendments aim to reduce the complexity of optional mitigation measure 2 for habitat corridors to potentially increase this measure's use in projects. The amendments are in line with 2022 Ecology guidance, in particular, to require that all corridors are a minimum of 100 feet in width.

Standards and requirements for activities conducted within streams, lakes, and marine waters – SCC 30.62A.330: Minor housekeeping amendments proposed along with an additional requirement for roads that cross any of the listed water bodies. The amendment comes from WDFW public comments focused on the impact climate change will have on the waterbodies (such as flow, volume, speed, etc.) that would then impact surrounding infrastructure. The new criteria require that road crossings consider the guidelines within "Incorporating Climate Change into the Design of Water Crossing Structures: Final Project Report" (Washington Department of Fish and Wildlife, revised November 2017) to both inform applicants of the report's existence and potentially produce more resilient road crossings.

Standards and requirements for activities conducted in wetlands – SCC 30.62A.340: Proposing an amendment to rewrite the mitigation requirements for wetlands within SCC 30.62A.340(4). The preference for onsite mitigation for wetland impacts by the project proponent to offsite mitigation through a third party mitigation bank or in-lieu fee program represents the shift in scientific understanding within the 2008 Federal Mitigation Rule previously referenced. This approach considers the watershed scale, where it could be more beneficial to protect, create, or enhance wetlands elsewhere in the watershed than at a specific site. Additional amendments are proposed to exclude certain areas from the mitigation ratios required in Table 5 such as driveways consistent with the proposed amendments within SCC 30.62A.320(3).

Table 5 includes proposed amendments in a new column for rehabilitation as a form of mitigation and the increase in mitigation ratios required for enhancement. Table 5 currently includes creation and enhancement, two forms of mitigation that have been in the code since 2007 following Ecology guidance at the time. Ecology's current definition of rehabilitation is similar to how the existing Snohomish County code treats enhancement, although, there are some important differences. Breaking out rehabilitation from enhancement in this table could provide more options to applicants for mitigation.

Proposed amendments to increase the mitigation ratios for enhancement are based on scientific rationale primarily within a 2021 Ecology publication[4] that states, "A 2002 study of mitigation in Washington State (Johnson et al., 2002) raised concerns about the value of enhancement. Only 11 percent of enhanced wetlands were even moderately successful, and none were fully successful. Furthermore, regulatory agency compliance inspections of compensatory wetland mitigation sites since 2006 indicate these concerns are still relevant:

- Most enhancement actions focus on improving vegetation structure and ignore improving environmental processes that support wetland systems and functions.
- There is a net loss of water quality and quantity functions, and only modest gains in habitat functions.
- The use of enhancement as a primary means of compensatory mitigation contributes to a loss of wetland area and functions…
- Enhancement could be more effective if it were geared to improve functions that are limited in a watershed or region…

Because enhancement occurs within existing wetlands that already provide functions to a certain degree, applicants proposing enhancement of freshwater wetlands will generally need to demonstrate a gain in wetland functions (i.e., functional lift) sufficient to compensate for wetland impacts by applying the Credit-Debit Method (Hruby, 2012a; Hruby, 2012b)." The new ratios are from 2022 Ecology guidance.

There is a newly proposed provision within SCC 30.62A.340(4) based on Ecology 2022 guidance to provide applicants with the option to utilize a credit-debit method of mitigation as an alternative to the mitigation ratios within Table 5. This new provision provides applicants with more options for their projects and follows BAS for the protection of critical areas.

Innovative development design – SCC 30.62A.350: Proposing amendments to clarify that any innovative design must be based on BAS, the proposal must demonstrate why the other standards cannot be met, and that outside of the deviation all other standards must be met. This is an existing County practice and codifying it provides more backing for staff to require adherence to BAS.

Mitigation banking and in-lieu fee program – SCC 30.62A.360: Proposing relocation of this section with minimal edits from Part 500 to be consistent with the proposed amendments to flip mitigation preferences from onsite to offsite for mitigation of wetland impacts. Providing offsite mitigation is no longer an exception to the code, it will be the preferred option for some projects and permitted with scientific backing in others.

Part 400 Critical Species and State Natural Habitats

Purpose – SCC 30.62A.410: Proposing updates to SCC 30.62A.410(3) to align with the Washington State list of sensitive species as of 2024.

Administrative rules – minimum protection requirements – SCC 30.62A.440: Proposing an amendment to detail that the primary association area for fish includes the stream, lake, wetland, or marine water buffer. This is a clarification driven by staff input that will help resolve questions among the public and staff and allow for more efficient permit review.

[4] Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. (2021). Wetland Mitigation in Washington State–Part 1: Agency Policies and Guidance (Version 2). Washington State Department of Ecology Publication #21-06-003.

Habitat assessment and management plan contents – SCC 30.62A.460: Proposing an addition to better align the existing habitat management plan section to floodplain area requirements from FEMA Region 10. This amendment codifies existing requirements.

Species of local importance – SCC 30.62A.470: Proposing the addition of the Washington Natural Heritage Program and WDFW Priority Habitat and Species Program as two circumstances that could be used to designate species of local importance. Fish and wildlife habitat conservation areas in SCC include "primary association of critical species" which the county defines in SCC 30.91P.290 and SCC 30.91C.370. The County's obligation is to consult WDFW's current information on priority habitats and species and the DNR's natural heritage program and aquatic resources program (for endangered, threatened, and sensitive species), and list of high quality ecological communities and systems and rare plants (for habitats and species of local importance) pursuant to WAC 395-190-130(4)(a) and (b). Critical species are defined in county code as including species listed by state and federal government as endangered or threatened and species of local importance. Species of local importance are defined in county code within SCC 30.91S.535, with designation criteria and implementation processes in SCC 30.62A.470.

Part 500 Exceptions

Minor development activity exceptions – SCC 30.62A.510: Housekeeping amendments proposed within (1). The requirement within WAC 365-196-830(4) has not substantively changed, although a sentence was added in 2023 noting that, "Avoidance is the most effective way to protect critical areas." The county proposes to add clarifying language to subsection (1) that states that best management practices (BMPs) should include those that avoid impacts where possible, in addition to those that minimize and mitigate for any adverse impacts to ensure no net loss of critical area functions and values.

Proposing updates to what constitutes a minor development within SCC 30.62A.510(3) based on 2022 Ecology guidance. Replacing the exemption for Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet and their associated buffers for just Category IV wetlands less than 4,000 square feet with additional criteria, and Category IV wetlands less than 1,000 square feet. The WAC requires no net loss of critical areas, and Ecology has refined their guidance since the last major CAR update about the wetlands that are acceptable to be impacted by development. Also proposing to add an exemption for Forest Practices that are exempt from local regulations, and an exemption to ensure that conservation or preservation projects could be considered minor development that would not require mitigation. These projects typically aim to enhance the critical area and do not need to provide additional mitigation.

Single family residential development exceptions in buffers – SCC 30.62A.520: Minor amendments proposed to (4) to be consistent with proposed amendments earlier in the chapter related to new effective impervious surfaces, as well as (12) to clarify that mitigation plans are required for development proposed under this exception.

Reasonable use – SCC 30.62A.540: Reasonable use does not mean the highest economic value of a property. Proposed amendments provide parameters around the total impact area that could be permitted in a critical area consistent with SCC 30.62A.520 and other nearby jurisdictions. This amendment will help ensure consistent implementation of this allowance and efficient permit review. Amendments within this section also clarify that mitigation plans are required for development projects applying for this exemption.

Mitigation banking and in lieu fee program – SCC 30.62A.550: Proposing to relocate this section from Part 500 to Part 300 where it is more applicable.

Part 600 Agricultural Activities
General Agricultural Standards – SCC 30.62A.620: Minor amendments to clarify that there can be no net loss of critical area ecological value or function and the addition of a new source of BMPs.

Farm conservation plans and best management practices – SCC 30.62A.640: Minor amendment proposed to remove a redundant sentence within (2)(b) as BMPs should always be maintained as long as the agricultural activity is ongoing. Proposed addition within (5) to add that monitoring records provided by the farm operator shall be retained by the County to ensure Farm Plans are working as intended.

Part 700 Monitoring and Adaptive Management.
Monitoring and adaptive management program – SCC 30.62A.710: The program was created after the 2007 update to the CAR, and proposed amendments to this section update the tense and description of the program.

Monitoring and adaptive management program – contents – SCC 30.62A.720: Minor amendments proposed to better align the code with current County practice.

Chapter 30.62B SCC – Geologically Hazardous Areas

Intent – SCC 30.62B.015: Housekeeping amendment to correct an incorrect reference to wetlands and fish and wildlife habitat conservation areas.

Geotechnical report requirements – SCC 30.62B.140: Minor amendment proposed to ensure that licensed engineers or geologists preparing the geotechnical reports must be licensed in the State of Washington.

Erosion hazard areas – Channel migration zones – SCC 30.62B.330: Proposing amendments within (1) to clarify that Table 1 is one way to identify channel migration zones (CMZs), and there could be other ways to identify CMZs utilizing BAS. The subsequent study required when a development activity or action is proposed within a CMZ can only be performed using a DNR method developed for Forest Practices in current code. Proposed amendments would add an additional Ecology methodology that County consultants identified as effective, and is currently in use by Surface Water Management. There are similarities between the DNR and Ecology methodologies, although Ecology's methodology provides multiple mapping methods that allow it to be more cost effective, its documentation provides greater detail, and Ecology's CMZ program is kept more up to date. The addition of the second allowed method would provide applicants with another, usually more cost effective, option for CMZ studies.

Chapter 30.62C SCC – Critical Aquifer Recharge Areas

Intent – SCC 30.62C.015: Housekeeping amendment to correct an incorrect reference to wetlands and fish and wildlife habitat conservation areas.

Hydrogeologic report and mitigation plan – SCC 30.62C.140: Proposing an amendment to add criteria for when a hydrogeologic report is required for a project. This will provide clarity to the public and staff.

Notice to Group A water systems – SCC 30.62C.150. Revising the section to clarify when notice will be provided to Group A water systems when certain activities are proposed within the wellhead protection zones of wells used for public water supply, and to clarify the role of the Group A water systems in responding to the county's notice when suggesting conditions for protection of the water supply. This will help ensure consistent permit review.

Uses prohibited within certain critical aquifer recharge areas – SCC 30.62C.330: Amendment to clarify that use prohibitions only apply within certain types of CARA; add language to the prohibition of landfills to address emerging issues such as e-wastes; and clarify the types of Underground Injection Control (UIC) wells to be prohibited within select CARAs.

UIC wells are categorized into Class I – V by the EPA. Class V UIC wells include certain types of stormwater management facilities considered as "low impact development" (LID). Use of LID is required as the preferred method for stormwater management under the county's Phase I Municipal Stormwater Permit issued by Ecology under authority of the federal Clean Water Act (CWA) and codified in Chapter 30.63A SCC. The Phase I Permit also requires that adoption of county policy and code must not create barriers to the use of LID. Current language in SCC 30.62C.330 prohibits the use of all UIC wells within CARA of high sensitivity without recognizing the specific requirements for LID under the CWA. The proposed amendments to SCC 30.62C.330 and .340 contain provisions for stormwater-related UIC wells resolving the potential conflict between Chapters 30.62C and 30.63A SCC while still recognizing the potential for stormwater UIC wells to contaminate groundwater. A hydrogeologic report would be required for any stormwater UIC well located within certain CARA with high or medium sensitivity (including Group A wellhead protection zones and sole source aquifers) that does not meet the non-endangerment standard in the states UIC well program described in WAC 173-218-080, -090, -100.

Uses and development activities subject to special conditions – SCC 30.62C.340: Proposing an amendment to revise the tables listing specific uses that are subject to CARA requirements as well as subject to additional state or federal requirements. The tables specify which uses are subject to hydrogeologic reports when located in any CARA, and those uses subject to hydrogeologic reports only when located within CARAs rated as high or medium sensitivity. A third section is added to clarify requirements for UIC wells used for stormwater management when the "non-endangerment standard" from WAC 173-218-080 is met, in particular, certain types of UIC wells used at home to collect residential roof-runoff or prevent a basement from flooding must meet minimum standards.

Chapter 30.43C SCC – Flood Hazard Permits

Additional submittal requirements – SCC 30.43C.030: Amendments are not proposed to Chapter 30.65 SCC, although a link to the habitat assessment and management plan requirements specific to projects in the special flood hazard area proposed within Chapter 30.62A SCC is necessary within Chapter 30.43C SCC to ensure that applicants are aware of the requirement. The proposed addition within Chapter 30.62A SCC is to codify existing requirements and practice.

Chapter 30.86 SCC – Fees

Special flood hazard areas permit fees – SCC 30.86.300: While there are no proposed amendments to Chapter 30.65 SCC, there is an amendment to codify the required habitat assessment and management plan for projects within the special flood hazard area within SCC 30.62A.460 and to alert flood hazard permit applicants to the requirement within SCC 30.43C.030. This proposed amendment is to link the

requirement to the necessary fees. The proposed fee for habitat assessment and management plan in the special flood hazard area is the same as within Table 30.86.525(5) for habitat assessment and management plans outside of the special flood hazard area.

Chapter 30.91A – "A" Definitions

Appurtenance – SCC 30.91A.250: Minor amendment proposed to be consistent with the proposed amendment within SCC 30.86.300 that lists "appurtenance" in the fee table.

Chapter 30.91C – "C" Definitions

Critical area – SCC 30.91C.340: Minor amendment proposed to help the public and staff understand that frequently flooded areas include special flood hazard areas regulated under Chapter 30.65 SCC. The WAC 365-190-110(1) directs that frequently flooded areas are a critical area and must include, at a minimum, the 100-year flood plain designations of the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program (NFIP). FEMA and the NFIP refer to these floodplains as "special flood hazard areas".
Snohomish County Code utilizes the term special flood hazard areas to align with FEMA definitions as per SCC 30.65.040 and SCC 30.91F.370.

Critical species – SCC 30.91C.370: Critical species are defined in county code as including species listed by state and federal government as endangered or threatened and species of local importance. Proposed amendment to the critical species definition to ensure all state listed sensitive species are included within the definition as of the WDFW February 2022 list.

Chapter 30.91Q SCC – "Q" Definitions

Qualified Professional – SCC 30.91Q.020: Newly proposed definition to provide clarity to the public and staff. The term qualified professional is utilized within existing code in Chapter 30.62B SCC and is proposed within Chapter 30.62A SCC.

PUBLIC INPUT
The county began collecting BAS related to critical areas as soon as the last major update was completed. These activities increased over the last two years with staff reaching out to the public and other jurisdictions requesting their input on BAS. After the collected BAS was analyzed, staff prepared preliminary CAR drafts that were posted online and sent directly to key parties requesting input. A 21-day public comment period was held between January 17 and February 7, 2024, and several staff presentations were given to organizations to help encourage public engagement. Staff gave presentations to groups such as the Farm Bureau, Snohomish County Agricultural Committee, the Master Builders Association, and Snohomish County Tomorrow (SCT). The County received approximately 30 public comments, and many comments were incorporated into the proposed amendments (see Tables 1). About one third of the comments received were questions to better understand what generally was going on with the update. Questions like will this impact my property? Comments were sent by individuals, Tribes, utility providers, non-profits, the MBA, and state agencies including DNR, Ecology, and WDFW. Table 2 below provides a list of substantive comments that were not incorporated into the proposed amendments and why.

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
Chapter 30.62A SCC			
.140	*Ecology:* There is no definition of qualified professional in the draft provided. Ecology guidance defines a qualified wetland professional.	Add: SCC 30.91Q.020 Qualified Professional, means a person who possesses a degree or equivalent from an accredited institute of higher learning in biology, ecology, environmental science, resource management, or a related field and has obtained any required professional certification (such as wetland specific training programs) and credentials necessary to prepare plans. This definition applies only to chapters 30.62A and 30.62B SCC.	No definition of a qualified professional is included in the code, although the term is within the existing language of Chapter 30.62B SCC, and in proposed amendments to Chapter 30.62A SCC. As the term is utilized across chapters and in relation to multiple critical areas, more general language is necessary than proposed by Ecology specifically toward wetlands. The definition is necessary to reduce confusion and implementation.
.150	*WDFW:* Request to insert language within SCC 30.62A.310(3) that all mitigation and subsequent monitoring must be approved by a qualified professional	SCC 30.62A.150: Unless otherwise provided by this chapter, project permit applicants must provide a mitigation plan prepared by a qualified professional to address impacts to affected wetland, fish and wildlife habitat conservation area, or buffer functions and values as identified in the critical area study required pursuant to SCC 30.62A.140, provided that mitigation for the primary association area of critical species shall also comply with the requirements of Part 400.	Proposed amendment to add "qualified professional" to mitigation plan requirements to ensure that a qualified individual is preparing all mitigation documentation. While not the location requested by the WDFW comment, this would ensure the intent of the comment was included in the code in a location where all applicants and staff will look to see the requirements for mitigation plans.
.150(1)(c)	*WDFW:* Proposed text amendment to add no net loss specifications.	(c) Specify how functions and values lost as a result of the activity will be replaced and result in no net loss of ecological values and functions. This includes the amount of mitigation that will be provided and the rationale for the selection of the proposed type and location of compensatory mitigation as applicable;	Proposing amendment because while no net loss is clearly stated as the requirement within SCC 30.62A.310 (general standards and requirements), as well as within the monitoring program in SCC 30.62A.710, the code does not ask the applicant to specify how their actions / mitigation will result in no net loss.

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
.160(6)	*Tulalip Tribes:* Proposed revised text because new development might create different or more intense impacts on a critical area than the existing or previous use. Therefore, language should provide for the flexibility to revise a CASP if it would no longer provide equal or better protection to the critical area once new development is in place.	(6) *Previously approved critical area site plans.* For any development activity, action requiring a project permit or clearing occurring consistent with a previously approved critical area site plan shall be governed according to the terms and conditions of the approved site plan, provided that all wetlands, fish and wildlife habitat conservation areas, and buffers have been identified and specific permanent protection has been provided. "Consistent" means that there are no proposed modifications to the critical area protective measures established on the previously approved plan ((~~or~~)) , no proposed increase in impacts, and no proposed direct impacts to the critical areas or buffers.	Housekeeping amendment to clarify when a new CASP is required.
.310(3)(b)(iv)	*SLS:* Our concern with this section is that native species, while preferred, are not always the best selection. "(iv) Preferred plantings shall be climate resilient native species appropriate to the ecoregion."	(iv) Plantings shall be native species appropriate to the climate and ecoregion.	To accommodate Ecology guidance on native species, and SLS's concern about climate change, proposed change could allow for the selection of species that are resilient.
.320(1) Table 2a	*Snoqualmie Indian Tribes:* We recommend that Snohomish County define Type F waters containing fish habitat to be consistent with state water typing code found at WAC 222-16-030(h): "'Fish habitat' means habitat which is used by any fish at any life stage at any time of the year, including potential habitat likely to be used by fish which could be recovered	Table 2a Stream, Lake and Marine Buffer Width Standards (Feet) *Streams* and Lakes Type S: 150 Type F ((~~with anadromous or resident salmonids~~)): 150 ((~~Type F without anadromous or resident salmonids~~: ~~100~~)) Type Np: 50	The existing classifications of the stream and lake types in Table 1 of SCC 30.62A.230 are consistent with WAC 222-16-030. WAC 222-16-030 includes Type F waters as well as Type Np and Type Ns waters that are considered non-fish habitat. Snohomish County's 2006 Best Available Science (BAS) Report also discusses the science behind non-fish habitat stating, "Some aquatic areas have no fish or fish-bearing potential. For example, Latterell et al. (2003) found that absent impassable barriers, salmonids

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
	by restoration or management and includes off channel habitat." The County's rationale around how fish habitat should be buffered from land use impacts, versus non-fish habitat, which currently receives less protection, needs to change. All waters of Snohomish County eventually become part of fish habitat, and protecting those waters even where fish are not presently located protects water quality and will benefit both resident and anadromous fish. This is in line with WDFW's Riparian Ecosystems, Volume 2: Management Recommendations, which states "we found 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." The text goes on to list found considerations for this recommendation.	Type Ns 50 *Marine Waters* Type 1 All marine waters 150	were rarely found in small streams at gradients greater than 22 percent. In some cases, small streams originating as spring seeps go underground before making a surface connection with a fish-bearing aquatic area. In other situations, lakes and ponds having no surface connection to a fish-bearing stream or have waters that are unsuitable for fish (e.g., bogs are too acidic). Regardless, isolated or otherwise fishless isolated waters can be used extensively by other animals, especially amphibians and macroinvertebrates (e.g., stoneflies) for breeding, rearing, or refuge (Muchow and Richardson 2000). When they disappear due to infiltration, their waters can contribute to local aquifers that ultimately supply fish-bearing waters with cool, clean groundwater. Thus, fishless and isolated waters can function as habitat for non-fish species and indirectly provide for the water quality and hydrologic functioning of waters with fish." The 2006 BAS Report and therefore the existing code considered the functions and values of non-fish habitat when determining the buffers within the existing code. Although staff agree that fish habitat is fish habitat and recommended amendments include that there should not necessarily be less protection for Type F waters without anadromous or resident salmonids. Additionally, staff rarely see proposed developments requesting 100 foot buffers instead of the 150 foot buffers for Type F with salmonids. The reasoning for this is that it is difficult for applicants to

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
			provide evidence that a Type F water does not include anadromous or resident salmonids beyond applicants performing DNA analysis of the water. The impact of removing the 100 foot buffer for Type F waters will be minimal, although in line with BAS as discussed within the WAC definitions and the WDFW's Riparian Ecosystems, Volume 1 and 2.
.320(1) Table 2b	*Ecology:* There is no mention of high intensity agricultural activities or high intensity roads. Our guidance provides a table of examples of high, moderate, and low intensity land uses. For clarity and ease of understanding, we would recommend adding more to the list.	**1** High intensity land uses include: • commercial or industrial uses • nonresidential use in zones where the primary intent is residential use as per SCC 30.21.025 • Residential use (4 or more units/acre) • High-intensity recreation (golf courses, ball fields, ORV parks, etc.) • Public Roads within the Urban Growth Area (UGA) **2** Low intensity land uses include: • Forestry (cutting of trees only) • Low-intensity open space (hiking, bird-watching, preservation of natural resources, etc.) • Unpaved trails • Utility corridor without a maintenance road and little or no vegetation management.	Some roads do qualify as high intensity land uses. Proposed amendment will add public roads within the UGA to the high intensity land uses, therefore public roads within the rural areas and private roads will be considered moderate. With the addition of functionally disconnected buffers into the code, staff acknowledge the disturbance of roads as land uses. This proposal works in unison with the new allowance of not requiring buffers to go past existing roads.
.320(1)(b)(i)	*Tulalip Tribes:* Request for additional language. Without this added language, there may be room for dispute.	(i) the buffer for streams, lakes, and marine waters shall be measured from the ordinary high-water mark extending horizontally in a landward direction if there is not a channel migration zone. If a channel migration zone is determined pursuant to SCC 30.62B.330, the buffer will be measured horizontally from the landward edge of the channel migration zone.	Housekeeping amendment.

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
.320(1)(c)	*Tulalip Tribes:* Often buffers are degraded or encumbered by existing development. Current regulations allow these pre-developed areas to be essentially considered lost, and therefore new development on top of the degraded part of the buffer zone is permissible. We believe that existing structures, surfaces, or roadways should only be allowed to stay if they will continue to be used as originally intended. If project proponents do not intend to retain the existing structure or roadway in a buffer zone, effectively implementing a "change of use", new development must adhere to current critical areas regulations, and the buffer "zone" should be restored to a functioning buffer.	(c) Buffers may exclude areas that are functionally and effectively disconnected from the critical area by an existing public or private road, or other legally established development <u>that is to continue its legally established use</u>. Areas of exclusion shall be limited to those buffer areas where buffer functions are blocked by the road or other legally established development.	Housekeeping amendment.
.320(1)(d)	*MBA:* Amend proposed changes to this provision to read (ii) total new effective impervious surfaces shall be limited to 10 percent within 300 feet <u>flow path[1]</u> of ((:)) <u>any streams or lakes containing salmonids; wetlands containing salmonids; or marine waters containing salmonids, except when:</u> <u>(A) the new effective impervious surfaces is not within a 300 foot flow path of the Ordinary High</u>	(ii) total new effective impervious surfaces shall be limited to 10 percent within 300 feet of any streams or lakes containing salmonids; wetlands containing salmonids; or marine waters containing salmonids, except when: (A) the new effective impervious surfaces ((~~is~~)) <u>are</u> not within ((~~the contributing drainage sub-basin~~)) <u>a 300 foot flow path to the Ordinary High Water Mark of a stream, lake, wetland, or marine waters containing salmonids</u>; or	The County agrees that it will be helpful to further clarify the exceptions to SCC 30.62A.320(1)(d)(ii). Flow path is defined within the Snohomish County Drainage Manual Volume I as "The route that stormwater runoff follows between two points of interest." Amendments to (A) clarify that the intent of the exception is to except areas where runoff would not drain into the nearby waterbody because of slope, geography, etc. that impact the flow and direction of stormwater.

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
	Water of stream, lake, wetland, or marine water containing salmonids[2]; or (B) the stormwater flow from the area of new effective impervious surfaces travels through an existing manmade conveyance before entering the stream, lake, wetland, or marine water containing salmonids[3] (C) if the 300 foot impervious limited area is interrupted as defined by 30.62A.320(1)(c) Notes The stormwater regulations have changed drastically since this code was originally implemented. This code was originally adopted before the 1992 stormwater manual. At that time LID was not required anywhere in the county. Now LID stormwater BMP's are required everywhere they are feasible. Also the modeling has gotten much better and flow control facilities much larger. This does not affect the stream buffer and the intent that there are no impervious surfaces within a stream buffer. This is just effectively regulating the area between the stream buffer and the 300 foot line from the critical	(B) the ((~~stormwater~~)) flow path from the new effective impervious surfaces is functionally and effectively disconnected from the stream, lake, wetland, or marine water containing salmonids.	Exception (B) is proposed to remain as initially proposed as a flow path that is interrupted by a barrier that effectively disconnects it from the waterbody is not necessarily the same thing as when a buffer is functionally and effectively disconnected pursuant to SCC 30.62A.320(1)(c). Interrupting the buffer designated as CAPA is unrelated to how the drainage flows across an area. Similarly, the newly proposed (B) from the MBA is unnecessary because the County proposed (A) and (B) exclude areas that do not drain to the water body.

Table 1. Amendments spurred by Public Input

<table>
<tr><th>Code Citation</th><th>Summary of Public Comment</th><th>Proposed Amendment (Beyond Preliminary Drafts)</th><th>Finding</th></tr>
<tr><td></td><td>area. To our knowledge no other jurisdiction in Snohomish County or even King County has this same restriction.
[1] On option is to add flow path in the beginning to get across the idea of is it within the same basin
[2] Second option is to insert the flow path requirement as an exception.
[3] The previous language was hard to understand and define.</td><td></td><td></td></tr>
<tr><td>.320(1)(e)</td><td>WDFW: Requested text amendment (1)(e) ..to blow down or other causes. <u>If impacts do occur, mitigation measures must be taken to achieve no net loss of ecological values and functions</u>.</td><td>All development activities, actions requiring project permits or clearing shall be designed to avoid the loss of or damage to trees in buffers due to blow down or other causes. <u>If impacts do occur, mitigation measures must be taken to achieve no net loss of ecological values and functions</u>.</td><td>Proposed amendment because if it can be determined the tree fell down as a result of the development activity (for example, due to damage to the root structure) this is an impact to the buffer to be mitigated.</td></tr>
<tr><td>.320(1)(g)(ii)</td><td>Tulalip Tribes: A “required” buffer might already be reduced from the standard, often contrary to our recommendations. To reduce the buffer an additional 25% would be a “combining of reduction methods” which is already proposing to be prohibited.</td><td>(ii) Enhancement reductions. Up to a 25 percent reduction of the standard buffer width and area is allowed provided the project proponent demonstrates the enhancement complies with all of the following criteria:</td><td>Reverting to the existing code language in this section. Preliminary draft amendments proposed to replace “standard” with “required.”</td></tr>
<tr><td>.320(4) Table 5</td><td>Ecology: Only two forms of mitigation are included. This section should consider other available mitigation options. We strongly recommend incorporation of mitigation ratios and tables from the joint mitigation</td><td>Table 5 Wetland Mitigation Ratios [not displaying creation column]
<table>
<tr><th>Category/Type of Wetland</th><th><u>Rehabilitation</u></th><th>Enhancement</th></tr>
<tr><td>All Category IV</td><td><u>3:1</u></td><td>((~~3:1~~)) <u>6:1</u></td></tr>
<tr><td>All Category III</td><td><u>4:1</u></td><td>((~~4:1~~)) <u>8:1</u></td></tr>
</table></td><td>Two forms of mitigation have been in the code since 2007 following Ecology guidance at the time. The County does not propose a new column for preservation as preservation is already required. Ecology’s definition of rehabilitation is similar to how existing Snohomish County code treats enhancement</td></tr>
</table>

Table 1. Amendments spurred by Public Input

<table>
<tr><th>Code Citation</th><th>Summary of Public Comment</th><th colspan="3">Proposed Amendment (Beyond Preliminary Drafts)</th><th>Finding</th></tr>
<tr><td></td><td>guidance. Our most recent CAO guidance also has example tables to reference. These ratios are too small for enhancement and are inconsistent with joint agency mitigation guidance.</td><td colspan="3"><table>
<tr><td>Category II Estuarine</td><td><u>4:1</u></td><td>4:1</td></tr>
<tr><td>All other Category II</td><td><u>6:1</u></td><td>((~~6:1~~)) <u>12:1</u></td></tr>
<tr><td>Category I based on score for functions</td><td><u>8:1</u></td><td>((~~8:1~~)) <u>16:1</u></td></tr>
<tr><td>Category I listed by the Washington</td><td><u>Innovative development only</u></td><td>Innovative development only</td></tr>
<tr><td>Natural Heritage Program as having High Conservation Value</td><td><u>Innovative development only</u></td><td>Innovative development only</td></tr>
<tr><td>Category I Coastal Lagoon</td><td><u>Innovative development only</u></td><td>Innovative development only</td></tr>
<tr><td>Category I Bog, Mature Forest, and Old Growth Forest Wetlands</td><td><u>Innovative development only</u></td><td>Innovative development only</td></tr>
<tr><td>Category I Estuarine</td><td><u>Innovative development only</u></td><td>Innovative development only</td></tr>
</table></td><td>as outlined within the allowed enhancement reduction within SCC 30.62A.320(1)(g)(ii)(B), and the definition within SCC 30.91E.125. Breaking out enhancement and rehabilitation could provide more options to applicants and a new column is proposed utilizing the recommended ratios of Ecology.

Proposed amendments increase the mitigation ratios for enhancement. The scientific rationale behind the increase in ratios for enhancement comes primarily from 2021 Ecology publication that states, "A 2002 study of mitigation in Washington State (Johnson et al., 2002) raised concerns about the value of enhancement. Only 11 percent of enhanced wetlands were even moderately successful, and none were fully successful. Furthermore, regulatory agency compliance inspections of compensatory wetland mitigation sites since 2006 indicate these concerns are still relevant:
- Most enhancement actions focus on improving vegetation structure and ignore improving environmental processes that support wetland systems and functions.
- There is a net loss of water quality and quantity functions, and only modest gains in habitat functions.
- The use of enhancement as a primary means of compensatory mitigation contributes to a loss of wetland area and functions.
.... Enhancement could be more effective if it were geared to improve functions that are limited in a watershed or region.</td></tr>
</table>

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
			....Because enhancement occurs within existing wetlands that already provide functions to a certain degree, applicants proposing enhancement of freshwater wetlands will generally need to demonstrate a gain in wetland functions (i.e., functional lift) sufficient to compensate for wetland impacts by applying the Credit-Debit Method (Hruby, 2012a; Hruby, 2012b).
.320(4)(b)	*Ecology:* Our guidance states that in order to use the reduced buffer tables that both measures have to be used. Highly recommend changing the optional mitigation measure to require the use of Table 4 and the habitat corridor for CAT III, II, and I wetlands with a habitat score of 6 or higher. Wetlands that score a habitat score 5 or less do not need the habitat corridor but still need the use of the impact minimization measures (Table 4) … Per our guidance the use of a habitat corridor would also include Cat III wetlands not just I and II. We would highly recommend wetlands with 6 or higher on habitat score to use habitat corridor and impact minimization measures to qualify for the reduced buffer widths in Table 2b.	*Optional mitigation measure 2.* For Category I ((~~or~~)) , II, or III wetlands that score moderate or high for habitat (6 points or more for the habitat functions), to qualify for the reduced buffer widths listed in SCC 30.62A.320(1)(a) Table 2b, a habitat corridor shall be preserved that meets the following criteria:	Not proposing to require both measures to be required (in a February 16, 2024, meeting Ecology withdrew a previous comment requesting that measures 1 and 2 must be utilized to allow for the reduced buffer widths) although the proposed amendment includes Category III wetlands with moderate or high habitat scores in habitat corridors. This amendment does not require habitat corridors, although it would allow for more proposals to utilize this mitigation measure.

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
.320(4)(b)(iv)	*Tulalip Tribes:* We believe this is a typo. The County appears to be changing "director" to "department" throughout their draft amendments.	(iv) The ((~~director~~)) department may approve alternative configurations which meet the intent of no net loss of habitat functions and values pursuant to SCC 30.62A.350.	Housekeeping amendment.
.330(d)	*WDFW:* We suggest road crossings take into consideration the impacts of climate change related factors. WDFW's report, Incorporating Climate Change into the Design of Water Crossing Structures, is a valuable resource that could be incorporated into this section of code.	(i) road crossings on fish-bearing streams shall be designed according to the guidelines set forth in Water Crossing Design Guidelines (Washington Department of Fish and Wildlife, May 9, 2013) or as subsequently amended or revised; ((~~and~~)) (ii) road crossings shall consider the guidelines set forth in Incorporating Climate Change into the Design of Water Crossing Structures: Final Project Report (Washington Department of Fish and Wildlife, revised November 2017) or as subsequently amended or revised; and	Proposed amendment as it makes scientific sense to design road crossings to withstand higher flows expected as a result of climate change. Although, the report listed in the WDFW comment states, "Please note that this report is presented as informational only. It is intended to provide information that managers or engineers might consider when designing new or replacement water crossing structures. Use of this report and the information it provides is voluntary." Proposing a new requirement that the report be considered when designing road crossings. This will work to inform applicants of the existence of the report, without requiring adherence to the information therein.
.360(4)(a)(i)	*Ecology:* As of January 2017, Ecology is no longer involved in the authorization or ongoing management of ILF programs, so this guidance is no longer applicable. The document referenced here is no longer on Ecology's website. We would recommend the CAR reference the updated interagency mitigation guidance: Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency	(i) In-lieu fee mitigation shall be ((~~established~~)) conducted in accordance with the guidance contained in ((~~"Guidance on In-lieu Fee Mitigation" (Washington State Department of Ecology, December 2012, or latest edition, Publication #12-06-012~~))) "Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance: Version 2" (Washington State Department of Ecology, US Army Corps of Engineer Seattle District, and U.S Environmental Protection Agency Region 10, April 2021, or latest edition, Publication # 21-06-003).	(4)(a) of this subsection of SCC already states that, "Credits from an approved ILF program may be used when all of the following apply" and (i) is a criterion underneath this. If already approved, the ILF does not need to be established. The Seattle District of the US Army Corps of Engineers is the agency that provides support on ILF programs with authorization to approve an ILF program. The interagency publication referenced in Ecology's comment provides general guidance and is

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
	Region 10. (2021). Wetland Mitigation in Washington State–Part 1: Agency Policies and Guidance (Version 2). Washington State Department of Ecology Publication #21-06-003. or Reference "Chapter 4.1.2 In-lieu fee programs." from Wetland Mitigation in Washington State–Part 1 (Version 2).		a publication that will aid applicants in their ILF mitigation.
.510	*WDFW:* (1) Certain minor development activities may occur in ((~~or cause impacts to~~)) wetlands, fish …provided <u>that there is no net loss of ecological values or functions, and</u> the project proponent complies with the best management practices (BMPs)…" No net loss of critical area value or function can occur pursuant to state law (WAC 365-196-830). The language as written in this section does not align with this provision as written.	(1) Certain minor development activities may occur in or cause impacts to wetlands, fish and wildlife habitat conservation areas, or buffers provided the project proponent complies with best management practices (BMPs) adopted through rulemaking pursuant to chapter 30.82 SCC and all known and available reasonable technology (AKART) appropriate for compliance with this chapter <u>to ensure no net loss of functions or values</u>. BMPs are physical, structural, or managerial practices which have gained general acceptance by professionals in the appropriate field to <u>avoid,</u> minimize<u>,</u> and mitigate adverse impacts to the functions and values of critical areas.	The requirement within WAC 365-196-830(4) has not substantively changed, although a sentence was added in 2023 noting that, "Avoidance is the most effective way to protect critical areas." Proposed amendment to add clarifying language to subsection (1) that includes BMPs applicable to the listed minor development activities should include those that avoid impacts where possible, in addition to those that minimize and mitigate for any adverse impacts to ensure no net loss of critical area functions and values.
.510(3)(h)	*SLS:* When removing invasive species there are many tools that we employ, including tractors, brush cutters, chainsaws, and herbicides, all of which are determined on a case-by-case basis as the most effective means of invasive species removal. We suggest modifying this language to remove the "by hand" language. We want to ensure that the	(h) Removal of invasive weeds;	Reverting back to existing code.

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
	code allows for invasive species removal following BMPs recommended by a qualified professional in a habitat restoration plan or a Conservation District farm plan.		
.510(4)(c)	*Ecology:* Please update to our most current publication (2.0) from 2023. It has a new publication number of #23-06-009.	(c) the wetland is not part of a wetland mosaic consisting of multiple small wetlands (Hruby, T., October 2014, Department of Ecology, Publication #((~~14-06-029~~)) 23-06-009, or latest edition);	This proposed update relates to SCC 30.62A.510(4)(c) as commented, as well as SCC 30.62A.130(2)(f), SCC 30.62A.140(2), and SCC 30.62A.230(2).
.520	*Ecology:* This seems unclear and would like clarification. Perhaps move "lots existing prior to October 1, 2007" to the start of the sentence?	On lots existing prior to October 1, 2007, ((~~New~~)) new single family residential development, expansions of existing single family residences, and ordinary residential improvements ((~~on lots existing prior to October 1, 2007,~~)) are allowed in buffers only as follows:	This statement can be confusing, and proposed amendment to move the date to the front of the sentence to clarify intent.
.640(4)	*Ecology and WDFW:* In these cases (if not referred to noncompliance to appropriate agency) will they still be required to mitigate for their impacts? WDFW recommended language added on no net loss in .640(4)(b).	To clarify intent proposing addition to SCC 30.62A.620 to read, "…are in compliance with this chapter when those activities are performed in accordance with subsection (1), (2) or (3) of this section and ensure no net loss of ecological value and function of critical areas:"	Agricultural activities must stop according to SCC 30.62A.640(4) if any of the three criterion therein are met. To address Ecology's comments, an amendment is proposed to SCC 30.62A.620 clarifying that there can be no net loss of value or function.
Chapter 30.62B SCC			
.140(2)	*DNR:* Add that geotechnical reports must be prepared by an engineer licensed in Washington state to SCC 30.62B.140(2).	(2) The geotechnical report shall be prepared, stamped, and signed by ((~~a licensed~~)) an engineer or geologist licensed in the state of Washington and contain the following information relevant to the geologically hazardous area.	The code already requires that the engineer be licensed, and this would add that the license must be from Washington State. This is already practice, and the amendment would codify this practice.
Chapter 30.62C SCC			
.140	*Olympic View:* We are concerned that "sensitivity" related to depth may not capture all vulnerable aquifers.	Revise designation criteria in 30.62C.220: ((~~(2) Areas within the 10-year travel zone of Group A wellhead protection areas, determined in~~	The designation criteria are based on mapping done by state DOH. The rankings of high/medium/low are based on more than just "sensitivity"; vulnerability,

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
	Request reference to a water purveyor's hydrogeologic mapping and reports whenever possible in the Code for guidance.	~~accordance with delineation methodologies specified by the Washington Department of Health under authority of chapter 246-290 WAC; and~~)) (2) Group A wellhead protection areas as determined by the following: (a) Areas within the 10-year travel zone of a Group A wellhead protection area determined in accordance with delineation methodologies specified by the Washington State Department of Health under authority of chapter 246-290 WAC; or (b) Areas defined as Group A wellhead protection areas including the 10-year travel zone and additional buffer zone or zone of contribution identified by hydrogeologic analysis conducted by qualified licensed engineers and documented in a watershed protection plan or water system comprehensive plan, provided that such plans and wellhead protection area boundary data are provided to the county.	depth to GW, soil types, and other factors are included. It also makes sense to recognize the more detailed, localized analysis done for individual Group A wellhead zones and include this information in the designation criteria where available. In any case, Group A wellhead zones are treated the same as CARA designated as "high sensitivity".
.220	*Olympic View:* Request to have the term "buffer zone" included in the classification section and noted in the code as part of the protection areas.	(see language above revising designation criteria in 30.62C.220.)	
.140 and .320	Request all mitigation language be removed from the CARA Code.	New general requirement in 30.62C.320: (1) Project proponents shall avoid or prevent impacts to groundwater within Group A wellhead protection zones by not taking a certain action or parts of an action; limiting the degree or magnitude of the action and its implementation;	This comment raises an interesting question: How could contamination of a drinking water source be mitigated? "Avoid or prevent" should be the standard. Accidental impacts must be addressed by a clean-up plan and remediation action.

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
		using appropriate technology and best management practices, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid impacts. If impacts cannot be avoided or prevented proposed actions identified in Part 300 will not be approved. Mitigation is not an option in this situation because impacts to drinking water must not occur. 30.62C.140 (i) A spill plan that identifies equipment and structures that could fail, resulting in an impact to the critical aquifer recharge area. Spill plans shall include provisions for regular inspection, repair, and replacement of structures and equipment with the potential to fail, and a remediation plan should clean-up become necessary;	Mitigation could still be proposed for other CARA.
.340(1) and (2)	*Olympic View:* Request to have language stating additional requirements may be mandated by the water purveyor	Language added to 30.62C.340 (1) and (2): If located within a Group A wellhead protection area, conditions may also be applied based on consultation with the Group A public water system through the notification process in SCC 30.62C.150.	The local Group A water provider is best positioned to understand the hydrogeologic conditions in their Group A wellhead protection zones, particularly if they have prepared detailed hydrogeologic analysis for inclusion in their watershed plans or comprehensive water system plans.
Chapter 30.91C SCC			
.370	*WDFW:* Add under SCC 30.62A.010(b) "VII. State priority habitats and areas associated with state priority species defined and listed by the Washington Department of Fish and Wildlife in the Priority Habitats and Species List, as amended.	SCC 30.91C.370: "Critical species" means all species listed by the state or federal government as endangered or threatened and species of local importance, and also includes: Larch Mountain salamander, Common loon, ((~~Peregrine falcon,~~)) Margined sculpin, Olympic mudminnow, Pygmy whitefish, and Gray whale.	**PHS -** No proposed changes within Chapter 30.62A SCC in response to this comment as FWHCAs in SCC include "primary association of critical species" which the county defines in SCC 30.91P.290 and SCC 30.91C.370. The County's obligation is to consult WDFW's current information on priority habitats and species, the DNR natural heritage program and

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
	VIII. Riparian Management Zones as defined by SCC ___"		aquatic resources program (for endangered, threatened, and sensitive species), and list of high quality ecological communities and systems and rare plants (for habitats and species of local importance). WAC 395-190-130(4)(a) and (b). Critical species are defined in county code as including species listed by state and federal government as endangered or threatened and species of local importance. Recommended amendment to the critical species definition to ensure all state listed sensitive species are included within the definition as of the WDFW February 2022 list. Species of local importance are defined in county code within SCC 30.91S.535, with designation criteria and implementation processes in SCC 30.62A.470. The County's proposed amendments include the process for designating species of local importance to include WDFW PHS program and the DNR Washington Natural Heritage program a basis for designation. **RMZ -** While there has been some new science (notably within the pollutant removal value and function of riparian areas (or buffers per SCC)) the results do not deviate from the BAS included within the 2006 County BAS Report. For instance, 2008 through 2014 scientific work displays that 80% efficacy of removal can be provided by approximately

Table 1. Amendments spurred by Public Input

Code Citation	Summary of Public Comment	Proposed Amendment (Beyond Preliminary Drafts)	Finding
			62 feet, and 90% with approximately 96 feet (WDFW, 2020, Volume 1), and the 2006 BAS Report cites 2000 scientific work that indicates 98 feet of buffer could have an 80% sediment and nutrient removal. The 2006 BAS Report also discusses SPTH first proposed in 1993. The first mention of SPTH in the WDFW, 2020, Volume 1 is on page 183 in relation to full litter delivery to streams, and then outside of the Columbia Plateau, the document moves to recommending that "The 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." There does not appear to be new science supporting this recommendation outside of the 1993 FEMAT curves. While Fox (2003) identified mean heights, this does not necessarily change the FEMAT curves or buffer widths selected.

Table 2. Public Comments that were not incorporated into proposed amendments

Summary of Public Comment	Rationale
WDFW and Futurewise: SCC 30.62A.010 - Add under (b) "VII. State priority habitats and areas associated with state priority species defined and listed by the Washington Department of Fish and Wildlife in the Priority Habitats and Species List, as amended. VIII. Riparian Management Zones as defined by SCC ___"	No proposed changes as FWHCAs in SCC include "primary association of critical species" which the county defines in SCC 30.91P.290 and SCC 30.91C.370. The County's obligation is to consult WDFW and the DNR. See Table 1 above.

Snoqualmie Indian Tribe, WDFW, and Futurewise provided similar comments on this topic - SCC 30.62A.230 Table 1: In reviewing the current scientific literature for volume 1, we found 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. ... Non-fish-bearing streams: • support a unique community of aquatic and riparian obligate wildlife; • provide movement corridors for wildlife... • provision fish-bearing streams with matter and energy; and • provide cool water to downstream reaches. The State of Washington Department of Fish and Wildlife has developed new recommendations for protecting riparian areas. "Under WAC 365-190-130(4)(b), the [State of Washington] Department [of Fish and Wildlife]'s priority species habitat information is considered best available science."4 We recommend that the County use the State of Washington Department of Fish and Wildlife's Riparian Management Zone Checklist for Critical Areas Ordinances A Technical Assistance Tool – April 20235 to analyze and update the critical areas ordinance. The State of Washington Department of Fish and Wildlife's Riparian Management Zone Checklist for Critical Areas Ordinances – Addendum A Technical Assistance Tool – August 2023 identifies provisions the county can use to update the critical areas regulations.	Staff believe the intent of these comments is to 1) indicate that there should not be different buffers for fish-bearing vs non-fish-bearing streams as currently exist in code, and 2) to incorporate the SPTH methodology for RMZ (instead of buffer) width. This would create a case-by-case system instead of buffers based on stream Type. Type F waters are defined within Table 1 (SCC 30.62A.230), along with Type Np and Type Ns in line with WAC definitions. The 2006 BAS Report discusses this issue, "Some aquatic areas have no fish or fish-bearing potential. For example, Latterell et al. (2003) found that absent impassable barriers, salmonids were rarely found in small streams at gradients greater than 22 percent. In some cases, small streams originating as spring seeps go underground before making a surface connection with a fish-bearing aquatic area. In other situations, lakes and ponds having no surface connection to a fish-bearing stream or have waters that are unsuitable for fish (e.g., bogs are too acidic). Regardless, isolated or otherwise fishless isolated waters can be used extensively by other animals, especially amphibians and macroinvertebrates (e.g., stoneflies) for breeding, rearing, or refuge (Muchow and Richardson 2000). When they disappear due to infiltration, their waters can contribute to local aquifers that ultimately supply fish-bearing waters with cool, clean groundwater. Thus, fishless and isolated waters can function as habitat for non-fish species and indirectly provide for the water quality and hydrologic functioning of waters with fish." The information on this topic within WDFW, 2020, Volume 1 does not appear to provide new information on this topic, and the current codes consider this information. While there has been some new science (notably within the pollutant removal value and function of riparian areas (or buffers per SCC)) the results do not deviate from the BAS included within the 2006 County BAS Report. For instance, 2008 through 2014 scientific work displays that 80% efficacy of removal can be provided by approximately 62 feet, and 90% with approximately 96 feet (Volume 1 page 143), and the 2006 Report cites 2000 scientific work that indicates 98 feet of buffer could have an 80% sediment and nutrient removal. The 2006 BAS report also discusses SPTH first proposed in 1993. The first mention of SPTH in the Volume 1 is on page 183 in relation to full litter delivery to streams, and then outside of the Columbia Plateau, the document moves to recommending that "The 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." There does not appear to be new science supporting this recommendation outside of the 1993 FEMAT curves. While Fox (2003) identified mean heights, this does not necessarily change the FEMAT curves or buffer widths selected.
WDFW: SCC 30.62A.320 Table 2a: Suggest site specific conditions determine RMZ widths. SPTH200. At minimum a RMZ width of 100 feet is needed to achieve the pollution removal function.	The county has determined that the BAS utilized to determine the buffer widths for streams, lakes, and marine waters is adequately reviewed and included within the county's 2006 BAS Report. The site potential tree height methodology is based on soil data and processes that have not been updated since before 2006. There are a range of widths provided by the science and within the WDFW, 2020, Volume II report for the protection of each value and function to be protected within chapter 30.62A SCC. The buffer widths selected by the county in 2006 remain in line with the BAS.
Ecology: SCC 30.62A.320 Table 2b: **standard buffers represent moderate level land use intensity and include uses that are not defined as high or low intensity." Ecology's guidance on land use intensity recommends a residential density of less than 1 du/acre as moderate intensity. The residence, its typical appurtenances, infrastructure (well, septic), access roads and driveways, associated cleared areas, all constitute substantial alterations in the landscape. What information did the county use to determine the definitions of high, moderate, and low and what is the threshold for moderate intensity land use?	Within existing SCC, high intensity land uses include 4 du/acre or more and low intensity does not include residential land uses, moderate land uses therefore includes residential development that is less than 4 du/acre. This language has existed in the code since 2006, and the County argues it still incorporates BAS. The 2009 *Managing for Biodiversity in Developing Areas* provides Table 2.3 that labels rural densities as 1 du /80 acres to 1 du / 5 acres, suburban densities as ranging between 1 du / 2.5 acre through 4 du/acre, and then urban densities as more than that. In particular, the column labeled med/high suburban ranges between 1 du/acre to 4 du/acre. As a result, the County argues that high intensity land use is anything 4 du / acre or higher and moderate density land use is anything less than that. This is reflected in current code.
MBA: Repealed SCC 30.62A.320(1)(f): The elimination of buffer reductions for fencing and tracts undermine ability to create more housing	Amendments to the buffer reduction allowances reflect a policy choice that is supported by Ecology guidance. Separate tracts: The County reevaluated this buffer reduction allowance and determined there is no discernable benefit to the protection of the critical area functions and values when located in a separate tract to justify the buffer reduction. Fencing: The County is proposing amendments supported by Ecology guidance to require fencing in many cases that are eligible for buffer reductions as an incentive to fence under the current code. Continuing to allow a buffer reduction for fencing is not consistent with the proposed fencing requirements.
MBA: SCC 30.62A.320(1)(g)(i)(E): There is no updated best available science (BAS) cited to support the recommendation to limit buffer averaging to the outer 25% of a wetland. We fail to	The County proposed updates to the buffer averaging requirements for wetlands are to align with Ecology's guidance on this type of flexibility using a moderate risk approach. Ecology 2022 guidance states that, "The buffer recommendations contained herein are based on a moderate-risk approach. In this document, risk is addressed by tailoring the degree of

see any updated BAS since 2018 after which Snohomish County's critical areas regulations were upheld as valid	protection to several factors the scientific literature says are important. The widths recommended in this guidance were selected from the middle of the range of buffers suggested in the literature. In combination with other strategies like limiting buffer reductions, buffer averaging, and exemptions, it represents a moderate-risk approach to determining buffer widths."
Ecology: SCC 30.62A.320(1)(g)(ii): Ecology's recommended buffer widths begin with the assumption that the buffers are well-vegetated with species appropriate to the ecoregion. If the buffer does not consist of vegetation adequate to provide the necessary protection, then either the buffer area should be planted or the buffer width should be increased. Allowing a reduction for enhancing the buffer would result in a buffer width that is less than what wetland science indicates is necessary to protect wetland functions. We recommend removing this provision.	The County is not proposing to amend the definition of buffer or the option to reduce buffer widths where buffer enhancement is proposed and appropriate. These provisions have been codified since 2007, they are consistent with the GMA's mandate to preserve existing critical area functions and values, and their validity has been upheld by the GMHB. Review of BAS has not identified any new science that must be considered. Current code provides that enhancement reductions are only permitted where a project proponent demonstrates the reduced buffer as enhanced will not result in a net loss of buffer functions and values. Staff has proposed other changes to the buffer reduction options to remove separate tract reductions and fencing reductions and clarify that buffer averaging and buffer enhancement reductions may not be used in combination.
MBA: Repealed SCC 30.62A.510(g): The elimination of BMP wetlands except for Category IV less than 4,000 square feet undermine ability to create more housing.	Ecology guidance for this proposed amendment references USACE documents from 2010 and 2008.

COMPLIANCE WITH STATE LAW

Critical Areas

Washington state defines five types of critical areas within the RCW 36.70A.030 including wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas. RCW 36.70A.060 requires that the county adopt development regulations that protect these critical areas, and review these development regulations when adopting the periodic update to the comprehensive plan. The periodic review of the comprehensive plan and the critical areas regulations update are both due by December 31, 2024. Pursuant to WAC 365-190-080, the county must utilize the BAS when developing policies and regulations to protect critical areas and give special consideration to the protection of anadromous fisheries. The proposed amendments to the CAR of Snohomish County comply with the state laws surrounding the protection of critical areas. The county collected and reviewed BAS since the last major CAR update in 2015 (Attachment B) and proposed amendments in line with this science while giving special consideration to anadromous fish and the guidance of state agencies. In particular, the Department of Commerce created a checklist to help jurisdictions complete their CAR update consistent with state law and BAS. Attachment H is this checklist filled in with Snohomish County's responses.

It is also important to note that WAC 365-196-830 requires that the county adopt regulations to protect critical areas, it does not require that the county adopt regulations to restore degraded critical areas. WAC 365-196-830(3) states, "'Protection' in this context means preservation of the functions and values of the natural environment, or to safeguard the public from hazards to health and safety." (8)(a) goes on to state that counties must assure no net loss of functions and values. No net loss of functions and values is a stated goal of the CAR within existing code, and proposed amendments emphasize this with the inclusion of this phrase in various locations throughout Chapter 30.62A SCC. Proposed amendments also include recognition of new BAS to better protect critical areas, for instance with the increase in mitigation ratios for enhancement of buffers and the inclusion of rehabilitation as well as a credit-debit method for mitigation. Further, watershed scale science has progressed to where federal rules and state guidance no longer recommend onsite mitigation in all cases, and the proposed amendments incorporate this changing view. The proposed amendments are also consistent with changes to state law since 2015. For instance, the County's obligation is to consult with WDFW and DNR related to habitat and species of local importance. "Must" consult changed from "should" consult in 2023 within WAC 365-190-130, and as a result proposed amendments to SCC 30.62A.470 include WDFW and DNR as criteria for designation.

Growth Management Act

The Growth Management Act (GMA) planning goals adopted in RCW 36.70A.020 guide the development and adoption of comprehensive plans and development regulations. The goals are not priority-listed. In particular, the GMA goals guide the policies in the Snohomish County's GMA Comprehensive Plan (GMACP) and require consistency between the GMACP and implementing development regulations. Table 3 identifies the reasonably related GMA planning goals listed in RCW 36.70A.020, and describes how the proposed code amendments are consistent with and advance those goals.

Table 3 Compliance with GMA Planning Goals

GMA Planning Goal	Finding
GMA Goal 7: Permits. Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.	Many of the amendments are proposed to ensure consistent review of applications. They will help create fair treatment as well as predictability.

GMA Planning Goal	Finding
GMA Goal 10. Environment. Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.	The goal of CAR is protection of critical areas that provide layered ecological functions and value to Snohomish County. The amendments proposed are focused on better incorporating BAS and thereby better protecting critical areas and the environment.

COMPLIANCE WITH THE MULTI-COUNTY PLANNING POLICIES

Multi-County Planning Policies (MPPs) within Vision 2050 "provide for coordination and consistency among the metropolitan counties sharing common borders and related regional issues as required by RCW 36.70A.100, and, in order to ensure consistency, the directive policies of the MPPs need to have a binding effect" (Summit-Waller Community Association, et al, v Pierce County). Table 4 identifies the reasonably related MPPs within Vision 2050 and describes how the proposed CAR amendments are consistent with and advance those goals.

Table 4 Compliance with MPPs

MPP	Finding
MPP-En-5: Locate development in a manner that minimizes impacts to natural features. Promote the use of innovative environmentally sensitive development practices, including design, materials, construction, and on-going maintenance.	CAR amendments require no net loss of critical areas and require mitigation of any impacts to critical areas.
MPP-En-6: Use the best information available at all levels of planning, especially scientific information, when establishing and implementing environmental standards established by any level of government.	The CAR amendments are based on the BAS available to county staff.
MPP-En-11: Designate, protect, and enhance significant open spaces, natural resources, and critical areas through mechanisms, such as the review and comment of countywide planning policies and local plans and provisions.	The CAR review and update ensures that critical areas are protected in line with BAS.
MPP-DP-40: Protect and enhance significant open spaces, natural resources, and critical areas	The CAR review and update ensures that critical areas are protected in line with BAS. Amendments also specifically call out conservation and preservation projects as minor development that is not required to further mitigate impacts. This could encourage more protection and conservation projects.

COMPLIANCE WITH THE COUNTYWIDE PLANNING POLICIES

Countywide Planning Policies (CPPs) establish a countywide framework for developing and adopting county, city, and town comprehensive plans. The role of the CPPs is to coordinate comprehensive plans of jurisdictions in the same county in regard to regional issues and issues affecting common borders (RCW 36.70A.100). Table 5 identifies the reasonably related CPPs and describes how the proposed CAR amendments are consistent with and advance those goals.

Table 5 Compliance with CPPs

CPP	Finding
CPP DP-33: Jurisdictions should minimize the adverse impacts on resource lands and critical areas from new developments through the use of environmentally sensitive development and land use practices.	CAR amendments require no net loss of critical areas and require mitigation of any impacts to critical areas.
CPP Env-1: All jurisdictions shall protect and enhance natural ecosystems through their comprehensive plans, development regulations, capital facilities programs, and management practices. Jurisdictions should work collaboratively, employing integrated and interdisciplinary approaches, to consider regional and countywide strategies and assessments, as well as best available qualitative and quantitative information, in formulating plans and regulations that are specific to their community.	The CAR amendments are based on the BAS available to county staff.
CPP Env-5: The County and cities should work with neighboring jurisdictions and tribes to identify and protect significant open space areas, natural resources, and critical areas through appropriate local policies, regulations or other mechanisms such as public acquisition, easements, voluntary agreements, supporting the efforts of conservation organizations, and other best practices.	The CAR review and update ensures that critical areas are protected in line with BAS. Amendments also specifically call out conservation and preservation projects as minor development that is not required to further mitigate impacts. This could encourage more protection and conservation projects.

COMPLIANCE WITH THE SNOHOMISH COUNTY COMPREHENSIVE PLAN

The proposed code amendments will better achieve, comply with, and implement the policies identified in Table 6 contained in the County's GMACP.

Table 6 Compliance with the Comprehensive Plan

GMACP Policy	Finding
LU Policy 5.A.8: Natural features, open space and critical areas shall be preserved to enhance neighborhood identity.	CAR amendments are proposed to consider and protect critical areas in urban and rural areas alike.
LU Objective 6.B: Encourage land use activities and development intensities that protect the character of rural areas, avoid interference with resource land uses, minimize impacts upon critical areas, and allow for future expansion of UGAs. (See the resource sections of the land use element for protection of resource lands and the natural environment element for protection of critical areas.)	
ED Policy 2.A.3: To ensure timeliness, responsiveness, and increased efficiency, the county shall develop and maintain a program of periodic review of the	Proposed amendments include those to streamline the permitting process by providing clarity and specificity about what is required at

GMACP Policy	Finding
permitting process to eliminate unnecessary administrative procedures that do not respond to legal requirements for public review and citizen input.	submittal. Such as the proposed amendment to Chapter 30.43C SCC that lists the need for applicants to provide a habitat assessment.
Goal NE 3: Comply with the requirements of state, federal and local laws for protecting and managing critical areas, shorelines, and water.	The proposed amendments aim to comply with state, federal, and local laws as well as offer flexibility in site design and innovative solutions. Amendments to Part 500 of Chapter 30.62A SCC for instance, provide more clarity around what constitutes a reasonable use and those within SCC 30.62A.350 maintain the ability for applicants to utilize innovative design.
NE Policy 3.A.1: The county shall designate and protect critical areas including fish and wildlife habitat conservation areas, wetlands, critical aquifer recharge areas, frequently flooded areas and geologically hazardous areas and include best available science in the development of programs, policies and regulations relating to critical areas.	
NE Policy 3.A.2: The county shall establish development regulations that offer flexibility in site design to accommodate innovative solutions for critical area protection where site constraints or critical area characteristics warrant use of a creative approach. Flexibilities may be considered on a site-by-site basis. Examples of innovative options include but are not limited to buffer width averaging, on- or off-site enhancement or restoration projects, use of best management practices, or a combination of creative solutions.	
NE Objective 3.B: Designate and protect fish and wildlife habitat conservation areas and wetlands pursuant to the Growth Management Act.	
NE Objective 3.C: Designate and protect critical aquifer recharge areas pursuant to the Growth Management Act.	
NE Objective 3.D: Designate and protect frequently flooded areas pursuant to the Growth Management Act.	
Objective NE 3.E: Designate and protect geologic hazard areas pursuant to the Growth Management Act.	

ENVIRONMENTAL REVIEW

A State Environmental Policy Act (SEPA) Determination is required for the proposed code amendments. A SEPA Determination will be issued in April of 2024.

NOTIFICATION OF STATE AGENCIES

Pursuant to RCW 36.70A.106, a notice of intent to adopt the proposed regulations and standards will be transmitted to the Washington State Department of Commerce in April of 2024.

STAFF RECOMMENDATION:

Staff recommends approval of the proposed code amendments along with the findings contained in this staff report.

ACTION REQUESTED

The Planning Commission is requested to hold a public hearing, consider the proposed code amendments, and provide a recommendation to the County Council. The Planning Commission can recommend approval of the amendments and findings within the staff report as proposed or modified, deny the proposal, or amend the proposal with appropriate findings.

cc: Ken Klein, Executive Director
Mike McCrary, PDS Director
David Killingstad, PDS Manager
Michael Dobesh, PDS Manager
Ryan Countryman, Legislative Analyst

Attachments

Attachment A: Annotated Bibliography of BAS (Part I and II)
Attachment B: Proposed Amendments to Chapter 30.62A SCC
Attachment C: Proposed Amendments to Chapter 30.62B SCC
Attachment D: Proposed Amendments to Chapter 30.62C SCC
Attachment E: Proposed Amendments to Chapter 30.43C SCC
Attachment F: Proposed Amendments to Chapter 30.86 SCC
Attachment G: Proposed Amendments to Subtitle 30.9 SCC
Attachment H: Department of Commerce Critical Area Checklist

SNOHOMISH COUNTY COUNCIL
EXHIBIT # 2.0090
FILE ORD 24-097

Snohomish County

SNOHOMISH COUNTY PLANNING COMMISSION

June 27, 2024

Snohomish County Council
County Administration Building
3000 Rockefeller Avenue, M/S 609
Everett, WA 98201-4046

SUBJECT: Planning Commission recommendation on proposed code amendments to Critical Area Regulations

Dear Snohomish County Council:

On behalf of the Snohomish County Planning Commission, I am forwarding our recommendation to amend the critical area regulations chapters 30.62A, 30.62B, 30.62C, 30.43, and 30.86 of the Snohomish County Code (SCC), as well as SCC 30.91A.250, 30.91C.340, 30.91C.370, and 30.91Q.020. The Planning Commission had a briefing on this topic on April 23, 2024, conducted a public hearing on May 28, 2024, and concluded deliberations on June 25, 2024.

The proposed code amendments update the critical area regulations of Snohomish County utilizing best available science and guidance from the public as well as federal and state agencies.

There were 31 written comments received by the Planning Commission from the public prior to the October 27th hearing, and three members of the public commented at the public hearing.

PLANNING COMMISSION RECOMMENDATION

At the June 25, 2024, Planning Commission meeting, Vice Chair Campbell made a motion, seconded by Commissioner Busteed, recommending APPROVAL of the proposed critical area regulations presented by county staff within the June 11, 2024, Planning Commission deliberations agenda package.

Vice Chair Campbell then made an amendment to the motion that would add language to the proposed SCC 30.62A.465 Designation of species and habitats of local importance. The motion was seconded by Commissioner Busteed. The additional language is underlined:

> "Snohomish County designates the species and habitats of Washington State's Department of Fish and Wildlife's Priority Habitat and Species (PHS) Program as of 2023, and hereinafter amended, located in Snohomish County, and the plants and habitats of Washington State's Department of Natural Resources' (DNR) Natural Heritage Program as of 2021 located in Snohomish County, as species and habitats of local importance."

Vice Chair Campbell made a second amendment to the motion to increase the minimum buffer width for Type Np and Type Ns streams to 100 feet (increased from the existing 50 feet). The motion was seconded by Commissioner Busteed.

Vote (Amendment 1):
6 in favor *(Pedersen, Niemela, Larsen, Campbell, Busteed, Bush)*
4 opposed (*Sievers, Sheldon, Ash, James*)
0 abstentions
Amendment passed

Vote (Amendment 2):
4 in favor *(Busteed, Larsen, Campbell, Pedersen)*
6 opposed (*Ash, James, Niemela, Bush, Sievers, Sheldon*)
0 abstentions
Amendment was not passed

Vote (Motion):
6 in favor *(Pedersen, Niemela, Larsen, Campbell, Busteed, Bush)*
4 opposed (*Sievers, Sheldon, Ash, James*)
0 abstentions
Motion passed

The recommendation presented to the County Council within this motion was made following the close of the deliberations and after due consideration of information presented and is based on the findings and conclusions presented in the April 9, 2024, staff report.

During the public hearing and continued deliberations, the Planning Commission discussed the trade-offs associated with critical areas at length. Commissioners expressed concern for both the protection of the natural environment, as well as the creation of new housing for the region's growing population. While the Planning Commissioners opted to not put forth an amendment on the topic, some members wished to express concern about the removal of flexible buffer options related to fencing, separate tracts, and enhancement in exchange for width reductions. The Planning Commission expressed a desire for the County Council to continue this discussion and consider how to create flexibility for developers when buildable land is removed due to the presence of critical areas.

Respectfully submitted,

Robert W Larsen
Robert W Larsen (Jul 17, 2024 07:53 PDT)

SNOHOMISH COUNTY PLANNING COMMISSION
Robert Larsen, Chairman

cc: Dave Somers, Snohomish County Executive
Micheal McCrary, Director, Planning and Development Services

Executive/Council Action Form (ECAF)

ITEM TITLE:
..Title
Ordinance 24-097, relating to the Critical Area Regulations Update pursuant to the Growth Management Act, amending Snohomish County Code Chapters 30.62A Wetlands and Fish and Wildlife Habitat Conservation Areas, 30.62B Geologically Hazard Areas, 30.62C Critical Aquifer Recharge Areas, 30.43C Flood Hazard Permits, 30.86 Fees, and 30.91 Definitions
..body
DEPARTMENT: Planning and Development Services

ORIGINATOR: Sarah Titcomb

EXECUTIVE RECOMMENDATION: Approved by Ken Klein 10/16/24

PURPOSE: To adopt amendments to the Critical Area Regulations (CAR) within the Snohomish County Code (SCC). The amendments to chapters 30.43C, 30.62A, 30.62B, 30.62C, 30.86, and 30.91 SCC are in compliance with state regulations, will align County code with the best available science (BAS), increase the clarity of the code for the public and staff, and aid in consistent and efficient permit reviews.

BACKGROUND: Snohomish County is mandated by the Growth Management Act (GMA) to review and update its CAR according to a schedule established in RCW 36.70A.130(5), with the next deadline scheduled for December 31, 2024. Under the GMA, a periodic review and update means the County is required to review and make needed amendments to development regulations to ensure internal consistency and compliance with the GMA. The review of critical area regulations under RCW 36.70A.172(1) also requires the inclusion of BAS and special consideration given to anadromous fisheries. The amendments within this ordinance better align the existing codes with the GMA and scientific advances that have occurred since the last major update in 2015 (Amended Ordinance No. 15-034). PDS briefed the Planning Commission on the proposed amendments on April 23, 2024, a public hearing was held on May 28, 2024, and the Planning Commission's deliberations concluded on June 25, 2024. The Planning Commission recommended adoption with an amendment as outlined in their June 27, 2024, recommendation letter.

FISCAL IMPLICATIONS:

EXPEND: FUND, AGY, ORG, ACTY, OBJ, AU	CURRENT YR	2ND YR	1ST 6 YRS
TOTAL			

REVENUE: FUND, AGY, ORG, REV, SOURCE	CURRENT YR	2ND YR	1ST 6 YRS

TOTAL			

DEPARTMENT FISCAL IMPACT NOTES: Click or tap here to enter text.

CONTRACT INFORMATION:

ORIGINAL _____ CONTRACT# _____ AMOUNT _____

AMENDMENT _____ CONTRACT# _____ AMOUNT _____

Contract Period

ORIGINAL START _____ END _____

AMENDMENT START _____ END _____

OTHER DEPARTMENTAL REVIEW/COMMENTS: Reviewed/approved by Risk – Shelia Barker 10/15/24 and Finance – Nathan Kennedy 10/16/24

ECAF: **2024-2646**
RECEIVED: **10/16/2024**

ORDINANCE INTRODUCTION SLIP

SNOHOMISH COUNTY COUNCIL

EXHIBIT # 3.1.003

FILE ORD 24-097

TO: Clerk of the Council

TITLE OF PROPOSED ORDINANCE:

RELATING TO THE CRITICAL AREA REGULATIONS UPDATE PURSUANT TO THE GROWTH MANAGEMENT ACT, AMENDING SNOHOMISH COUNTY CODE CHAPTERS 30.62A WETLANDS AND FISH AND WILDLIFE HABITAT CONSERVATION AREAS, 30.62B GEOLOGICALLY HAZARD AREAS, 30.62C CRITICAL AQUIFER RECHARGE AREAS, 30.43C FLOOD HAZARD PERMITS, 30.86 FEES, AND 30.91 DEFINITIONS

Introduced By:

N Nehring — **10/16/2024**
Councilmember — Date

~~~~~~

Clerk's Action:

Proposed Ordinance No. **24-097**

Assigned to: **Planning and Community Development Committee** Date: **10/22/2024**

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STANDING COMMITTEE RECOMMENDATION FORM

On **12/17/2024**, the Committee considered the Ordinance by X Consensus / ___ Yeas and ___ Nays and made the following recommendation:

X Move to Council to schedule public hearing on: **12/18/2024 GLS**

_____ Other _____

Regular Agenda ✓ **Administrative Matters** _____

Public Hearing Date **1/15/2025** **at** **10:30 am**

N Nehring
Committee Chair

SNOHOMISH COUNTY COUNCIL
EXHIBIT # 3.2.002
FILE ORD 24-097

Critical Area Regulations Update

County Council Briefing

_____, 2024

Terri Strandberg and Sarah Titcomb, PDS

Snohomish County
Planning and Development Services

Agenda

- CAR Refresher
- Proposed Amendments
  - Chapter 30.62A SCC
  - Chapter 30.62B SCC
  - Chapter 30.62C SCC
  - Chapters 30.43C, 30.86, and 30.91 SCC
- Public Engagement

Snohomish County
Planning and Development Services

Critical Areas Defined

Source: Quinn, T., G.F. Wilhere, and K.L. Krueger, technical editors. *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications.* Habitat Program, Washington Department of Fish and Wildlife, Olympia. 2020.

- Five critical areas are defined by Washington State (RCW 36.70A.030(5))
  - **Wetlands** (Chapter 30.62A SCC)
  - Areas with a **critical recharging effect on aquifers** used for potable water (Chapter 30.62C SCC)
  - **Fish and wildlife habitat conservation areas** (Chapter 30.62A SCC)
  - **Frequently flooded areas** (Chapter 30.65 SCC)
  - **Geologically hazardous areas** (Chapter 30.62B SCC)

Snohomish County
Planning and Development Services

Why Update Snohomish County Code?

- RCW 36.70A.060(2): “Each county and city shall adopt development regulations that protect critical …”
- RCW 36.70A.060(3): “Such counties and cities shall review these designations and development regulations when adopting their comprehensive plans … and may alter such designations and development regulations to insure consistency.”
- Snohomish County must complete our update by December 31, 2024.

Snohomish County
Planning and Development Services

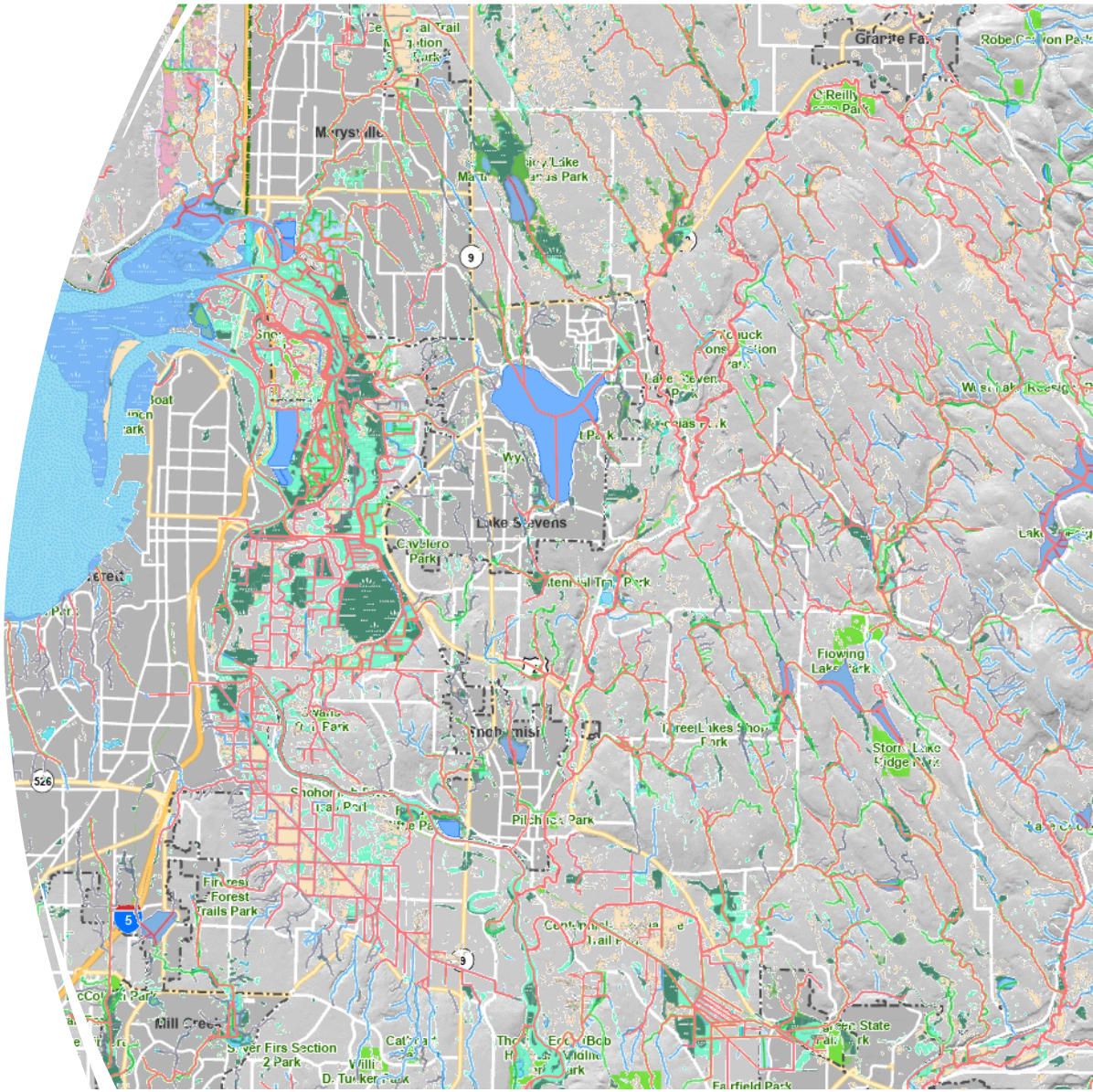
What is required to be updated?

WAC 365-190-080(2): “Counties and cities must include the best available science as described in chapter 365-195 WAC, when designating critical areas and when developing policies and regulations that protect critical areas. Counties and cities must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. Counties and cities are encouraged to also protect both surface and groundwater resources, because these waters often recharge wetlands, streams and lakes.” [also RCW 36.70A.172]

Snohomish County
Planning and Development Services

Chapter 30.62A SCC

Wetlands and Fish and Wildlife Habitat Conservation Areas



Chapter 30.62A SCC Amendments

Part 100 and Part 200

- Minor and housekeeping amendments from staff, state guidance, and BAS

Part 300

- Swap onsite vs offsite mitigation preference for wetland impacts
- Type F stream buffers of 150 feet
- Adding functionally and effectively disconnected buffer exclusions

Snohomish County
Planning and Development Services

Chapter 30.62A SCC Amendments (con.)

Part 300 (con.)

- Clarifying the limit on total new effective impervious surfaces within 300 feet of some waterbodies
- Removing buffer reduction allowance for when critical area protection areas are located within separate tracts and behind fences.
- New column in Table 5 for rehabilitation and increased ratios for enhancement
- Adding credit-debit method of mitigation and advance mitigation as additional options

Source: Hruby, T. & Yahnke, A. *Washington State Wetland Rating System for Western Washington 2014 Update Version 2.0.* October 2014 (Updated July 2023). Ecology publication #23-06-009.

Snohomish County
Planning and Development Services

Chapter 30.62A SCC Amendments (con.)

Part 400

- Add floodplain habitat assessments to SCC 30.62A.460.
- Add SCC 30.62A.465 to codify the species and habitats within WDFW's Priority Habitat and Species (PHS) Program and DNR's Washington Natural Heritage Program as species and habitats of local importance.

Part 500

- Updating what counts as minor development
- Adding square footage limitation for reasonable use

Part 600

- Minor amendments

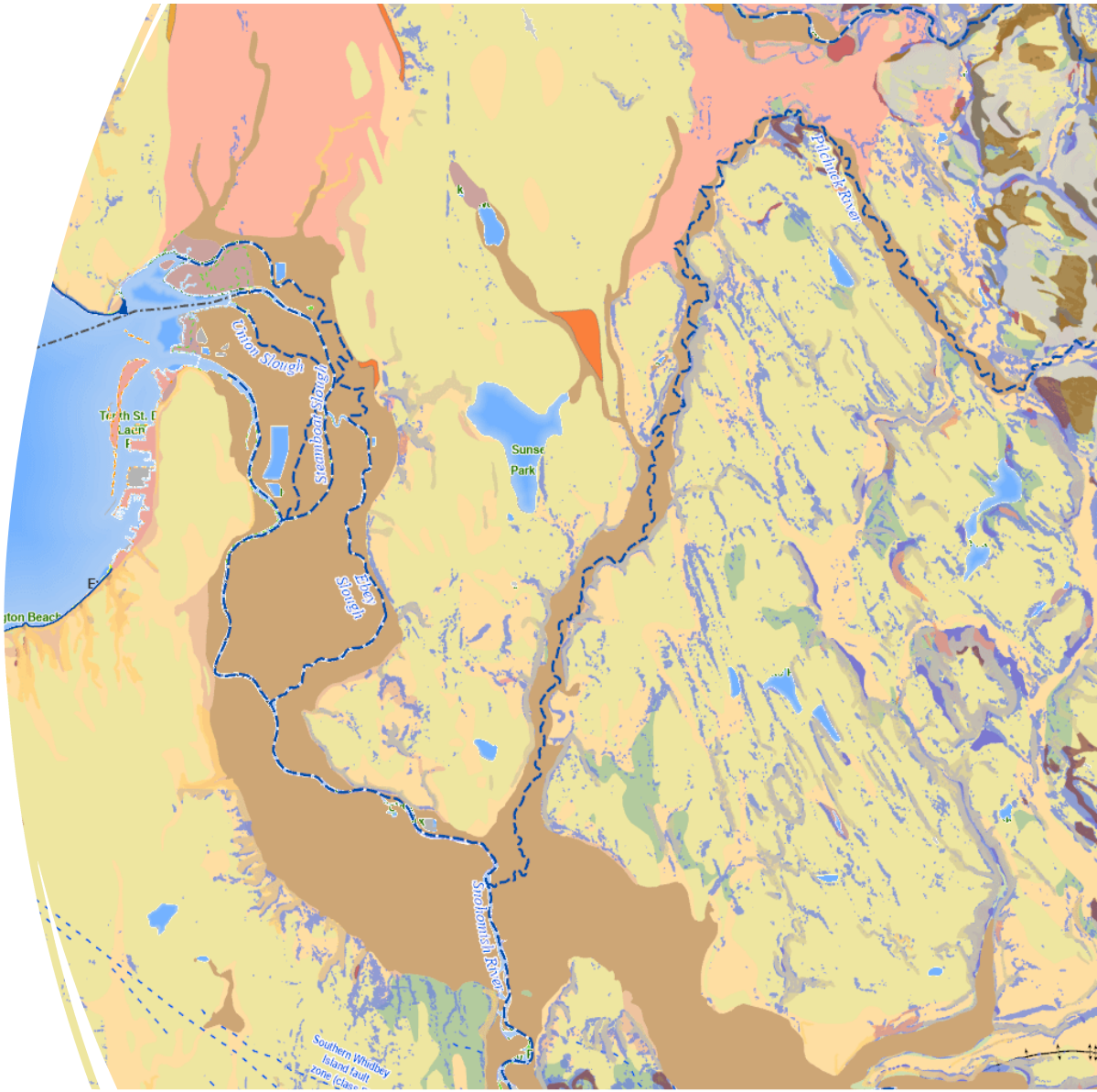
Part 700

- Minor amendments

Snohomish County
Planning and Development Services

Chapter 30.62B SCC

Geologically Hazardous Areas



Chapter 30.62B SCC Amendments

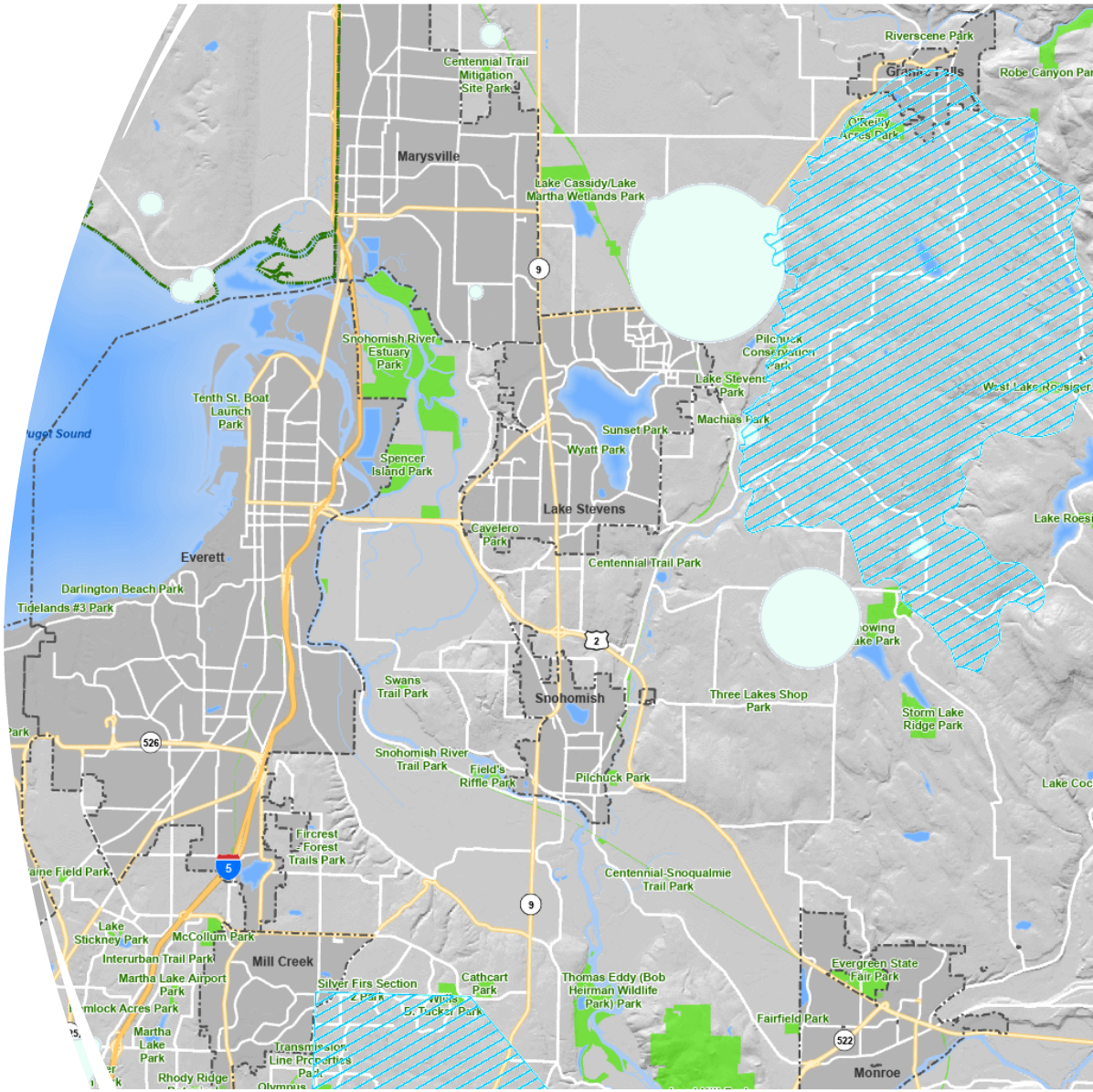
- Correcting an error in intent
- Clarifying how channel migration zones (CMZs) can be determined and adding a potential study method.

Source: Olson et al. *A Method for Delineating Planning-Level Channel Migration Zones.* July 2014. Ecology Publication # 14-06-025

Snohomish County
Planning and Development Services

Chapter 30.62C SCC

Critical Aquifer Recharge Areas



Chapter 30.62C SCC Amendments

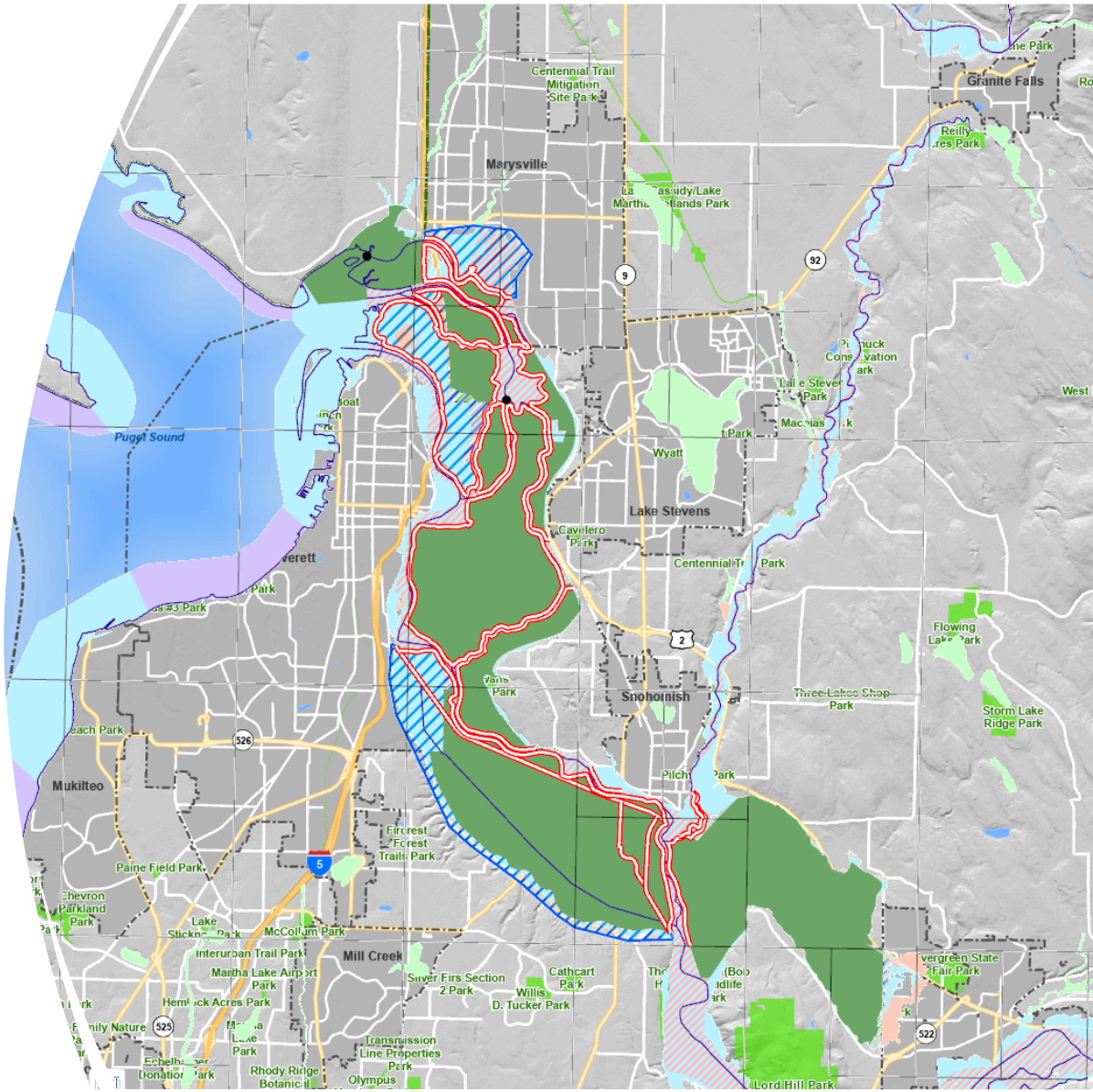
- Expanding designation of CARA to include wellhead protection areas identified for Group A public water systems by qualified professionals.
- Revising criteria for when a hydrogeological report is required.
- Revising when notice to Group A water providers is required.
- Expanding use prohibitions to apply within CARA with both high and medium vulnerability.
- Revising prohibitions and requirements for UIC wells, focusing on stormwater management UICs and location within Group A wellhead protection zones.
- Revising uses and activities subject to special requirements – stormwater UICs

Source: U.S EPA. *When is a Septic System Regulated as a Class V Well?*

Snohomish County
Planning and Development Services

Chapter 30.65 SCC

Special Flood Hazard Areas



Other Chapters Amendments

- Chapter 30.43C SCC – Flood Hazard Permits: habitat assessment and management plan
- Chapter 30.86 SCC – Fees: floodplain habitat assessment
- Definitions: Appurtenance, critical area, critical species, qualified professional, special waste, UIC well, WHPA

Table 30.86.300 Special Flood Hazard Area Permit Fees

FLOOD HAZARD AREA ((~~PERMIT~~)) BASE REVIEW FEE	((~~$1,050~~)) $800
FLOOD HAZARD AREA PERMIT	$250
FLOOD HAZARD AREA VARIANCE	See Table 30.86.230
PRE-APPLICATION CONFERENCE FEE	$480
FLOOD HAZARD AREA DETERMINATION	$300
FLOOD HAZARD PERMIT & FLOOD HAZARD VARIANCE APPLICATION EXTENSION(1)	$500
DENSITY FRINGE EXCEPTION APPLICATION	$500
HABITAT ASSESSMENT AND MANAGEMENT PLAN:	
Single-Family Residential, Duplex, Mobile Home and Appurtenances	$250
All other application types	$720

(1) This fee applies to Flood Hazard Permit and Flood Hazard Variance application extensions pursuant to SCC Table 30.70.140(1).

Snohomish County
Planning and Development Services

Public Engagement

- Collection of Best Available Science (BAS)
- 21-day public comment period for preliminary CAR drafts (January 17 – February 7, 2024)
- Determination of Non-Significance issued May 1, 2024
- Planning Commission process: Briefing on April 23, Hearing on May 28, and Deliberations ended on June 25, 2024

Snohomish County
Planning and Development Services

Questions?

Sarah.Titcomb@snoco.org and Terri.Strandberg@snoco.org

Snohomish County
Planning and Development Services

EXHIBIT 3.2.003

Planning and Community Development Committee – December 17, 2024

Minutes and Video

Hickey, Lisa

From: Titcomb, Sarah
Sent: Tuesday, December 10, 2024 1:43 PM
To: Caleb Kleiman; Strandberg, Terri
Cc: Hickey, Lisa
Subject: RE: Growth Management Act Status - Snohomish County

Good Afternoon,

Thanks for reaching out. The code amendments are currently with the County Council and they may adopt as recommended by the Executive, or adopt with Council amendments. The first County Council briefing of the critical area update regulations (Ordnance 24-097) occurred December 3rd, and a second is scheduled for Tuesday December 17th at 11am. The hybrid meeting is open to the public in person (on the 8th floor of 3000 Rockefeller Ave) or online (via https://zoom.us/j/94846850772). You can also watch a video of the December 3rd presentation here.

The Executive recommended amendments to the critical area chapters of code can be reviewed within the ordinance, and the Council will likely discuss potential further amendments at the December 17th meeting. At the end of the December 17th meeting, the Council will likely schedule the public hearing for the update.

Best,
Sarah

Sarah Titcomb | *Principal Planner*
Snohomish County Planning and Development Services | Long Range Planning Division
3000 Rockefeller Avenue M/S 604 | Everett, WA 98201
425-262-2128 | Sarah.Titcomb@snoco.org
she/her/hers

From: Caleb Kleiman <calebk@Weidner.com>
Sent: Tuesday, December 10, 2024 1:09 PM
To: Strandberg, Terri <terri.strandberg@co.snohomish.wa.us>; Titcomb, Sarah <Sarah.Titcomb@co.snohomish.wa.us>
Subject: Growth Management Act Status - Snohomish County

Hello Sarah and Terri,

I represent a property owner who has vacant land in Snohomish county. The sale of the land has been repeadetly held up due to the NEIS Zone that relates to a nearby creek. We understand that a Growth Management Act is anticipated to be passed this month 12/2024. Do you have an update on whether it will be passed and if this draft is the most up to date: Preliminary-Draft-Chapter-3062A-SCC_1-12-24 (snohomishcountywa.gov)?

We are most concerned about "(d) New effective impervious surface restrictions" at the bottom of page 26 and top of 27 (see below):

(((~~c~~))) (d) New effective impervious surface restrictions:

(i) no new effective impervious surfaces are allowed within the buffer of streams, wetlands, lakes, or marine waters; and

(ii) total new effective impervious surfaces shall be limited to 10 percent within 300 feet of ((:)) any streams or lakes containing salmonids; wetlands containing salmonids; or marine waters containing salmonids, except when:

~~(((A) any streams or lakes containing salmonids;~~

~~(B) wetlands containing salmonids; or~~

~~(C) marine waters containing salmonids.~~))

(A) the new effective impervious surfaces is not within the contributing drainage sub-basin; or

(B) the stormwater flow from the new effective impervious surfaces is functionally and effectively disconnected from the stream, lake, wetland, or marine water containing salmonids.

Let me know!

Thank you,

Caleb Kleiman | Commercial Leasing and Acquisitions
Weidner Apartments Homes
9757 NE Juanita Dr #300, Kirkland, WA 98034
Direct | (425) 250-2960
calebk@weidner.com | weidner.com

Hickey, Lisa

From: bill liderengineering.com <bill@liderengineering.com>
Sent: Saturday, December 14, 2024 2:00 PM
To: Nehring, Nate; Dunn, Megan; Peterson, Strom; Mead, Jared; Low, Sam
Cc: Countryman, Ryan; Hickey, Lisa
Subject: Request to Table Any Action on Ord. 24-097
Attachments: 2024-12-14 Lider Comment Letter on Proposed Buffer Reductions Ord 24-097 FILED.pdf

Importance: High

Follow Up Flag: Follow up
Flag Status: Completed

Prior to taking any action on Ordinance 24-097 at the December 17, 2024 Planning and Community Development Committee meeting, please review and respond to my comments attached.

I respectfully request the County Council to table any action on Ordinance 24-097 until such time that PDS can demonstrate that this action will not adversely affect our wetland ecosystems.

William Lider, PE, CESCL
LIDER ENGINEERING, PLLC
2526 – 205th Place SW
Lynnwood, WA 98036
425-776-0671 Office
206-661-0787 Cell

LIDER ENGINEERING PLLC
Low Impact Development Engineering Resources
Stormwater and Erosion Control Engineering
WILLIAM M LIDER, PE, CESCL

TRANSMITTED BY EMAIL

December 14, 2024

Snohomish County Council:
Nate Nehring Nate.Nehring@snoco.org
Megan Dunn Megan.Dunn@co.snohomish.wa.us
Strom Peterson Strom.Peterson@co.snohomish.wa.us
Jared Mead Jared.Mead@co.snohomish.wa.us
Sam Low Sam.Low@co.snohomish.wa.us

SUBJECT: Planning and Community Development Committee Agenda, Dec. 17, 2024
Proposed Buffer Width Reductions Ordinance 24-097
Request to Table Motion to Move to General Legislative Session on December 18, 2024

Dear Snohomish County Council Members:

I am writing to request that you table any motion to move Ordinance 24-097 to the general legislative session, pending more justification from PDS for its request to reduce wetland buffer widths to 50% of the minimum buffer widths currently required under County Code.

Prior to moving forward to any hearing on the proposed buffer width reduction scheme, PDS must provide evidence in the form of studies to demonstrate that a 50% reduction in wetland buffer widths will not adversely affect the wetlands in Snohomish County.

This ordinance will allow developers to cut in half the minimum required buffer width currently required under County Code by simply putting up a split rail fence that will provide no benefit to a wetland or provide any mitigation to a wetland from an adjacent development, parking lot, or other intensive development. Maintaining buffer widths is necessary to provide water quality protection to wetlands, provide wildlife habitat, and help reduce the ecotone impacts on wetlands. Removal the vegetation and tree shading provided by wetland buffers to expand development areas will significantly harm our remaining wetlands while boosting developer's profits.

PDS only announced the ordinance at 3:30 on Friday, for the Council to vote in committee on Tuesday to the Wednesday legislative hearing set a time to hold a public hearing. The problem is that PDS has done absolutely no investigations or studies as to what impact this ordinance will have on our wetlands. PDS should be required to use Best Available Science (BAS), to determine Best management Practices (BMP's). The Council should require PDS to demonstrate how this ordinance will minimize and mitigate adverse impacts to the functions and values of wetland areas, ***before*** even proposing this ordinance change or setting a public hearing date. It is premature to

LIDER ENGINEERING PLLC 2526 - 205th Place SW, Lynnwood, WA 98036 office 425-776-0671 cell 206-661-0787 bill@liderengineering.com

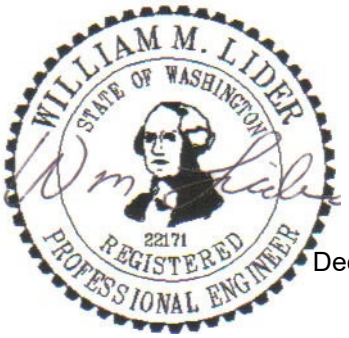
even hold a hearing until a study is completed and the public has had an opportunity to review it.

PDS has provided no documentation or any study showing how a simply putting up a fence will not harm a wetland and allow the 50% reduction in buffer width desired by PDS. For instance, Ecology and PDS have no regulations on how to treat or even what discharge levels are acceptable and appropriate for 6-ppdq, a toxic substance from tire wear that is lethal to salmonids. Filtering stormwater runoff through a wetland buffer has a "polishing" effect to help reduce toxic runoff from parking lots and streets that is not controlled by current stormwater water quality BMP's.

Please do not move forward on Ordinance 24-097 until such time as the impacts to our wetlands are understood by a 50% critical areas buffer reduction.

Thank you for your consideration of these comments.

Respectfully submitted,
LIDER ENGINEERING, PLLC



December 14, 2024

William Lider, PE, CESCL
Principal Engineer

cc: Ryan Countryman Ryan.Countryman@co.snohomish.wa.us
Lisa Hickey, Lisa.Hickey@co.snohomish.wa.us

LIDER ENGINEERING PLLC 2526 - 205th Place SW, Lynnwood, WA 98036 office 425-776-0671 cell 206-661-0787 bill@liderengineering.com

Hickey, Lisa

From: Kate Lunceford <kurlykate888@gmail.com>
Sent: Monday, December 16, 2024 9:38 AM
To: Contact Council
Subject: Please protect our rivers and streams - don't reduce critical area buffers

Dear Council,

I'm very concerned about the proposed amendments to ORDINANCE NO. 24-097. Please reject these amendments and instead adopt improved buffer provisions to better protect rivers and streams and wetlands.

I support these comments made to you by Futurewise

Reject Amendment 1:

- We support deleting existing SCC 30.62A.320(1)(f) on page 52 of 106 as the Staff and Planning Commission recommend. Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.
- Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is **inconsistent with buffer science and state agency recommendations.**
- Allowing the development of non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet without replacing the lost functions will continue the loss of wetland functions and values including fish and wildlife habitat.

Please give our rivers and streams a chance to do their work to mitigate flooding and habitat deterioration.

Sincerely,
Kate Lunceford
Bothell

--

"Do the best you can until you know better. Then when you know better, do better." Maya Angelou

Hickey, Lisa

From: Julie Martinson <jmartinson8@gmail.com>
Sent: Monday, December 16, 2024 4:41 PM
To: Contact Council
Subject: Public Comment: Vote NO on Ordinance 24-097!

To: Snohomish County Councilmembers

I'm writing to urge you to advocate against and vote against Ord. 24-097. I've been working for many years to protect our trees, water and natural resources at the local, state & national levels. As a lifelong member of The Nature Conservancy, I'm especially dedicated to preserving wetlands, waterways, shorelines and riparian areas.

Wetlands, in particular, act as sponges that remediate at times of extreme rainfall to absorb the excess and filter/clean the water of urban and road residues before releasing the excess water to flow more cleanly through rivers and streams that have abundant biological lifeforms, including salmon. There are so many creatures who depend on these natural phenomena that change throughout each season. Wetlands cannot be artificially remediated with a sterile pond.

While I realize that we all need more housing in our County, we must not allow the reduction of our wetlands and the buffer that they need to do the multiple jobs of their ecoservices in our lives, including reducing flooding events. They serve to provide a complex set of benefits that cannot be rebuilt!

Here is The Nature Conservancy's article on how wetlands help us:
https://www.nature.org/en-us/about-us/where-we-work/united-states/iowa/stories-in-iowa/power-of-wetlands/

Please protect our wetlands from development intrusion. Vote NO on Ord. 24-097.
Thank you.

Julie Martinson
2303 6th St
Everett, WA 98201-1114

Hickey, Lisa

From: lynseyjewel@aol.com
Sent: Monday, December 16, 2024 9:31 PM
To: Contact Council
Cc: Countryman, Ryan; Hickey, Lisa; Nehring, Nate; Dunn, Megan; Peterson, Strom; Mead, Jared; Low, Sam
Subject: Submitting public comment to REJECT the Amendments to 24-097 - Please Protect Our Wetlands!

Follow Up Flag: Follow up
Flag Status: Completed

Hello Snohomish County Council Planning and Community Development Committee,

I am a river swimmer, a steward, a Streamkeeper-in-training and a loving auntie. When I am swimming in PNW rivers is when I feel most alive. My relationship to natural waters, and by extension the essence of life itself, is the closest thing I have to religion. So for me, swimming in the river is a form of worship, and an act of love.

Our precious rivers have brought so much enrichment and healing into my life that I know I must do everything in my power to protect them. It is what inspired me to dedicate my life to environmental advocacy in the PNW.

My youngest niece (who also lives in Snohomish County-actually all six of my nieces and nephews do) is now 4 years old. This last summer (2024), with her auntie there to guide her, she swam in the Skykomish River for the first time. I knew when I saw the wonder and love in her eyes, when I heard the joy in her laughter, that she could feel it too. The river is precious, she is kin, she is life. WATER IS LIFE.

Snohomish County is home to my most beloved people, and my most beloved rivers... the Snohomish, the Stillaguamish, the Snoqualmie, and the Skykomish. Their health and wellbeing is inextricably connected to health and wellbeing of Snohomish County wetlands, forests, and watersheds, and also, to the environmental laws and regulations that *you* help to implement and enforce.

After receiving notice from the Sno-Isle Sierra Club and the Climate Alliance of Snohomish County of the purposed amendments to ordinance No. 24-097, threatening wetland buffers in Snohomish County, I am writing to the council as a private citizen advocating for **stronger** protections for wetlands. Now is not a time to weaken environmental protections. Now is a time to take decisive action for a future worth loving!

I stand with the Snohomish County Climate Alliance, and am echoing the stance of FutureWise in strongly encouraging the council and this committee to "reject the amendments in discussion draft amendment sheet No. 1 to ordinance No. 24-097 and instead adopt improved buffer provisions to better protect rivers

and streams and wetlands." And until January, when a hearing date is set, I will be encouraging and mobilizing my community to stand with us.

If our rivers are the arteries that keep life's sacred heart beating on this planet, than our wetlands are like kidneys, removing toxins from the flow and keeping our waters healthy! They are essential to our watersheds, and the ecological health of our entire county and region! They are essential to my health and wellbeing, and of those I love. It is all interconnected and must be treated as such. We must come together to work towards a better, more loving, and more interconnected future.

For my beloved rivers and my beloved nieces and nephews, for all the children of Snohomish County, for a livable future on this planet, and for my own beating, loving heart...I am implore you to please do the right thing for our community and our planet, and **do everything in your power to protect our rivers, wetlands and watersheds!**

With great power, comes great responsibility.
Thank you for your service.

In sincerity & stewardship,
Lynsey Jewell Sandum

Hickey, Lisa

From: Tim Trohimovich <Tim@futurewise.org>
Sent: Monday, December 16, 2024 12:18 PM
To: Contact Council; 2023Update@snoco.org, SCD-; Hickey, Lisa; Nehring, Nate; Dunn, Megan; Peterson, Strom; Mead, Jared; Low, Sam
Cc: Kristin Kelly; Brooke Frickleton
Subject: Comments Discussion Draft Amendment Sheet No. 1 to Ord No. 24-097, the CAR Update
Attachments: 2024-12-16 Futurewise Coms on CAR Update Amendment 1.pdf

Dear Council Members and Staff:

Enclosed please find Futurewise's comments on the amendments in Discussion Draft Amendment Sheet No. 1 to Ordinance No. 24-097, the Critical Areas Regulations Update. If you need anything else, please let me know.

Thank you for considering our comments.

Tim Trohimovich, AICP (he/him)
Director of Planning & Law

Futurewise
1201 3rd Ave #2200, Seattle, WA 98101
(206) 343-0681
tim@futurewise.org
futurewise.org
connect:

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1201 3rd Ave Suite 2200, Seattle, Washington 98101
(206) 343-0681
futurewise.org

December 16, 2024

The Honorable Jared Mead, Chair
Snohomish County Council
Robert J. Drewel Building
Eighth floor
3000 Rockefeller Ave., M/S 609
Everett, Washington 98201

Dear Chair Mead and Councilmembers Dunn, Low, Nehring, and Peterson:

Subject: Comments on the amendments in Discussion Draft Amendment Sheet No. 1 to Ordinance No. 24-097, the Critical Areas Regulations Update.
Send via email to: contact.council@snoco.org; 2024update@snoco.org; Lisa.Hickey@co.snohomish.wa.us; Nate.Nehring@snoco.org; megan.dunn@snoco.org; Strom.Peterson@snoco.org; jared.mead@snoco.org; Sam.Low@co.snohomish.wa.us

Thank you for the opportunity to comment on the amendments in Discussion Draft Amendment Sheet No. 1 to Ordinance No. 24-097. Futurewise urges the County Council to reject the amendments in Discussion Draft Amendment Sheet No. 1 to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. We provide more detail on this recommendation 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 Snohomish County.

The Amendment Sheet No. 1 amendment on pages 1 and 2 reinstating existing SCC 30.62A.320(1)(f) as (g) is inconsistent with best available science (BAS).[1]

[1] Critical areas regulations must include best available science. RCW 36.70A.172(1). Critical areas regulations must also at least "protect[s] critical areas by maintaining existing conditions." *Swinomish Indian Tribal Cmty. v. W. Washington Growth Mgmt. Hearings Bd.*, 161 Wn.2d 415, 430, 166 P.3d 1198, 1206 (2007), as corrected (Nov. 28, 2007), as corrected (Apr. 3, 2008).

We support deleting existing SCC 30.62A.320(1)(f) on page 52 of 106 as the Staff and Planning Commission recommend. Placing critical areas and buffers and building and maintain fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions. For example, the Washington State Department of Ecology's current *Wetland Guidance for Critical Areas Ordinance (CAO) Updates* recommends that buffers be fenced, signed, and placed in separate non buildable tracts, but Ecology's guidance does not recommend that buffers be reduced when those measures are required.[2] Futurewise testified before the Planning Commission that the stream and river buffers in the proposed critical areas update are too narrow.[3] Including these reductions will make them even less effective for protecting critical areas.

The Amendment Sheet No. 1 buffer averaging amendments on page 2 allowing 50 percent reductions are contrary to best available science (BAS).

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations. This amendment should not be adopted and buffer averaging should not result in buffers narrower than 75 percent of the required buffer at any point.[4] Again, changing the Staff and Planning Commission recommendation will harm wetlands and fish and wildlife habitats. Futurewise, consistent with the state agency recommendations and the

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[2] Washington State Department of Ecology Shorelands and Environmental Assistance Program, *Wetland Guidance for Critical Areas Ordinance (CAO) Updates: Western and Eastern Washington* p. 25, p. 33, p. A-19 (Olympia, Wash.: Oct. 2022, Publication #22-06-014) last accessed on Dec. 16, 2024, at: https://apps.ecology.wa.gov/publications/SummaryPages/2206014.html and available at the link on page 4 of this letter with the filename: "2206014.pdf."

[3] 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 July 2020) last accessed on Dec. 16, 2024, at: https://wdfw.wa.gov/publications/01987/ and at the link on page 4 of this letter with the filename: "wdfw01987.pdf." This report was peer-reviewed. *Id.* at pp. 11 – 12. See also Terra Rentz, Amy Windrope, Keith Folkerts, and Jeff Azerrad, technical editors, *Riparian Ecosystems, Volume 2: Management Recommendations* pp. 16 – 26 (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia, WA: Dec. 2020) last accessed on Dec. 16, 2024, at: https://wdfw.wa.gov/sites/default/files/publications/01988/wdfw01988.pdf and at the link on page 4 of this letter with the filename: "wdfw01988.pdf."

[4] Washington State Department of Ecology Shorelands and Environmental Assistance Program, *Wetland Guidance for Critical Areas Ordinance (CAO) Updates: Western and Eastern Washington* p. 25, p. A-10 (Olympia, Wash.: Oct. 2022, Publication #22-06-014).

best available science, recommends that buffer averaging require the buffer to be no narrower than 75 percent of the required buffer for both riparian buffers and wetland buffers.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science (BAS).

The Washington State Academy of Sciences concluded that "[c]learly, there have been net losses of species and habitats in Washington. The committee is reasonably confident that without policy changes, these types of losses will continue and will contribute to the disappearance of distinct habitats and ecosystem types from Washington's terrestrial and aquatic landscapes.[5] One of the reasons for the continuing lose of species and habitats is that some county and city critical areas regulations allow the destruction of wetlands without requiring the mitigation of those impacts.

The Amendment Sheet No. 1 amendments on pages 2 and 3 will allow the development of non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet without replacing the lost functions. This will continue the loss of wetland functions and values including fish and wildlife habitat violating the Growth Management Act.[6] For this reason, the State Department of Ecology writes: "Impacts to small wetlands are NOT exempt from the requirement to provide compensatory mitigation—regardless of the wetlands' size, location, or category."[7] Unfortunately, these amendments will exempt wetland fills and drainage from the requirement to mitigation these impacts contrary to Ecology's

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[5] Washington State Academy of Sciences, *Assessment of No Net Loss and Recommendations for Net Ecological Gain Metrics, Indicators, and Monitoring: Prepared for the Washington State Department of Fish and Wildlife* p. 4 (June 2022) in Washington Department of Fish and Wildlife (WDFW), *Net Ecological Gain Standard Proviso Summary Report* (Dec. 2022) bold in the original last accessed on Dec. 16, 2024, at: https://wdfw.wa.gov/sites/default/files/publications/02357/wdfw02357.pdf and at the link on page 4 of this letter with the filename: "wdfw02357.pdf."

[6] *Swinomish Indian Tribal Cmty. v. W. Washington Growth Mgmt. Hearings Bd.*, 161 Wn.2d 415, 430, 166 P.3d 1198, 1206 (2007).

[7] Washington State Department of Ecology Shorelands and Environmental Assistance Program, Wetland Guidance for Critical Areas Ordinance (CAO) Updates: Western and Eastern Washington p. 14 (Olympia, Wash.: Oct. 2022, Publication #22-06-014) bold in the original.

recommendations. Again, like the other amendments, this amendment is contrary to the current best available science and state agency recommendations.

While we would prefer the exemptions for wetland destruction be removed from the critical areas regulations, the Staff and Planning Commission recommendations at least require mitigation for wetland impacts.[8] This is closer to what the best available science requires.

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

Very Truly Yours,

Tim Trohimovich, AICP
Director of Planning and Law

Enclosures included at the following link:

https://futurewiseorg.sharepoint.com/:f:/g/EixvOXbyD-1Phisa47wTvuIB_UIVmIZEV8wrNv8GxmfOww?e=ncVh6H

Please add the following documents to the record of the Critical Areas Regulations Update:

Washington State Department of Ecology Shorelands and Environmental Assistance Program, *Wetland Guidance for Critical Areas Ordinance (CAO) Updates: Western and Eastern Washington* (Olympia, Wash.: Oct. 2022, Publication #22-06-014) at the link on page 4 of this letter with the filename: "2206014.pdf."

Timothy Quinn, George F. Wilhere, and Kirk L. Krueger, technical editors, *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications* (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia, WA: Updated July 2020) at the link on page 4 of this letter with the filename: "wdfw01987.pdf."

[8] See proposed Ordinance No. 24-097 SCC 30.62A.510(3)(g), (4), and (5) on pages 79 – 80 of 106.

Terra Rentz, Amy Windrope, Keith Folkerts, and Jeff Azerrad, technical editors, *Riparian Ecosystems, Volume 2: Management Recommendations* (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia, WA: Dec. 2020) at the link on page 4 of this letter with the filename: "wdfw01987.pdf."

Terra Rentz, Amy Windrope, Keith Folkerts, and Jeff Azerrad, technical editors, *Riparian Ecosystems, Volume 2: Management Recommendations* pp. 16 – 26 (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia, WA: Dec. 2020) at the link on page 4 of this letter with the filename: "wdfw01988.pdf."

Washington State Academy of Sciences, *Assessment of No Net Loss and Recommendations for Net Ecological Gain Metrics, Indicators, and Monitoring: Prepared for the Washington State Department of Fish and Wildlife* (June 2022) in Washington Department of Fish and Wildlife (WDFW), *Net Ecological Gain Standard Proviso Summary Report* (Dec. 2022)at the link on page 4 of this letter with the filename: "wdfw02357.pdf."

Hickey, Lisa

From: Debbie Wetzel <debbieleewetzel@gmail.com>
Sent: Monday, December 16, 2024 3:01 PM
To: Hickey, Lisa
Cc: SCO-Council; Anderson, Karen; Barnett, Tom; Bill Lider; Canola, Eileen; Chelminiak, John; Clark, Jeanne; Cummings, Jason; Dorsey, Brian; Dugan, Joshua; edmonds.envir.council@gmail.com; Green, Brian; Guadamud, Rebecca; Guinn, Sandy; Harper, Lacey; Hart, Alethea; Harvey, Kandace; Herald, The; Herald, The; Ingraham, Larry; Jensen, Anna; Juckett, Jennifer; Kasting, Justin; Kelly, Tiffany; Kisielius, Laura; Klein, Dick; Kleitsch, David; Kraft-Klehm, Jessica; Larson, Jay; Liddell, Beth; Lunceford, Kate; McCormick, Tom; McCrary, Michael; Morrier, Gerald; Heidi K. S. Napolitino; Nichols, Mayor Carla; Otten, Matthew; Mike Pattison; Reiner, Dale; Richmond, Christina; Schmidt, Mike; Sherman, Steve; Slusser, Frank; Snohomish Tribune; SnoP.O.R.C.H.; Strandberg, Terri; Taylor, Sarah; Tonnessen, Bjorn; Weikel, Gary; Wendel, Peggy; White, Richard A; Wilson, Chellcie; Woodard, Jim; Barrett, Clarissa; Cook, J; Craig, Richard; Crossman, Kenneth; Curry, Todd; David Toyer; Ehrlichman, Tom; Eshleman, Lynn; Fjelstad, Wayne; Flora, Courtney; Flynn, Daniel; Helseth, Grady; Jones, Angie; Kelly, Bob; Killingstad, David; Kristin Kelly; Landgraff, Nickolis; Leif, William; Liu, Annie; McManus, Regina; Moore, Megan; Omlid, Ralph; Peterson, Kim; Rogers, Nancy; Saponaro, Michael; Skotdal, Andrew; SSH-Security Marshal; Thayer, Vicki; Toevs, Shawn; Toy, Stephen; Tran, Tong; Wigestrand, Katherine; Wright, Stephanie; Zelaya, Luis
Subject: Re: December 17, 2024 Planning and Community Development Committee Agenda

Follow Up Flag: Follow up
Flag Status: Completed

Please table Ordinance 24-097 regarding wetland and critical areas.

No studies have been done by the County to show the adverse effects that will occur from reducing wetland buffers by 50% damaging our overall environment and eco-systems.

Please educate yourself, PDS, and the Council more fully on the negative effects this Ordinance would have: salmon spawning areas damaged, flooding of properties, and roads from the impact of having lessened the amount of wetland areas, and much more.

We must stop this inordinate push to favor developers while destroying existing neighborhoods, flora and fauna, and infrastructure that can be sorely affected by this planned 50% reduction.

It seems that the Council threw us a bone (after all, we are the barking dogs) with the Urban Tree Canopy since they now want to destroy the wetland properties any which way possible to appease big developers. This is seriously getting out-of-hand, and it is obvious that the Master Builders/Toyer Strategies (they lobby you guys like you're big-wigs at high-level government), and big developers own our County, not the residents. Or should I say an Oligarch? The definition is a small group of people who are in power, to the detriment of the greater good. As the saying goes: If the shoe fits....

The corruption within the County is finally reaching public exposure. This is evidenced by the mass exodus of top-level employees within PDS, since they refuse to do the bidding of developers. When is the Council going to do the right thing for the taxpaying real people that live here, not the big companies that destroy everything in their wake in the name of money? Local residents don't have big money lobbyists that wine and dine you to do our bidding—we rely on you, our elected officials to do your jobs in the best interests of the citizens, just like you all promised when you ran for your position.

Do not pass Ordinance 24-097 forward to the Council. Please do the right thing for the people, for once.

Thank you.

I remain,

Deborah Wetzel

206-261-0941

|

Hickey, Lisa

From: greg ferguson <gghhff@me.com>
Sent: Tuesday, December 17, 2024 8:34 AM
To: Contact Council; Nehring, Nate; Dunn, Megan; Peterson, Strom; Mead, Jared; Low, Sam
Subject: Proposal to cut wetland buffer sizes

Snohomish County Planning and Community Development Committee,

Cut the size of wetland buffers in half? NO!
Require that wetlands be fenced? YES!
A large buffer is critical to the functioning of wetlands. They shield wetlands against pollutants like fertilizers, pesticides, tire dust, heavy metals, and oil. Their size is an important part of their ability to provide this protection.
As stated in Wetlands in Washington State – Volume 2: Guidance for Protecting and Managing Wetlands, Washington Department of Ecology, 2005:
The literature confirms that for improving water quality (e.g., sediment removal and nutrient uptake) there is a non-linear relationship between the width of the buffer and increased effectiveness in water quality improvement. Sediment removal and nutrient uptake are provided at the greatest rates within the immediate outer portions of a buffer (nearest the source of sediment/nutrient), with increasingly larger widths of buffers required to obtain measurable increases in those functions beyond this initial removal.
We need **larger** buffers, not smaller ones (150 to 200 ft buffers remove 80% of pollutants). A proposal like cutting buffer sizes in half requires that a thorough environmental impact statement be prepared and evaluated through a public process.
Also according to Ecology, fences can help prevent the decline of wetlands. Snohomish County code should **require** the construction of fences around all wetlands unless it can be demonstrated that they do not preserve wetland function.

Regards,
Greg Ferguson, PE
Sierra Club
Edmonds Steward
Climate Advisory Board

Hickey, Lisa

From: Whittaker, Kara A (DFW) <Kara.Whittaker@dfw.wa.gov>
Sent: Tuesday, December 17, 2024 11:13 AM
To: Hickey, Lisa
Cc: Stapleton, Timothy R (DFW); Krueger, Morgan (DFW)
Subject: WDFW public comments on proposed amendments to the Critical Areas Regulations
Attachments: 12-17-2024 WDFW comments re. Action 2 CAR amendment 1.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Dear Ms. Hickey,

Please distribute the attached copy of my oral public comments on proposed amendments to the Critical Areas Regulations to the full county council.

Thank you,

Kara

Kara Whittaker, PhD
(she/her)
Land Use Conservation & Policy Section Manager
Ecosystem Services Division

1111 Washington St. SE, Olympia, WA 98501 (physical)
PO Box 43200, Olympia WA 98504-3200 (mailing)
Kara.Whittaker@dfw.wa.gov
360-338-5757

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
Mailing Address: PO Box 43200, Olympia, WA 98504-3200 · 360 902-2200 · TDD 360 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street, Olympia, WA

December 17, 2024

WDFW Testimony to the Snohomish County Council Planning and Community Development Committee

RE: Proposed Amendment to Ordinance 24-097, relating to the Critical Area Regulations Update pursuant to the Growth Management Act, amending Snohomish County Code Chapters 30.62A Wetlands and Fish and Wildlife Habitat Conservation Areas

Good morning, Chair Nehring and Committee Members. My name is Kara Whittaker, and I am a Section Manager for the Washington Department of Fish and Wildlife (WDFW) in Olympia. I lead our agency's land use planning teams to fulfill our mission to preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. I am here today to express our concerns regarding proposed Amendment 1 to the Critical Areas Regulations under Action item 2 (ordinance 24-097).

Our primary concern regards the buffer reduction allowances for aquatic critical areas. Amendment 1 would maintain rather than strike **buffer width reductions of 15-25% without a critical area study or mitigation plan requirement**. Establishing a fence and/or separate tract does not protect nor replace the ecological functions and values provided by stream buffers. Such buffer reductions are likely to degrade water quality, increase erosion and flooding impacts, and compromise fish and wildlife habitat, placing both streams and people at greater risk.

We strongly advise against adopting code that permits reductions to riparian buffer widths without application of the full mitigation sequence.[1] Because adopting Amendment 1 will result in a net loss of critical area values and functions,[2] **we recommend retaining the full deletion of subsection (f) on page 52 of the proposed ordinance.**

Furthermore, this amendment appears to be unnecessary to maintain capacity for growth inside of Urban Growth Areas. The county's buildable lands report concluded that **the county already has adequate land capacity to accommodate the adopted 2035 population, housing, and employment growth targets**.

Our overarching concern with the proposed Critical Areas Regulations is one we have expressed to the county at least twice before,[3] that is, the **standard required stream buffers** in Table 2a. First, in our best available science synthesis, we found no support for establishing buffer widths based on fish presence. Second, we recommend Riparian Management Zone widths based on their ability to provide full riparian function. **At a minimum, a**

[1] WAC 197-11-768
[2] WAC 365-196-830(4)
[3] In written comments (dated Feb. 6, 2024) and in oral testimony to the Planning Commission (May 28, 2024).

width of 100 feet is needed to achieve the pollution removal function, though the other riparian functions may be compromised even at this minimum width. We strongly urge the county council to reconsider our concerns about the proposed standard stream buffer widths, **especially for the non-fish bearing (Type N) streams at 50 feet, or only half the minimum recommended width**.

Thank you for this opportunity, and we would be happy to provide further technical assistance to you and your staff as needed.

Kara Whittaker, PhD

Land Use Conservation & Policy Section Manager

Kara.Whittaker@dfw.wa.gov

Hickey, Lisa

From: Titcomb, Sarah
Sent: Tuesday, December 31, 2024 9:56 AM
To: Caleb Kleiman; Strandberg, Terri
Cc: Hickey, Lisa; Chris Foster
Subject: RE: Growth Management Act Status - Snohomish County

Good Morning,

Thanks for reaching out. The December 17th briefing of the critical area regulations ordinance occurred, and the Council scheduled a public hearing on January 15, 2025. You can follow the progress of the code amendments, and review the Council amendment, here. The public hearing will be a hybrid meeting with the ability for the public to listen in and comment online via zoom or in person at the Robert J. Drewel building.

Best,
Sarah

Sarah Titcomb | *Principal Planner*
Snohomish County Planning and Development Services | Long Range Planning Division
3000 Rockefeller Avenue M/S 604 | Everett, WA 98201
425-262-2128 | Sarah.Titcomb@snoco.org
she/her/hers

From: Caleb Kleiman <calebk@Weidner.com>
Sent: Tuesday, December 31, 2024 9:22 AM
To: Titcomb, Sarah <Sarah.Titcomb@co.snohomish.wa.us>; Strandberg, Terri <terri.strandberg@co.snohomish.wa.us>
Cc: Hickey, Lisa <Lisa.Hickey@co.snohomish.wa.us>; Chris Foster <theprimestreetway@gmail.com>
Subject: RE: Growth Management Act Status - Snohomish County

Hi Sarah,

Are there any updates on these code amendments? Have the changes I mention in the email below, related to New effective impervious surface restrictions, been adopted?

The updates in the ordinance link attached were as follows:

(ii) total new effective impervious surfaces shall be limited to 10 percent within 300 feet of ((~~:~~)) any streams or lakes containing salmonids, wetlands containing salmonids, or marine waters containing salmonids, except when:

(A) ((~~any streams or lakes containing salmonids;~~

~~(B) wetlands containing salmonids; or~~

~~(C) marine waters containing salmonids.~~)) the new effective impervious surfaces are not within a flow path to the ordinary highwater mark of a stream, lake, wetland, or marine waters containing salmonids; or

(B) the flow path from the new effective impervious surfaces is functionally and effectively disconnected from the stream, lake, wetland, or marine water containing salmonids by an existing public or private road, or other legally established development that is to continue its legally established use.

Thank you,

Caleb Kleiman | Commercial Leasing and Acquisitions
Weidner Apartments Homes
9757 NE Juanita Dr #300, Kirkland, WA 98034
Direct | (425) 250-2960
calebk@weidner.com | weidner.com

What Matters to You, Matters to Us

From: Titcomb, Sarah <Sarah.Titcomb@co.snohomish.wa.us>
Sent: Tuesday, December 10, 2024 1:43 PM
To: Caleb Kleiman <calebk@Weidner.com>; Strandberg, Terri <terri.strandberg@co.snohomish.wa.us>
Cc: Hickey, Lisa <Lisa.Hickey@co.snohomish.wa.us>
Subject: RE: Growth Management Act Status - Snohomish County

Good Afternoon,

Thanks for reaching out. The code amendments are currently with the County Council and they may adopt as recommended by the Executive, or adopt with Council amendments. The first County Council briefing of the critical area update regulations (Ordnance 24-097) occurred December 3rd, and a second is scheduled for Tuesday December 17th at 11am. The hybrid meeting is open to the public in person (on the 8th floor of 3000 Rockefeller Ave) or online (via https://zoom.us/j/94846850772). You can also watch a video of the December 3rd presentation here.

The Executive recommended amendments to the critical area chapters of code can be reviewed within the ordinance, and the Council will likely discuss potential further amendments at the December 17th meeting. At the end of the December 17th meeting, the Council will likely schedule the public hearing for the update.

Best,
Sarah

Sarah Titcomb | *Principal Planner*
Snohomish County Planning and Development Services | Long Range Planning Division
3000 Rockefeller Avenue M/S 604 | Everett, WA 98201
425-262-2128 | Sarah.Titcomb@snoco.org
she/her/hers

From: Caleb Kleiman <calebk@Weidner.com>
Sent: Tuesday, December 10, 2024 1:09 PM
To: Strandberg, Terri <terri.strandberg@co.snohomish.wa.us>; Titcomb, Sarah <Sarah.Titcomb@co.snohomish.wa.us>
Subject: Growth Management Act Status - Snohomish County

Hello Sarah and Terri,

I represent a property owner who has vacant land in Snohomish county. The sale of the land has been repeadetly held up due to the NEIS Zone that relates to a nearby creek. We understand that a Growth Management Act is anticipated to be passed this month 12/2024. Do you have an update on whether it will be passed and if this draft is the most up to date: Preliminary-Draft-Chapter-3062A-SCC_1-12-24 (snohomishcountywa.gov)?

We are most concerned about "(d) New effective impervious surface restrictions" at the bottom of page 26 and top of 27 (see below):

(((~~c~~))) (d) New effective impervious surface restrictions:

(i) no new effective impervious surfaces are allowed within the buffer of streams, wetlands, lakes, or marine waters; and

(ii) total new effective impervious surfaces shall be limited to 10 percent within 300 feet of ((:)) any streams or lakes containing salmonids; wetlands containing salmonids; or marine waters containing salmonids, except when:

(((~~(A) any streams or lakes containing salmonids;~~

~~(B) wetlands containing salmonids; or~~

~~(C) marine waters containing salmonids.~~)))

(A) the new effective impervious surfaces is not within the contributing drainage sub-basin; or

(B) the stormwater flow from the new effective impervious surfaces is functionally and effectively disconnected from the stream, lake, wetland, or marine water containing salmonids.

Let me know!

Thank you,

Caleb Kleiman | Commercial Leasing and Acquisitions
Weidner Apartments Homes
9757 NE Juanita Dr #300, Kirkland, WA 98034
Direct | (425) 250-2960
calebk@weidner.com | weidner.com

What Matters to You, Matters to Us

Hickey, Lisa

From: kim.baumgartner@frontier.com
Sent: Wednesday, January 1, 2025 11:28 AM
To: Contact Council
Subject: Reject amendments to Ordinance 24-097. Protect rivers, streams, and wetlands

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097

Sincerely,

Kim Henry Baumgartner
Phone: 425-343-3717

Hickey, Lisa

From: Vonita Francisco <vonitaf@gmail.com>
Sent: Wednesday, January 1, 2025 9:29 AM
To: Contact Council
Subject: Protect our wetlands and waterways

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097

Sincerely,
Vonita Francsico
Mountlake Terrace, WA 98043

Hickey, Lisa

From: Sally Lider <sally.lider@gmail.com>
Sent: Wednesday, January 1, 2025 10:56 AM
To: Contact Council
Subject: Reject amendments to Ordinance No. 24-097

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097

Sincerely,

Sally Lider

Hickey, Lisa

From: Carol <54.cmac@gmail.com>
Sent: Wednesday, January 1, 2025 2:14 AM
To: Contact Council
Subject: Protect Wetlands and Waterways in Snohomish County

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097

Sincerely,
Carol McMahon

Sent from my iPhone

Hickey, Lisa

From: Brooks Bennett <brooksbennett79@gmail.com>
Sent: Thursday, January 2, 2025 9:33 AM
To: Contact Council
Subject: Protect our wetlands and waterways

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097

Sincerely,

Brooks Bennett
21110 46th Ave SE
Bothell WA 98021
brooksbennett79@gmail.com
======

Hickey, Lisa

From: Kathryn Lewandowsky <skyranch12805@gmail.com>
Sent: Thursday, January 2, 2025 9:06 AM
To: Contact Council
Subject: Critical area protections

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097. This is not the time to go backwards as we make decisions that will affect the land we are blessed to care for for centuries!

Sincerely,
Kathryn Lewandowsky, BSN, RN

Sent from my iPhone

Hickey, Lisa

From: Titcomb, Sarah
Sent: Friday, January 3, 2025 3:18 PM
To: Eco, Debbie; Hickey, Lisa
Subject: FW: Everett Herald, BAS critical areas regulations
Attachments: 2.0071.pdf; Index of Records - 2024 CAR Update.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Good Afternoon,

Copied below is new public correspondence related to the CAR update. I will keep you in the loop if I hear more from Eliza.

Best,
Sarah

Sarah Titcomb | *Principal Planner*
Snohomish County Planning and Development Services | Long Range Planning Division
3000 Rockefeller Avenue M/S 604 | Everett, WA 98201
425-262-2128 | Sarah.Titcomb@snoco.org
she/her/hers

From: Titcomb, Sarah
Sent: Friday, January 3, 2025 2:31 PM
To: Eliza Aronson <eliza.aronson@heraldnet.com>; Lambert, Jacob <Jacob.Lambert@co.snohomish.wa.us>; Strandberg, Terri <terri.strandberg@co.snohomish.wa.us>
Subject: RE: Everett Herald, BAS critical areas regulations

Good Afternoon,

Thank you for reaching out. I have attached to this email the Index of Record for the critical areas regulations update ordinance that was sent to County Council (Ordinance No. 24-097), as well as exhibit 2.0071 that includes an annotated bibliography of best available science. The staff report and ordinance provide further context for the annotated bibliography. The complete Index of Records can be accessed through County Council staff, although please let me know if you are looking for a specific exhibit.

I have also added Jacob Lambert, PDS's communication specialist, and Terri Strandberg, the other critical areas update project manager, to this email in case they can help answer any additional questions.

Best Regards,
Sarah

Sarah Titcomb | *Principal Planner*

Snohomish County Planning and Development Services | Long Range Planning Division
3000 Rockefeller Avenue M/S 604 | Everett, WA 98201
425-262-2128 | Sarah.Titcomb@snoco.org
she/her/hers

From: Eliza Aronson <eliza.aronson@heraldnet.com>
Sent: Friday, January 3, 2025 12:25 PM
To: Titcomb, Sarah <Sarah.Titcomb@co.snohomish.wa.us>
Subject: Everett Herald, BAS critical areas regulations

Hi Sarah,

I'm wondering where I could find the best available science reports currently being used to develop critical area regulations. Could you please send the reports to me or let me know how I can access them?

Thanks!

Eliza Aronson

Environment Reporter

The Daily Herald | 1800 41st Street, S-300 | Everett, WA 98203
425-339-3434 | www.heraldnet.com

Attachment A

Annotated Bibliography of BAS (Part I and II)

I. Summary of BAS and other key resources – February 2024

	Bibliography	Record Type	Abstract	Subject Key Words	Notes / Links
1	United States District Court, Western District of Washington at Seattle. Northwest Environmental Advocates vs. U.S. Department of Commerce, Case No. C16-1866-JCC, Stipulated Order of Dismissal, Jan 8, 2021.	Legal filing	Washington shall complete agricultural BMP guidance to control nonpoint source pollution, known as the Clean Water Guidance for Agriculture ("guidance"), implement Washington's nonpoint source management program as set forth below, and submit to EPA updates to Washington's nonpoint source management program ("319 Plan Updates"), as follows: a. Washington shall complete the development of five chapters of the agricultural BMP guidance, consistent with 33 U.S.C. § 1329(b)(2)(A)– (B), including the chapter that addresses riparian areas on agricultural lands, on or before December 31, 2022 but in any event in time to be included in the 319 Plan Update. For the BMPs involving riparian areas, Washington shall establish necessary widths, and base riparian buffer plant composition guidance on mature vegetation communities composed of native species and consistent with ecological site potential, to meet water quality standards to the extent possible	Agriculture BMPs Riparian areas, widths Buffers Water quality Clean Water Act (CWA) 319 Plan Update Farm Bureau Cattlemen's Association Non-point pollution	
2	Pailthorp, Bellamy. KNKX Radio. *Settlement agreement says state must protect endangered species from polluted runoff*. Jan 13, 2021. www.knkx.org	Transcript of radio broadcast.	The agreement lays out a timeline for the state Department of Ecology to regulate farming practices and implement other specific rules, such as replanting trees in streamside buffers that keep water cool, in consultation with the EPA and the U.S. Fish and Wildlife Service. It specifically requires: • Ecology to complete guidance to farmers on actions that are necessary to protect water quality. • Ecology to identify the width of streamside buffers that are needed on farmland to protect cold water needed by salmon. • Ecology to specify the farm practices that are needed to meet water pollution clean-up plans. • Ecology to identify where it is taking actions to control polluted runoff and report those actions to EPA. • EPA to review a new Washington statewide nonpoint pollution plan in 2022. • EPA to submit its proposed approval of Washington's nonpoint plan to expert federal fish and wildlife agencies to assess its impact on threatened and endangered species.	Agriculture BMPs Riparian areas, widths Buffers Water quality Clean Water Act (CWA) 319 Plan Update Farm Bureau Cattlemen's Association Non-point pollution	
3	Washington State Department of Ecology, Water Quality & Environment Assessment Programs, Focus On: *Voluntary Clean Water Act Guidance for Agriculture,* Pub. No. 20-10-009 November 2022	Fact Sheet	The Federal Clean Water Act requires Ecology to develop and maintain guidance on best management practices to protect water quality. If an operation uses practices consistent with our BMPs in this guidance and appropriate to their farm-specific water quality concerns, then we will presume water quality is being adequately protected at that operation. Agricultural producers are not required to use the specific BMPs recommended in the guidance; we recognize there is no one-size-fits-all solutions for protecting water quality**. This guidance is intended to present a suite of options for producers to help ensure compliance with state water quality laws, which are not voluntary.** Additional solutions are considered on a site-by-site basis.	Clean Water Act (CWA) Agriculture	
4	Washington State Department of Ecology, Water Quality Program, *Voluntary Clean Water Act Guidance for Agriculture, Chapter 6, Sediment Control: Soil Stabilization and Sediment Capture (Structural),* Pub. No. 20-10-008c, Dec. 2022.	Ecy publication	This chapter focuses primarily on the capture of sediment from moderate to large flows of concentrated runoff occurring on cropland, orchards, pastures, and rangelands. It does not apply to animal confinement/ heavy use areas or structures, which are addressed by other BMP chapters. For the purpose of this guidance, a moderate to large flow of concentrated runoff is one which exceeds roughly 0.5 cubic feet per second (cfs). In this regard, the guidance focuses on the use and effectiveness of sediment basins, which are a primary structural means of capturing sediment transported by moderate to large concentrated runoff flows. Other types of structural practices	Clean Water Act (CWA) Sediment control Erosion Sediment basin photos Agriculture	Voluntary Clean Water Guidance for Agriculture Advisory Group - Washington State Department of Ecology

	Bibliography	Record Type	Abstract	Subject Key Words	Notes / Links
			that can be used to control sediment transport (such as terraces, level spreaders, and silt fences) may be addressed in future guidance. A water and sediment control basin (WaSCoB) is an earthen embankment or a combination ridge and channel constructed across the slope of a minor drainageway (i.e., a raised earthen barrier constructed parallel to the topographic contour in order to impede the flow of downhill runoff) (NRCS, 2018). A sediment control basin (SCoB) is a structure created in a drainageway through excavation or building an embankment (NRCS, 2017).		
5	Washington State Department of Ecology, Water Quality Program, *Voluntary Clean Water Act Guidance for Agriculture, Chapter 12, Riparian Areas and Surface Water Protection,* Pub. No. 20-10-008b, Dec. 2022.	Ecy publication	The goal for this chapter is to develop guidelines for riparian management zones that, when implemented, will help restore and protect Washington State waters from agricultural pollution and facilitate the achievement of water quality standards. This guidance focuses of the effectiveness of riparian buffers at protecting water quality from agricultural pollutants. RMZ =>215' RMZ Core Zone: The portion of the RMZ which is closest to the streambank, and in which agricultural uses do not occur. This zone consists of self-sustaining, native, perennial vegetation communities where there is no pollutant generation. RMZ Inner Zone: The portion of the RMZ located between the core zone and the outer zone. The general purpose of this zone is to maximize infiltration of surface runoff into soils. RMZ Outer Zone: This portion of the RMZ is located between the inner zone and agricultural lands outside of the RMZ. The purpose of the outer zone is to control the generation and transport of pollutants within close proximity of streams.	Clean Water Act (CWA) Riparian Management Zone RMZ BMPs NRCS Agriculture	
6	Washington Geological Survey, *Landslide Hazard Mapping in Washington*, Fact Sheet, June 2022.	Fact Sheet – mapping available	Lidar-based landslide hazard mapping assists land-use planners, emergency managers, public works staff, and those who live and work where landslides could impact their daily lives. Local jurisdictions can make informed decisions about their assets, community safety, and growth management using the best available science.	Landslide Maps, mapping LiDAR	Landslides | WA - DNR
7	Katherine A. Mickelson, Trevor A. Contreras, Mitchell D. Allen, Kara E. Jacobacci, Emilie M. Richard, William N. Gallin, Kara Fisher, and Gabriel Legoretta Paulín. *Landslide Inventory of Portions of Snohomish County, Washington.* WASHINGTON GEOLOGICAL SURVEY Report of Investigations 43, July 2022.	Research article	An updated inventory of landslides was produced by interpreting 1,663 mi2 of lidar data in western Snohomish County. Following published protocols, mapping yielded 6,171 landslides, 7,145 fans, and 1,289 rockfall deposits. Through a review of orthophotos and historical data, 396 recent landslides were identified and mapped as points. High landslide density was noted along Puget Sound bluffs, river corridors, and in upland areas of the Cascade Range. This updated landslide inventory will increase awareness of landslide hazards in western Snohomish County and provide information for planners, emergency managers, public works departments, and those who live or work where landslides could impact their daily lives. Planning—Landslide inventory mapping can identify areas where proposed land use intersects landslide hazards. These areas need additional geotechnical review to ensure that the proposed land use will not be adversely impacted by the landslide hazard(s). Improperly graded slopes and (or) disturbances of sensitive geological materials may contribute to destabilization. Poor surface-water management can reactivate old landslides, affecting not just one home or business but potentially an entire neighborhood.	USGS Department of Natural Resources Washington Geological Survey Landslide LiDAR Maps, mapping	**Kate Mickelson, LEG** Landslide Hazards Program Manager Washington Geological Survey Washington State Department of Natural Resources (DNR) 360.902.1488 www.dnr.wa.gov\landslides

	Bibliography	Record Type	Abstract	Subject Key Words	Notes / Links
8	Alexander Dolcimascolo, Daniel W. Eungard, Corina Allen, Randall J. LeVeque, Loyce M. Adams, Diego Arcas, Vasily V. Titov, Frank I. González, Christopher Moore, Carrie E. Garrison-Laney, and Timothy J. Walsh. *TSUNAMI HAZARD MAPS OF THE PUGET SOUND AND ADJACENT WATERS—MODEL RESULTS FROM AN EXTENDED L1 Mw 9.0 CASCADIA SUBDUCTION ZONE MEGATHRUST EARTHQUAKE SCENARIO.* WASHINGTON GEOLOGICAL SURVEY, Map Series 2021-01, April 2021	Research article, map series (16 map sheets)	The new modeling presented here provides estimates of tsunami inundation extent, inundation depth, current speed, and first wave arrival times above mean high water for Washington's Puget Sound and adjacent interior waterways. Modeling results suggest certain locations would experience inundation depths in excess of 10 feet, and some waterways would experience current speeds in excess of 9 knots. The first tsunami waves generated from the earthquake would reach Whidbey Island within 1 hour and 30 minutes, though the tsunami would arrive at most locations in this study area later, within 2–4 hours of the earthquake	Tsunami Modeling maps	Report and map sheets are located here: S:\Code Dev\CAR\2024 Update\copy_BAS\Post-2006 BAS Documents\GeoHaz\DNR tsunami maps 2021
9	Snohomish county Department of Public Works, Surface Water Management Division, Toni Turner (Project Manager), *Stillaguamish River Comprehensive Flood Hazard Management Plan,* Feb. 2004.	Report	The Stillaguamish River Comprehensive Flood Hazard Management Plan evaluates flood hazards in the Stillaguamish River basin and identifies mitigation opportunities. Recommendations include capital, river planning, forest practices, flood warning and emergency response, and maintenance and monitoring actions.	Flood Stillaguamish Mitigation	
10	John Engel, *Steelhead Landslide Jan. 25, 2006.*	Report	Chronology of events and mitigation efforts associated with the January 25, 2006 landslide at Oso. Photo documentation of slide and response.	Landslide Oso Steelhead Drive	
11	Tetra Tech, *NATURAL HAZARD MITIGATION PLAN UPDATE VOLUME 1: PLANNING-AREA-WIDE ELEMENTS*, Sept. 2010. Executive Summary.	Report	Report prepared for Snohomish County Department of Emergency Management: Snohomish County and a partnership of local governments within the County have developed and maintained a hazard mitigation plan to reduce future loss of life and property resulting from disasters. Hazard mitigation is the use of long- and short-term strategies to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster. It involves strategies such as planning, policy changes, programs, projects, and other activities that can mitigate the impacts of hazards. The responsibility for hazard mitigation lies with many, including private property owners; business and industry; and local, state and federal government. It is impossible to predict exactly when and where disasters will occur or the extent to which they will impact an area, but with careful planning and collaboration among public agencies, stakeholders and citizens, it is possible to minimize losses that disasters can cause.	Hazard Mitigation Recommendations	TOC and Executive Summary
12	Drury, Tracy. *Preliminary design proposal for treatment of the Hazel and Goldbasin Landslides*, Jan. 2000.	Report, Engineering Drawings	Report prepared for U.S. Army Corp. and Stillaguamish Tribe: The proposed treatment of these landslides is a series of Large Wood Debris (LWD) revetments that will eliminate toe cutting of the landslides and prevent failure materials from being immediately transported downstream. The revetments will be similar in structural composition to the Phase I and II Engineered Log Jam (ELJ) projects that have been constructed on the North Fork Stillaguamish (NFS) River. The enclosed document includes preliminary plans for applications at each landslide, project specifications and initial budgets.	Landslide Oso Goldbasin revetments	
13	Drury, Tracy. Steelhead Haven Landslide (Draft), June 19, 2006	Report (draft)	The DRAFT report provides description of conditions and previous landslides as well as discussion of potential extent of future catastrophic slides at this location, identifies objectives and alternative courses of action: no action, stabilize toe of slide, provide storage for landslide materials, protect	Landslide Oso Runout estimate	

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			area equivalent to landslide runout potential (estimated to be 900 feet), floodplain buyout. These alternatives were evaluated based on the objectives and on technical merit.		
14	Tetra Tech, *NATURAL HAZARD MITIGATION PLAN UPDATE VOLUME 1: PLANNING-AREA-WIDE ELEMENTS*, Sept. 2010. Chapter 14: Landslides and Other Mass Movements.	Report	Chapter 14 describes hazard profiles for mass movement events like landslides and sinkholes: slope, load, shock/vibration, water content and groundwater movement, frost action, weathering, vegetation change/removal, and history of past events. Also covered is secondary hazards, climate change impacts and exposure and vulnerability (population, property, critical facilities).	Landslide Risk factors Map	Chapter 14
15	M2 Environmental Services. *Hazel/Gold Basin Landslides: Geomorphic Review Draft Report*. Oct. 18, 1999.	Report	Report discusses the geomorphology and history of the two major slide zones, and looks at the relationship between slide activity and water – precipitation and river flow.	Landslide Oso Goldbasin	
16	Allstadt, Kate. *Seismic Signals generated by the Oso Landslide*. Pacific Northwest Seismic Network summary. Mar. 26, 2014.	Report	The report discusses the seismic signals received at the Jim Creek station: the major slide, a secondary slide 4 minutes later, and several smaller slides continuing for approximately 1 hour. There was a magnitude 1.1 earthquake detected by the PNSN located About 2 km from the Oso slide ± 0.8 km at a depth of 3.9 ± 1.9km on March 10th, 2014 at 21:43 UTC (14:43 local time), twelve days prior to the landslide that has received some attention from the press. However, the shaking from a M1.1 is extremely weak and would not have been enough to trigger the landslide. In the remote case that the M1.1 earthquake (and/or the other small similar quakes) is related to the Oso landslide, the most plausible explanation would be slip related to ongoing slow deformation within the unstable hillslope.	Landslide Oso Seismic Earthquake	
17	Drury, Tracy, GeoEngineers, Inc. Steelhead Haven Landslide Remediation Feasibility Study, 4/26/2001.	Report (final)	Prepared for Stillaguamish Tribe. The FINAL report provides description of conditions and previous landslides as well as discussion of potential extent of future catastrophic slides at this location, identifies objectives and alternative courses of action: no action, stabilize toe of slide, provide storage for landslide materials, protect area equivalent to landslide runout potential (estimated to be 900 feet), floodplain buyout. These alternatives were evaluated based on the objectives and on technical merit.	Landslide Oso Runout estimate.	
18	US Army Corp. Seattle District, *Final Environmental Assessment: Stillaguamish River Ecosystem Restoration*, Puget Sound and Adjacent Waters Authority, Snohomish County, Nov. 2000.	EA Report	This document is the final Environmental Assessment (EA) under NEPA for the recommended basin-wide restoration plan. The proposed Ecosystem Restoration Plan recommends restoration features throughout the Stillaguamish River – from the tidal estuaries to the spawning and wildlife areas of the upper basin. This Plan includes proposed restoration at 13 sites; these projects would restore and re-establish stream, riparian, wetland and tidal habitats, providing critical habitat for salmonids. A “finding of no significant impact” was issued associated with the project recommendations is this EA.	Stillaguamish Restoration habitat salmonids	
19	US Army Corp, Seattle District. *Stillaguamish River Ecosystem Restoration Final Feasibility Report*. Nov. 2000.	Report	This feasibility report documents the study conducted to address environmental problems related to hydrologic and hydraulic conditions in the Stillaguamish River Basin, including: identification of environmental problems and opportunities, evaluation of alternative solutions, description of the selected ecosystem restoration plan, discussion of federal and non-federal responsibilities for plan implementation, and recommendations.	Stillaguamish Restoration habitat salmonids recommendations	
20	Haugerud, Ralph A., *Preliminary Interpretation of Pre-2014 Landslide Deposits in the Vicinity of Oso, Washington*. USGS. Open File Report 2014-1065	Report	High-resolution topographic surveys allow fairly precise mapping of landslide deposits and their relative ages. This report presents a preliminary interpretation of the topography of this area using the lidar data at a scale of 1:24,000. LiDAR maps show landslide deposits in the vicinity of Oso and estimates the age of the deposits.	Landslide Oso Map	
21	Lovisa Linda, Eliza Maher Hasselquista, Hjalmar Laudona.	Research paper	Riparian zones contribute with biodiversity and ecosystem functions of fundamental importance for regulating flow and nutrient transport in waterways. However, agricultural land-use and physical	Agricultural Buffer zone	

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	Towards ecologically functional riparian zones: A meta-analysis to develop guidelines for protecting ecosystem functions and biodiversity in agricultural landscapes. Journal of Environmental Management, 249 (2019) 109391		changes made to improve crop productivity and yield have resulted in modified hydrology and displaced natural vegetation. The modification to the hydrology and natural vegetation have affected the biodiversity and many ecosystem functions provided by riparian zones. Here we review the literature to provide state-of-the-art recommendations for riparian zones in agricultural landscapes. We analyzed all available publications since 1984 that have quantified services provided by riparian zones and use this information to recommend minimum buffer widths. We also analyzed publications that gave buffer width recommendations to sustain different groups of organisms. We found that drainage size matters for nutrient and sediment removal, but also that a 3 m wide buffer zone acts as a basic nutrient filter. However, to maintain a high floral diversity, a 24 m buffer zone is required, while a 144 m buffer is needed to preserve bird diversity. Based on the analysis, we developed the concept of "Ecologically Functional Riparian Zones" (ERZ) and provide a step-by-step framework that managers can use to balance agricultural needs and environmental protection of waterways from negative impacts. By applying ERZ in already existing agricultural areas, we can better meet small targets and move towards the long-term goal of achieving a more functional land management and better environmental status of waterways.	Ecological functional riparian zones Riparian zone Vegetation Water	
22	Davis, Brent. Clark County Community Development. *Designating Riparian Habitat Areas Using WAC 222 Site Class and 200-year Site Potential Tree Height.* 2/19/2023.	Report	This paper proposes a method for using the updated WDFW Management Recommendations to determine Riparian Habitat Areas (RHAs) designated as Fish and Wildlife Conservation Areas under Clark County's Critical Areas Ordinance. And makes specific findings with regard to the application of SPTH200 to non-fish bearing streams. Based on the averaging analysis and findings regarding the extent of impacts from full implementation of the Management Recommendations on property owners, and the County's ability to meet it's GMA planning goals, the County proposes to maintain the existing reduction in Riparian Management Zones applied to perennial non-fish bearing waters (Type Np streams) and maintain the WDFW recommended width to protect water quality functions in seasonal non-fish bearing waters (Type Ns streams). Proposed RHAs for Clark County vary by soil site class and by stream type from 100' to 235'.	WDFW RMZ Buffer Riparian Clark County SPTH	
23	WDFW GMA Assistance, *Helping Local Governments in Western Washington with GMA Updates*, July 2022.	Fact Sheet	WDFW provides statewide resources, tools, and technical assistance to counties and municipalities to ensure that the best available science is available as they develop and update CAOs, urban growth areas, comprehensive plans, and development regulations. WDFW provides direct support to local governments working on GMA and SMA related activities through two different mechanisms.	WDFW PHS Riparian Ecosystems No Net Loss	
24	Timothy Quinn, George F. Wilhere, Kirk L. Krueger, WDFW – Habitat Program. *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications.* Pub. 5/2018, Updated 7/2020.	Report	Volume 1 is part one of a two-volume set. It contains reviews and syntheses of scientific literature for the purpose of informing the development of policies related to management of riparian areas and watersheds of Washington State. Volume 1 adds additional information to the science summarized in the PHS report titled Management Recommendations for Washington's Priority Habitats: Riparian (Knutson and Naef 1997). Volume 1 was designed to answer the following three general questions: • What is currently known about the key ecological functions of riparian areas? • How do riparian areas and watersheds affect the freshwater habitats of fish and wildlife? • How do human activities affect the capacity of riparian areas and watersheds to provide habitat for fish and wildlife in rivers and streams?	WDFW RMZ PHS SPTH Riparian ecosystem	
25	Amy Windrope, Terra Rentz, Keith Folkerts, and Jeff Azerrad, WDFW. *Riparian Ecosystems, Volume 2: Management Recommendations.*	Report	Volume 2 translates the science reviews from and syntheses Volume 1 into land use guidance for local governments and other organizations to conserve watershed processes and riparian ecosystems in support of aquatic species and their habitats. The guidance presented in Volume 2 is not in and of itself "best available science." Rather, it represents the recommendations of WDFW as	WDFW RMZ PHS SPTH	Priority Habitats And Species: Riparian Ecosystems and the Online SPTH Map Tool (arcgis.com)

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	2020. A Priority Habitats and Species Document of the Washington Department of Fish and Wildlife, Olympia, Washington. Dec. 2020.		to how a local government could include the best available science in policies, plans, and regulations to protect riparian ecosystems and their associated aquatic habitats	Mapping Tool	
26	WDFW, *Riparian Management Zone Checklist for Critical Areas Ordinances*. Technical Assistance Tool – April 2023	Checklist	This checklist is designed to help local planners translate BAS-based recommendations into Critical Areas Ordinance (CAO) amendments. This checklist is a voluntary tool that supplements Commerce's Critical Areas Checklist, specifically the section on Protection of Fish and Wildlife Habitat and Conservation Areas.	WDFW checklist CAO RMZ CMZ FWHCA	
27	FEMA, Region 10. *Community Checklist for the National Flood Insurance Program and the Endangered Species Act, April 2011.*	Checklist	This checklist is for the ESA/Biological Opinion criteria. The ESA/Bi-Op evaluates the impacts of the NFIP on listed species. By insuring against risks, the NFIP indirectly promotes development in the floodplain. The Bi-Op explains how this affects listed species who use the floodplain during flood events. This checklist can be used to evaluate local programs and regulations relative to the Reasonable and Prudent Alternatives (RPA) presented in the Bi-Op as measures necessary to meet required ESA standard of "no adverse affect".	ESA Bi-Op Floodplain RPA NFIP	
28	FEMA, Region 10. *Floodplain Management and the Endangered Species Act: A Model Ordinance.* Jan 2012	Model Ordinance	This model ordinance provides an option for local governments to demonstrate compliance with the NFIP Bi-Op. The model regulations address the Reasonable and Prudent Alternatives (RPA) presented in the Bi-Op as measures necessary to meet required ESA standard of "no adverse affect".	ESA Bi-Op Floodplain RPA NFIP	
29	National Marine Fisheries Service, NW Region. *Endangered Species Act – Section 7 Consultation Final Biological Opinion And Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation: Implementation of the National Flood Insurance Program in the State of Washington Phase One Document – Puget Sound Region.* NMFS Tracking No.: 2006-00472. Date Issued: September 22, 2008	Biological Opinion	This is the official Biological Opinion (Bi-Op) prepared by NOAA NMFS for FEMA and the NFIP regarding consultation under the ESA. An initial question for this consultation was identifying the specific, discretionary program activities under the NFIP that result in floodplain and related impacts that affect listed species. A second question for this consultation was whether implementing these activities can be said to "cause" floodplain development that affects listed salmon and steelhead. The Eleventh Circuit Court of Appeals held that "FEMA has the authority in its administration of the NFIP to prevent the indirect effects of its issuance of flood insurance by, for example, tailoring the eligibility criteria that it develops to prevent jeopardy to listed species. Therefore, its administration of the NFIP is a relevant cause of jeopardy to the listed species. The NMFS's analysis during the consultation supports the conclusion that FEMA's activities do lead to floodplain development in Washington State, some of which affects the habitat of listed species, including: PS Chinook salmon, PS steelhead, Hood Canal chum salmon, and SRKWs. The Reasonable and Prudent Alternatives (RPA) outlined in the Bi-Op consists of modifications to the discretionary elements of the NFIP that will prevent or minimize additional displacement of floodplain habitat important to the survival and recovery of listed species in the Puget Sound region. By minimizing future habitat losses and by utilizing its authorities to encourage the restoration of floodplain habitat through the removal of structures and other measures where feasible, FEMA can both avoid the likelihood of jeopardizing listed species through NFIP implementation and fulfill the NFIP's purpose of reducing the risk of flood losses by encouraging land-use practices that constrict floodplain development.	ESA Bi-Op Floodplain RPA NFIP	"The Bi-Op" RPAs are the key recommendations for managing land use in the floodplains (see pg. 150)
30	National Marine Fisheries Service, NW Region. Endangered Species Act (ESA) Section 7(a)(2) Biological	Biological Opinion	This document is a biological opinion prepared by NMFS and issued under the authority of section 7 of the Endangered Species Act of 1973 (ESA), as amended (ESA; 16 U.S.C. 1536), addressing impacts of the role of the BIA, USFWS, NMFS, WDFW for activities related to fishing and fisheries	ESA Bi-Op RPM	

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	Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) Response. *Impacts of the Role of the BIA Under its Authority to Assist with the Development of the 2021- 2022 Puget Sound Chinook Harvest Plan, the Role of the U.S. Fish and Wildlife Service in Activities Carried out under the Hood Canal Salmon Management Plan and in Funding the Washington Department of Fish and Wildlife under the Sport Fish Restoration Act in 2021-2022, and the Role of the National Marine Fisheries Service in authorizing fisheries consistent with management by the Fraser Panel and Funding Provided to the Washington Department of Fish and Wildlife for Activities Related to Puget Sound Salmon Fishing in 2021-2022.* NMFS Consultation Number: WCRO-2021-01008		management in Puget Sound. The document contains Reasonable and Prudent Measures which are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02). The document also identifies nondiscretionary terms and conditions necessary to implement the reasonable and prudent measures; failure to comply will result in lapse of the protective coverage. Discretionary conservation recommendations are also included		
31	NOAA NMFS. *National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion Environmental Protection Agency Registration of Pesticides Containing Carbaryl, Carbofuran, and Methomyl.* April 20, 2009.	Biological Opinion	NMFS issued a biological opinion evaluating the effects of the U.S. Environmental Protection Agency's (EPA) proposed registration of pesticide products containing the active ingredients carbaryl, carbofuran, and methomyl on endangered species, threatened species, and critical habitat that has been designated for those species. NMFS has concluded that the effects of carbaryl and carbofuran are likely to destroy or adversely modify designated habitat for 20 of 26 listed salmonids. NMFS has not designated critical habitat for two listed salmonids. NMFS determinations for no jeopardy and no adverse modification of critical habitat apply to Ozette Lake sockeye salmon, Snake River sockeye salmon, Northern California steelhead, Columbia River chum salmon, Hood Canal summer-run chum salmon. and Oregon Coast coho salmon. We further conclude that pesticide products containing methonlyl are likely to jeopardize 18 listed Pacific salmonids and likely to destroy or adversely modify critical habitat for 16 of 26 salmonids with designated critical habitat. The incidental take statement describes reasonable and prudent measures NMFS considers necessary or appropriate to minimize incidental take associated with this action. The incidental take statement also sets forth nondiscretionary terms and conditions, including reporting requirements that EPA and any person who performs the action must comply with to carry out the reasonable and prudent measures. Incidental take from actions by EPA and the applicants that meets these terms and conditions will be exempt from the ESA section 9 prohibitions for take. The RPAs include buffer recommendations for pesticide application depending on pesticide type, delivery method (ground or air), and the concentration to be applied (lbs/acre). Buffers range from 50’ to 600’ for ground application, and 600’-1000’ for aerial spray.	ESA Bi-Op RPM pesticide	

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32	Tessa B. Francis and Daniel E. Schindler. 2009. *Shoreline urbanization reduces terrestrial insect subsidies to fishes in North American lakes*. Oikos 118: 1872-1882. (7909)	Research article	Despite growing recognition of the energetic connections between aquatic and riparian habitats of streams and lakes, there have been few efforts to quantify the importance of terrestrial insect subsidies to fish in lakes. Further, it is unclear whether lakeshore urbanization alters the magnitude of these fluxes. Because lakeshore development has been found to be negatively correlated with riparian vegetation that serves as habitat for terrestrial invertebrates, we expected that shoreline urbanization would reduce the prevalence of terrestrial invertebrates in fish diets. We quantified the effects of lakeshore urbanization on terrestrial insect subsidies to fish at three scales: a focused comparison of annual patterns in four lakes in the Pacific Northwest, a one-time field survey of 28 Pacific Northwest lakes, and a literature survey of 24 North American lakes. At all geographical scales, terrestrial invertebrate subsidies to fish were negatively correlated with shoreline development. Terrestrial insects comprised up to 100% of fish diet mass in undeveloped lakes, versus an average of 2% of fish diet mass in developed lakes. Trout, Oncorhynchus spp., in undeveloped lakes had an average of 50% greater daily energy intake, up to 50% of which was represented by terrestrial prey. Temporal variability of the terrestrial subsidy suggests that these inputs are distinctly pulsed, and this subsidy is absent or temporally rare in undeveloped lakes.	Fish Riparian Lakes Insects	Development in riparian buffers on lakes reduces the food intake of fish by 50% and the terrestrial component of fish diets by 98%.
33	THOMAS G. SAFFORD, MARGEN L. CARLSON, ZACHARY H. HART (2009) *Stakeholder Collaboration and Organizational Innovation in the Planning of the Deschutes Estuary Feasibility Study*. Coastal Management, 37:514–528. (7900)	Research article	Coastal managers have sought to enhance the collaborative inputs of stakeholder groups into management activities. Nonetheless, established organizational approaches have led to primarily consultative forms of engagement and constrained citizen involvement in formative activities. In Olympia, Washington, managers overseeing the Deschutes Estuary Feasibility Study (DEFS) implemented an innovative cooperative research planning initiative that diverged from conventional consultative processes. Stakeholders, rather than government officials, identified the research priorities for the socioeconomic component of this restoration feasibility study. This design method altered the traditional roles and responsibilities of different organizational actors, and the involvement of citizen groups in these formative activities changed the relationship between governmental and nongovernmental actors. Using conceptual frameworks from organizational sociology, this study develops insights into the behavior of the organizations involved with the DEFS cooperative planning effort, demonstrating how engaging stakeholders in formative research planning activities may foster new types of collaboration among coastal management organizations.	Stakeholder input Citizen group Setting priorities Engaging stakeholders in research	The Deschutes River/Estuary feasibility study is seen as an innovative approach to environmental decision making.
34	DAVID M. RICHARDSON, PETR PYSEK, MARCEL REJMÁNEK, MICHAEL G. BARBOUR, F. DANE PANETTA, CAROL J. WEST (2000). *Naturalization and invasion of alien plants: concepts and definitions.* Diversity and Distributions 6:93–107. (7901)	Research article	Much confusion exists in the English language literature on plant invasions concerning the terms ‘naturalized’ and ‘invasive’ and their associated concepts. Several authors have used these terms in proposing schemes for conceptualizing the sequence of events from introduction to invasion, but often imprecisely, erroneously or in contradictory ways. This greatly complicates the formulation of robust generalizations in invasion ecology. Based on an extensive and critical survey of the literature we defined a minimum set of key terms related to a graphic scheme which conceptualizes the naturalization/invasion process. Introduction means that the plant (or its propagule) has been transported by humans across a major geographical barrier. Naturalization starts when abiotic and biotic barriers to survival are surmounted and when various barriers to regular reproduction are overcome. Invasion further requires that introduced plants produce reproductive offspring in areas distant from sites of introduction (approximate scales: > 100 m over < 50 years for taxa spreading by seeds and other propagules; > 6 m/3 years for taxa spreading by roots, rhizomes, stolons or creeping stems). Taxa that can cope with the abiotic environment and biota in the general area may invade disturbed, seminatural communities. Invasion of successionally mature, undisturbed communities usually requires that the alien taxon overcomes a		Standardizing the concepts and definitions of naturalized, alien, and invasive plants. About 10% of invasive plants that change the character, condition, form, or nature of ecosystems over substantial areas may be termed ‘transformers’. Great way to start thinking about the issues of “invasive” in our wetlands work. Thus creeping buttercup would be an invasive but reed canary grass is a transformer.

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			different category of barriers. We propose that the term 'invasive' should be used without any inference to environmental or economic impact. Terms like 'pests' and 'weeds' are suitable labels for the 50–80% of invaders that have harmful effects.		
35	Michael A. Mallin, Scott H. Ensign, Tracey L. Wheeler, and David B. Mayes (2002). *Pollutant Removal Efficacy of Three Wet Detention Ponds*. Journal of Environmental Quality 31:654-660. (7902).	Research article	Monthly inflow and outflow data were collected from three wet detention ponds in Wilmington, North Carolina, for a 29-mo period. Two ponds drained urban areas consisting primarily of residential, mixed services, and retail usage, while the third mainly drained residential and golf course areas. One of the urban ponds achieved significant reductions in total nitrogen, nitrate, ammonium, total phosphorus, orthophosphate, and fecal coliform bacterial counts. This pond characterized by a high length to width ratio, with most inputs directed into the upper area, and extensive coverage by a diverse community of aquatic macrophyte vegetation. The second urban pond achieved significant reductions in turbidity and fecal coliform bacterial counts, but there were no significant differences between inflowing and outflowing water nutrient concentrations. There were substantial suburban runoff inputs entering the mid- and lower-pond areas that short-circuited pollutant removal contact time. The golf course pond showed significant increases in nitrate, ammonium, total phosphorus, and orthophosphate in the outflow relative to the inflow, probably as a result of course fertilization. However, nutrient concentrations in the outflow water were low compared with discharges from a selection of other area golf courses, possibly a result of the outflow passing through a wooded wetland following pond discharge. To achieve good reduction in a variety of pollutants, wet pond design should include maximizing the contact time of inflowing water with rooted vegetation and organic sediments. This can be achieved trough a physical pond design that provides a high length to width ratio, and planting of native macrophyte species.	Stormwater Drainage ponds Pollutant removal Nutrients Nitrates	Stormwater ponds (wet detention ponds) do not always remove all pollutants. Pond design and contact time with rooted vegetation and organic sediments can improve efficacy.
36	Washington State Dept of Ecology, *Marine Shoreline Armoring and Puget Sound,* Feb. 2010	Fact sheet, FAQ	The importance of shorelines, description of armoring, state and local laws governing armoring, impacts to shellfish and nearshore habitat and species, alternatives for armoring, sea level rise and climate change resources. The broad scientific consensus is that armoring alters marine ecosystems and associated habitats, plants and animals – negatively impacting the important environment functions of our shorelines. Armoring isolates the land from the water, disturbs natural processes that replenish our shorelines including the movement of sediment and water, and disrupts the food web.	Bulkheads Marine shoreline	
37	Washington State Dept of Commerce, *Building Cities in the Rain*, Sept 2016.	Guidebook	This guidebook presents recommended data and a process for prioritizing watersheds for stormwater retrofit investments and the recovery of aquatic habitat in urban areas. It is intended to provide a tool for local governments to target investment in stormwater retrofits in a way that leverages opportunities for salmonid habitat restoration and facilitates redevelopment in urban centers. Use of regional facilities instead of site-by-site stormwater management encourages infill and helps meet density goals in urban centers. Prioritization of watersheds should be based on a 3-step process: 1) fish habitat value or other ecological values; 2) LID opportunity assessment; 3) Social equity and environmental justice. Level of degradation and level of importance should be considered when assigning priority for protection, restoration, conservation or development.	Stormwater Retrofits Infill Stormwater control transfer program Regional facilities Redevelopment Urban Centers LID	
38	Duncan Greene, T. C. Richmond, Gretchen Greene, Travis Greenwalt. *Conservation Tools: An Evaluation and Comparison of the Use of Certain*	Report	Prepared by GordonDerr LLP and ENTRIX, Inc. for Washington State Recreation and Conservation Office.	Fee simple Easements Leases Restrictive covenants	

	Bibliography	Record Type	Abstract	Subject Key Words	Notes / Links
	Land Preservation Mechanisms. Final Report. Dec. 23, 2009.		Pursuant to SHB 1957 (2009), this report evaluates and compares eight land preservation mechanisms based on their ability to achieve conservation goals, their cost, their ability to respond to future changes, and several other criteria selected to highlight the practical advantages and disadvantages of each mechanism. The report provides a framework for comparing these eight mechanisms under the influences of legal, practical and economic circumstances. The construction of this framework led to several general conclusions about the benefits and risks of land preservation mechanisms. The report uses a hypothetical case study to illustrate how the report's framework and conclusions can be used to select land preservation mechanisms under particular circumstances. This report offers conclusions regarding the ability of perpetual and temporary mechanisms to achieve conservation goals, the costs of perpetual and temporary mechanisms over time, and the ability of perpetual and temporary mechanisms to respond to changes over time. The report also compares fee simple acquisitions versus perpetual conservation easements over the same parameters. The selected option may be limited by conditions linked to the funding source.	Fee simple/lease back Deferred purchase Voluntary conservation	
39	Washington State Dept of Natural Resources. *Watershed Resilience Action Plan: A Trees to Seas Plan for Landscape-Scale Restoration in the Snohomish Watershed.* Jan. 2022.	Plan document	Commissioner of Public Lands Hilary Franz has launched a strategy dedicated to creating resilient watersheds in support of salmon recovery while securing human wellbeing so that all people can thrive in healthy and equitable communities. There are numerous aligned, federally-approved salmon recovery plans which this work builds upon—the Snohomish River Basin Salmon Conservation Plan, the Puget Sound Salmon Recovery Plan and Washington's Statewide Strategy to Recover Salmon. DNR's aim is to fill critical gaps and add value where our programs are best suited—including working and natural forested lands in the uplands, urban areas and the submerged aquatic vegetation in the estuary and Puget Sound. Our Watershed Resilience Action Plan has five Goals, 15 Actions and 34 Outcomes, and is rooted in supporting the needs on the ground and working with partners across all landscapes in the Snohomish Watershed to achieve measurable benefits for salmon recovery. Goals: 1) protect and clean up aquatic habitat; 2) Restore, conserve and connect forests and riparian habitat; 3) Engage and invest in communities; 4) Reduce and combat climate impacts; and 5) Revitalize urban forests and streams.	Resiliency Salmon recovery Forestlands habitat	
40	Washington State Department of Ecology, *A Methodology for Delineating* *Planning-Level Channel Migration Zones*, July 2014, Publication no. 14-06-025	Ecy publication	The Washington State administrative codes that implement the Shoreline Management Act (SMA) require communities to identify the general location of channel migration zones (CMZs), and regulate development within these areas on shoreline streams. While many channel migration studies and CMZ delineations have been done in Washington State, nearly all have been detailed assessments. These CMZ delineations are more rigorous then required by the state SMA administrative codes, which emphasize planning-level assessments. The Washington Department of Ecology (Ecology) developed a planning-level CMZ delineation (pCMZ) method to support local communities' updates and implementation of the SMA requirements. Ecology developed the pCMZ method through a process of: (1) initial pCMZ method development; (2) application and refinement of the method over 900 stream miles near the Puget Sound; and (3) further refinement through comparison of CMZs mapped using the planning-level approach to CMZs mapped using detailed CMZ methods. The pCMZ method uses the nature and extent of valley bottom features to assess past and potential future channel migration, and then define CMZ boundaries. This document describes the pCMZ approach in context of Washington State regulations.	CMZ Planning level analysis	

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41	Washington State Department of Ecology, *Washington's Water Quality Management Plan to Control Nonpoint Sources of Pollution,* December 2022, Publication 22-10-025	Ecy publication	This document outlines Washington State's approach to addressing water quality impacts from nonpoint sources (NPS) of pollution. Ecology's NPS program uses a combination of technical assistance, financial assistance, and regulatory tools to help citizens understand and comply with state and federal water quality laws and regulations. Based on the available water quality data, there remain a significant number of waterways that are not meeting the state Water Quality Standards which protect all beneficial uses. Runoff from streets, farms, forest lands and other sources continue to pollute our waters. These are considered NPS of pollution, and they represent the largest remaining challenge in achieving compliance with state Water Quality Standards. Both point and NP sources of pollution must be addressed to reverse the trend of impairment and achieve the goals outlined in state and federal law. This plan aims to protect public health and restore our state's waters by setting clearer goals and standards, and emphasizing the implementation of proven suites of best management practices to prevent pollution.	Nonpoint pollution Stormwater BMPs	Voluntary clean water guidance for agriculture, see pg. 106. Document to be completed in 2025. Voluntary Clean Water Guidance for Agriculture Advisory Group - Washington State Department of Ecology
42	Jessica Ferrell, *U.S. Fish & Wildlife Service Proposes Dramatic Expansion of Critical Habitat for Threatened Bull Trout,* ENVIRONMENTAL NEWS, January 28, 2010.		On January 14, 2010, the U.S. Fish & Wildlife Service (the "USFWS") proposed to revise its 2005 designation of critical habitat for the bull trout, a threatened species under the Endangered Species Act (the ESA), by significantly expanding the amount of marine and freshwater habitat designated as critical under the ESA. In the listing decisions and proposed critical habitat rule, the USFWS determined that the bull trout's decline has resulted primarily from habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, poor fisheries management, dams, water diversions, and nonnative species. These effects have resulted largely from timber harvest, agricultural practices, and road building near riparian areas; operation of dams without effective fish passage features; mining near aquatic systems; introduction of nonnative species that prey upon, hybridize, or exacerbate stresses on bull trout; and urbanization in watersheds. In the proposed rule, the USFWS also determined that climate change will likely pose additional threats to bull trout. In the event of potential destruction or an adverse modification finding, the permit applicant's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives (RPAs) to avoid destruction or adverse modification of critical habitat. RPAs vary "from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing [an RPA] are similarly variable.	EPA ESA Bull trout Endangered species RPA	
43	Washington State Department of Ecology, *Healthy shorelines equal a healthy Puget Sound.* Shorelands and Environmental Assistance Program. 02/05/10 (REV 2/11/10). Publication Number: 10-06-004.	Ecy publication	There is broad scientific consensus that armoring is generally harmful to marine ecosystems including Puget Sound and its associated habitats, plants, and animals. Armoring has varying degrees of environmental impacts related to disruption of natural shoreline processes. This is particularly true when armoring is placed where wave and tidal forces are the greatest. Many fish and wildlife species require healthy intertidal habitats for food, migration, cover, and spawning. Armoring structures that run parallel with the shoreline, such as bulkheads, can negatively affect high intertidal habitat by burying habitat and altering beach sediment composition and supply. Additional impacts (such as removing overhanging vegetation and large woody debris on the beach or altering groundwater flow) can have either direct or indirect effects on marine shore areas, fish spawning habitats, eelgrass beds, and shellfish beds. Puget Sound beaches depend on local sources of beach material. Armoring can disrupt this supply of material and change the characteristics of beaches and habitat. Armoring also changes how wave energy behaves. Hard vertical surfaces reflect wave energy back, often resulting in lowering beaches	Bulkheads Armoring shorelines	Recommendations: • Placing buildings, roads, and other development back from the bluff or beach • Careful site planning can avoid the need for armoring • Managing vegetation and site drainage • Stairs and beach access can be designed to minimize shoreline intrusion • Alternatives to armoring: large wood or gravel berms; vegetation and improved drainage to stabilize slopes • Success of armoring alternatives is site specific - Require property owners to provide site-specific information.

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			and washing away fine materials, leaving gravel and larger rocks behind instead. These changes can reduce or eliminate habitat for spawning forage fish and other species. The lowered beach can also undercut a bulkhead, causing it to fail.		
44	Office of Governor Jay Inslee. Saving our struggling salmon. Policy Brief. Dec. 2021.	Policy brief	Gov. Jay Inslee is proposing an updated strategy and additional investments to protect and restore salmon, steelhead and trout populations across the state. The governor's updated salmon strategy calls for several actions: Protect and restore vital salmon habitat; Invest in clean water infrastructure for salmon and people; Correct fish passage barriers and restore salmon access to historical habitat; Build climate resiliency; Align harvest, hatcheries and hydropower with salmon recovery; Address predation and food web issues for salmon; Enhance commitments and coordination across agencies and programs; and Strengthen science, monitoring and accountability. The policy document addresses each of the action items in greater detail, assigns responsibility for the action, and identifies a cost forecasts.	Salmon recovery Action items Responsible agencies	
45	WORD document containing: - links to web pages with info re: Kelp - Map – Seattle times - Map – Marine Resources Committee	Web links and Maps	Links to web pages for: 1) NW Straits Commission – Puget Sound Kelp Conservation and Recovery Plan; Status update; new papers 2) Seattle Times article – WA creates first sea grass and kelp sanctuary off Everett, March 21, 2022 3) Snohomish County Marine Resources Committee – Marine vegetation monitoring	Kelp Eel grass Map	Web pages describe importance of kelp and eel grass; issues triggering concern; map
46	WORD document containing links to tribal, state and federal agency web info	Web links	Nearshore Habitat Inventory | WA - DNR A Marine and Estuarine Habitat Classification System for Washington State Priority Habitats and Species (PHS) | Washington Department of Fish & Wildlife Essential Fish Habitat Mapper | NOAA Fisheries MRSC - Critical Areas Eelgrass/Macroalgae Habitat Interim Survey Guidelines | Washington Department of Fish & Wildlife ABE for Structures in Inland Marine Waters 6-8-2016.pdf (army.mil) Puget Sound Shoreline Monitoring Toolbox | Encyclopedia of Puget Sound (eopugetsound.org) Kelp Recovery and Conservation (nwstraits.org) Puget Sound Partnership Action Agenda (wa.gov) https://nwtreatytribes.org/2020-state-of-our-watersheds-more-restoration-projects-less-shoreline-armoring/ https://nwifc.org/publications/state-of-our-watersheds/ https://files.nwifc.org/sow/2020/chapters/	Nearshore Marine Estuary NOAA fish maps Critical areas Eel grass ABE – (abbreviated biological evaluation) Monitoring Action Agenda / PSP State of our watersheds / NWIFC / Tribes Shoreline structures PHS / WDFW	
47	Summary of Key Findings, Nearshore Habitat Inventory, Nearshore Habitat Program, WA State Department of Natural Resources	DNR publication	The Washington State ShoreZone Inventory characterizes approximately 3,000 miles of saltwater shorelines statewide. Intertidal areas were surveyed between 1994 and 2000 using helicopter-based aerial videography. These recordings were then used to create geographic data that summarizes the physical and biological characteristics of the shoreline. Approximately half of all shoreline modification in Washington State is associated with single-family residences (55% ±9%). This finding suggests that shoreline modification associated with single-family residences is a major component of total shoreline modification. Regulatory policies relating to shoreline management could be improved to more fully consider this potential source of environmental degradation.	Nearshore Data Shoreline conditions Modifications Single family	
48	Dethier, M.N. 1990. A Marine and Estuarine Habitat Classification	DNR publication	A classification system for marine and estuarine habitat types in Washington State is described. It builds on the National Wetland Inventory scheme of Cowardin, but (1) adds an "Energy" level in the	Classification Marine	

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	System for Washington State. Washington Natural Heritage Program. Dept. Natural Resources. 56 pp. Olympia, Wash. Reprinted in March 1997		hierarchy to incorporate the critical importance of waves and currents in structuring marine communities; and (2) removes the "Aquatic Bed" categories from all levels, making substratum type (by itself) one of the highest levels in the hierarchy. Definitions generally concur with those of Cowardin, although a geographic (not salinity-based) line for the marine-estuarine boundary had to be drawn for the northern Puget Trough. Marine and estuarine habitats are thus defined by their depth, substratum type, energy level and a few modifiers. For each combination of these physical variables, species (plants and animals) that are diagnostic of the habitat are described based on surveys from around the state. Other species commonly found in each community (including fishes and birds) are listed also, as are locations where such habitats have been surveyed. Approximately 60 intertidal and subtidal habitats are described in this fashion. An extensive bibliography is appended.	Estuarine Cowardin	
49	Priority Habitats and Species (PHS) Management Recommendations	Web page with links	WDFW documents containing management recommendations by habitat type and by species.	PHS Management recommendations	Priority Habitats and Species: Publications | Washington Department of Fish & Wildlife
50	Knight, K. 2009. Land Use Planning for Salmon, Steelhead and Trout. Washington Department of Fish and Wildlife. Olympia, Washington.	WDFW publication	The scope of this guidance is to provide technical assistance to protect salmonid habitat through Growth Management Act (GMA) plans and regulations, including critical areas ordinances, updates of Shoreline Master Programs mandated by the Shoreline Management Act (SMA). The GMA and SMA are the two most significant laws governing local planning and decision-making in Washington State and both planning programs have long-lasting influence on salmonid habitat protection and restoration. There are many sources of best available science on watershed processes, riparian and wetland management, etc. However, very little guidance for translating scientific recommendations into local government planning programs has been available. This guidance document translates existing science into planning tools, including model policies and regulations that can be incorporated into GMA and SMA planning programs to protect salmonids and prevent further loss or degradation of habitat. This document is also a desk-top reference for salmonid planning in Washington state as it includes numerous sources of planning and scientific resources and information on state salmon recovery efforts including regional salmon recovery plans.	Planning guidance Translate science into policy and regulation	
51	NOAA, Essential Fish Habitat Mapper	Interactive mapping tool	This one-of-a-kind tool allows users to discover where managed fish species spawn, grow, or live in a chosen location on the map. Users can generate a report with supporting documentation, including maps of EFH areas protected from fishing and habitat areas of particular concern; fishery management plans; and embedded NOAA nautical charts. They can also download GIS data from the EFH Data Inventory.	Fish habitat ESA	Essential Fish Habitat Mapper | NOAA Fisheries
52	MRSC - Critical Areas	Web page with links	This web page covers: best available science, critical area update process, sample ordinances, voluntary stewardship program, legal references, court decisions, and recommended resources.		MRSC - Critical Areas
53	WA State Department of Ecology, Critical Aquifer Recharge Areas Guidance, Revised March 2021, Publication 05-10-028	Ecy publication	The Growth Management Act (GMA) requires all cities and counties in Washington State to protect public groundwater drinking supplies so that tragic contamination events and their associated costs can be prevented. Public drinking water supply also depends on groundwater availability. Without replenishment, the amount of water in aquifers can be diminished or even depleted. This guidance document helps local jurisdictions and the public understand what is required for the protection of local groundwater resources under the Growth Management Act. It includes guidance for planning, ordinances, and for including the Best Available Science (BAS) as these relate to Critical Aquifer Recharge Areas.	Aquifer recharge Functions and values Contamination Vulnerability Groundwater quantity and quality	

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54	US Army Corp., ABBREVIATED BIOLOGICAL EVAULATION TO INITIATE ENDANGERED SPECIES ACT CONSULTATION FOR Structures in Inland Marine Waters of Washington State Version: June 8, 2016	ACE publication	This Abbreviated Biological Evaluation (ABE) form may be used for proposed in-water and over-water structures, including residential piers, ramps, floats, mooring buoys, marine rails, open-frame stairways, bluff-to-beach trams, and watercraft lifts. The form identifies the elements to be evaluated when considering a proposed project: forage fish, aquatic vegetation, wetlands, riparian conditions, conservation and construction specifications, Orca monitoring plan, timing for work, mitigation.	ABE specifications	
55	Jason Toft, Kate Litle, Jeff Adams and the Puget Sound Ecosystem Monitoring Program, *Puget Sound Shoreline Monitoring Toolbox*, Encyclopedia of Puget Sound, Feb. 5, 2015. Latest review: 2020	Web-based Interactive tool	Shoreline monitoring is often a desired or required goal of volunteer groups and local entities, but protocols and guidelines can be hard to find and misleading if not used appropriately. To overcome these obstacles, the shoreline research and management community needs standardized approaches for monitoring, and a "toolbox" of protocols and information. The toolbox emphasizes methods that are simple and affordable, and that can be used for monitoring restoration sites and evaluating status and trends. The toolbox is coordinated with the Puget Sound Ecosystem Monitoring Program's (PSEMP) Nearshore Work Group in order to provide resources for technical expertise. The Shoreline Monitoring Toolbox standardizes approaches to tracking the status and health of shoreline environments in Puget Sound. Primary components of the toolbox include (1) a decision tree that will help guide monitoring choices, and (2) organization and documentation of protocols that are not well known or are not in digital form. The goal is to have the toolbox be a platform that will build upon other resources to fulfill monitoring needs. The toolbox can help inform decisions to catalyze action by (1) providing effective guidance for how to monitor, (2) helping environmental entities and organizations access the resources they need in order to move forward in their goals, and (3) providing a feedback loop of completed projects that can inform future projects. Decision tree, protocols, data management, references	Shoreline habitats Nearshore Terrestrial Monitoring Armoring	Shoreline Monitoring Toolbox (google.com)
56	Northwest Indian Fisheries Commission Member Tribes, 2020 State of Our Watersheds Report.	NWIFC document	Review of the trends for these key environmental indicators since the 2016 State of Our Watersheds Report shows improvement for some indicators and a steady loss for others in habitat status. A consistent trend identified in the 2020 State of Our Watersheds Report is that key habitat features, such as riparian vegetation, habitat connectivity and stream flows, continue to be imperiled by human activities. This extensive loss and degradation of habitat, changing climate and ocean conditions threatens salmon, tribal cultures and tribal treaty-reserved rights, wildlife habitat, water quality, and western Washington's economy and quality of life. The principal findings in this report illustrate this alarming trend, but the descriptions contained within each tribe's watershed review provide the most accurate depiction of the habitat issues each tribe faces.	Trends: Forest, agriculture, water quality, invasive species, stream structure, fish barriers, impervious surface, groundwater withdrawals, floodplains, climate change, ocean conditions	
57	EnviroVision, Herrera Environmental, and Aquatic Habitat Guidelines Working Group. Protecting Nearshore Habitat and Functions in Puget Sound: An Interim Guide. October 2007.	Guidance document (funded by Ecy and PSP)	The intent of this guidance is to: ◊ Provide basic information on key nearshore habitats and how they are impacted by shoreline modifications, in summary form. ◊ Provide useful approaches to protecting nearshore habitat that are supported by the prevailing science. ◊ Provide recommendations in a form that lays out a decision sequence that begins with avoiding impacts from these activities and moves through mitigating for cumulative impacts. ◊ Provide the information in the form of user-friendly text and graphics with reliance on tools such as flow charts and tables rather than extensive narrative.	Nearshore Habitat Modifications	
58	Stanley, S., J. Brown, and S. Grigsby. 2005. Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to Understand Watershed Processes.	Ecy document	This document provides guidance for Puget Sound planners, resource managers, and consultants on how to better protect aquatic ecosystems, such as lakes, rivers, wetlands, and estuaries, by including information about watershed processes in resource management plans and regulatory	Ecosystem Watershed Functions and processes	

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	Washington State Department of Ecology. Publication #05-06-027. Olympia, WA.		actions. (Watershed processes means the delivery, movement, and loss of water, sediment, nutrients, toxins, pathogens, and large woody debris.)		
59	Puget Sound Partnership, Action Agenda 2022-2026	PSP document	The 2022-2026 Action Agenda charts the course for Puget Sound recovery. It presents the most effective and beneficial outcomes, strategies, and actions for Puget Sound recovery and resilience, supported by science and robust partner engagement. The Action Agenda addresses the magnitude of the challenges present in Puget Sound from the pressures of human activities including climate change and population growth. It calls for bold leadership to direct and support recovery by maximizing expertise, experience, and networks. It begins to incorporate human wellbeing, tribal nations' treaty and sovereign rights, and environmental justice. It provides clear guidance for funding and policy proposals to protect Puget Sound. Finally, it fulfills the Puget Sound Partnership's (Partnership) statutory mandate and purpose of the Clean Water Act's National Estuary Program (NEP). The Action Agenda identifies recovery goals, vital signs, indicators and targets. To achieve the Vital Sign goals and Puget Sound recovery, the Action Agenda identified desired outcomes as well as the strategies and action we must take to achieve them in the near term. The Action Agenda also emphasizes a multi-benefit approach – to meet the urgency and magnitude of the challenge we face – that will help the recovery community effectively make progress towards multiple goals.		Executive summary Excel "action" database
60	FEMA – Region 10. Regional Guidance for the Puget Sound Basin: Floodplain Habitat Assessment and Mitigation. August 2013.	FEMA document	Guidance document explains when and how to conduct a habitat assessment for projects within the special flood hazard area in compliance with ESA requirements as established in the Bi-Op (National Marine Fisheries Service, NW Region. Endangered Species Act – Section 7 Consultation Final Biological Opinion And Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation: Implementation of the National Flood Insurance Program in the State of Washington Phase One Document – Puget Sound Region. NMFS Tracking No.: 2006-00472. Date Issued: September 22, 2008).	Bi-op Habitat assessment Special flood hazard area	
61	Jeff Barnard, The Seattle Times, Study: Combining pesticides makes them more deadly for fish, March 2009.	News article	Report on research by Bob Weinhold, Synergy for Salmon: Study Spawns Insight into Pesticide Mixtures, published in Environmental Health Perspectives, Vol. 117, No. 3, March 2009. Original publication is appended to end of Seattle Times article. The research indicates that when certain pesticides are combined, the effects are more pronounced than when exposed to individual pesticides. Five pesticides were tested (diazinon, malathion, chlorpyrifos, carbaryl, and carbofuran) in combination. For 3 combinations, the salmon died within 24 hours. In contrast, there were no deaths among fish exposed to individual pesticides only. Furthermore, if synergistic effects occur at concentrations found in habitats supporting salmon stocks, which often include species designated as threatened or endangered, regulators may need to consider multichemical effects when setting exposure standards.	Salmon Pesticides	
62	State data standards, OR/WA Bureau of Land Management, US Dept. of the Interior, *Site Potential Tree Height Spatial Data Standard*, Version 1.0, August 1, 2017.	Metadata – data standards	The SPTH_POLY dataset represents spatial location and basic information about the average maximum height of the tallest dominant trees (200 years or older) for a given site class in Western Oregon. Site potential tree heights generally range from 140 feet to 240 feet, depending on site productivity. This dataset is used to determine the extent of riparian reserve land use allocations around streams and rivers managed under one of the two 2016 RMPs for Western Oregon. For perennial or fish-bearing streams, the extent is one site potential tree height distance on either side of the stream from the ordinary high-water line or from the outer edge of the channel migration zone for low-gradient alluvial shifting channels, whichever is greatest.	Site potential tree height (SPTH) Data standards	

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63	Salmon Recovery Funding Board, Washington State Recreation and Conservation Office, *Watershed Restoration and Enhancement Plan Review Report,* May 2023.	SRFB Report	Report evaluates restoration plans required under RCW 90.94 prepared for WRIA 7, 8, 13, 14, 15. Report contains recommendations for improving the plans and identifying projects throughout the basin.	Restoration plans RCW 90.94	
64	Christopher May, Urban Watersheds, Drainage & Wastewater, Seattle Public Utilities. *Watershed Processes and Aquatic Resources: A Literature Review,* undated	Literature review	Literature review of research dated from 1975 to 2004 related to impacts of urbanization on aquatic systems and habitat. Report presents a summary of the research findings including hydrology and flow dynamics, water quality and temperature, sedimentation and erosion, channel incision, biota diversity and conditions, habitat quality and diversity.	Urbanization Stream impacts Habitat	
65	WASHINGTON DEPARTMENT OF FISH AND WILDLIFE. 2009. LANDSCAPE PLANNING FOR WASHINGTON'S WILDLIFE: MANAGING FOR BIODIVERSITY IN DEVELOPING AREAS. 88 PP + APP. OLYMPIA, WA	Guidance document	This document contains recommendations for site design and stewardship that will maintain benefits for wildlife and allow development. Development related stressors are identified along with wildlife response to development and the importance of habitat composition, configuration and connectivity. Development site design that favors wildlife habitat: • Preserve habitat connectivity between wetlands and uplands on and off site • Preserve tree and vegetation diversity • Allowing flexible lot sizes and cluster development to retain open-space • Under-road tunnels with fences to funnel amphibians under the road • Shortening driveways and using pervious pavement to minimize impervious surfaces through LID practices. • Placing signs around open space to identify important features and restrictions that are in place Stewardship: • Maintain or increase native vegetation • Removing only a limited number of trees on each lot by deed restriction • Use of environmentally friendly yard and garden products • Avoid landscape changes such as installing fences, curbs, and walls	Wildlife habitat Site design Stewardship Connectivity	https://wdfw.wa.gov/species-habitats/at-risk/phs https://wdfw.wa.gov/species-habitats/at-risk/phs/recommendations This page contains links to a collection of recommendations and planning documents for managing projects with potential impact to priority habitat and species.
66	WASHINGTON DEPARTMENT OF FISH AND WILDLIFE. 2009. *LANDSCAPE PLANNING FOR WASHINGTON'S WILDLIFE: MANAGING FOR BIODIVERSITY IN DEVELOPING AREAS*. 88 PP + APP. OLYMPIA, WA Appendix B: Species and Development Database	Excel spreadsheet	The data sets list all terrestrial wildlife species in Washington, by county where they are known or are likely to occur, and provides basic information on their protected status, if any, and their habitat needs and development sensitivities.	Species Status Stressors	
67	WASHINGTON DEPARTMENT OF FISH AND WILDLIFE. *Eelgrass/Macroalgae Habitat Interim Survey Guidelines.* Undated.	Guidance document	Eelgrass and macroalgae are defined as saltwater habitats of special concern. This document describes the standards and methodology for survey, mitigation and monitoring for eelgrass beds when projects cannot be relocated to avoid impacts.	Eelgrass	
68	EnviroVision, Herrera Environmental, and The Aquatic Guidelines Working Group. *Protecting Nearshore Habitat*	Guidance document	This document describes the purpose and importance of nearshore habitat and identifies several key habitat types: beaches and bluffs, forage fish, kelp and eelgrass, marine riparian vegetation, and juvenile salmon habitat. Direct, indirect and cumulative impacts to these key habitat areas	Nearshore Development impacts Mitigation	

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	and Functions in Puget Sound: An Interim Guide. October 2007.		caused by development are described along with regulatory and design considerations needed to help protect these areas. Recommendations for managing and regulating common shoreline and nearshore modifications are included for overwater structures, shoreline armoring and riparian vegetation alteration. These recommendations address project review and permitting, project location, design and materials, construction equipment and activities, and mitigation measures. Note: The Aquatic Habitat Guidelines Working Group is a multi-agency committee within Washington State that receives support and participation from the Departments of Fish and Wildlife, Ecology, Natural Resources, Transportation, Community Trade and Economic Development; the Recreation and Conservation Office, and the Puget Sound Partnership.		
69	Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. (2021). *Wetland Mitigation in Washington State–Part 1: Agency Policies and Guidance (Version 2).* Washington State Department of Ecology Publication #21-06-003. April 2021.	Guidance document	This document provides a brief primer on the wetland regulatory process, an overview of the factors that go into the agencies' permitting decisions, and detailed guidance on the agencies' policies on wetland mitigation, particularly compensatory mitigation. It outlines the information the agencies use to determine whether specific mitigation proposals are appropriate and adequate to compensate for the proposed impacts. The following points should be considered when selecting, designing, and implementing compensatory mitigation to ensure that it is appropriate and complies with the policies and regulatory requirements of the agencies: • Consult with agencies to verify regulatory requirements • Apply mitigation sequencing • Develop conceptual mitigation plan • Assess wetland functions present • Compensate for lost functions, compensation needs to be sustainable • Mitigation area will be bigger than impact area due to temporal impacts • Provide corridors and connectivity • Off site may be better than on-site – decide where ecological benefits are highest • Restore wetlands and ecological functions whenever possible • Provide adequate buffers	Wetlands Buffers Mitigation	
70	Washington State Department of Ecology. *Wetland Guidance for Critical Areas Ordinance (CAO) Updates.* Publication #22-06-014, October 2022.	Guidance document	This document is an update to the June 2016 Wetland Guidance for CAO updates (for both Western and Eastern Washington). It is intended to provide wetland guidance and tools for jurisdictions working on implementing the requirements of Washington State Growth Management Act (GMA), specifically, designating and protecting wetland critical areas. Guidance includes protection recommendations for mitigation sequencing, buffers, signs and fencing, compensatory mitigation. Ecology has developed a Credit-Debit Method for calculating when a proposed wetland mitigation project adequately replaces the functions and values lost when wetlands are impacted. This tool provides a quantitative method for determining the adequacy of compensatory wetland mitigation, and it allows review of compensation for specific wetland functions. The tool is designed to provide guidance for both regulators and applicants during two stages of the mitigation process: 1. Estimating the functions and values lost when a wetland is altered (debits), and 2. Estimating the gain in functions and values that result from the mitigation (credits).	Wetlands Critical area updates Mitigation Credit-debit mitigation tool	Credit debit method - Washington State Department of Ecology
71	Washington State Department of Ecology. *Homeowners' Guide to Wetlands & Buffers*. Publication	Guidance document	This document focuses on homeowners and offers explanation of wetland values, regulations and actions to prevent damage to wetlands: septic systems, clearing and mowing, use of chemicals, dumping and filling, pet control, recreational overuse, stormwater runoff, and the importance of buffers. It includes gardening and yard care tips.	Wetlands homeowners	Adapted from At Home with Wetlands – A Landowner's Guide (Publication #90-31)

	Bibliography	Record Type	Abstract	Subject Key Words	Notes / Links
	Number: 14-06-022. Revised April 2018				
72	Washington State Department of Ecology. *Washington State Wetland Rating System For Western Washington, 2014 Update, Version 2.0.* Publication 23-06-009. October 2014 (updated July 2023).	Guidance document	This document describes criteria for classifying, delineating and scoring wetlands. The July 2023 version provides annotations and clarifications but does not make any significant changes to the underlying model of the 2014 wetland rating system.	Wetland rating	
73	Whatcom County Planning & Development Services. *Whatcom County Critical Areas Ordinance 2016 Update – Best Available Science Review: Addendum to the 2005 BAS Report.* 2-9-2016.	Addendum to Whatcom Co.'s BAS summary.	The document describes recommended updates to the county's code by code section and includes BAS references used to support the recommendations.	BAS addendum	
74	US Army Corps of Engineers, Seattle District. *Stillaguamish River Ecosystem Restoration*, Puget Sound and Adjacent Waters Authority, Snohomish County WA. November, 2000.	Final Environmental Assessment	This document is the Environmental Assessment (EA) pursuant to NEPA for the recommended basin-wide restoration plan. The purpose of this document is to evaluate what types of approaches to habitat restoration have been considered under the Ecosystem Restoration Plan, and then actual projects that are the outcome of the preferred restoration methodology. The preferred methodology is to use a multi-species approach. The result of this planning process is to focus on 13 capital improvement projects that can provide immediate and long-term benefits improving ecological functions for a variety of aquatic species by focusing on restoration of riverine processes.	Restoration Ecological functions	
75	US Army Corps of Engineers, Seattle District. *Stillaguamish River Ecosystem Restoration, Final Feasibility Report*. November 2000.	Report	The focus of this study was to address environmental problems related to hydrologic and hydraulic conditions in the Stillaguamish River Basin. This feasibility report documents the study including: identification of environmental problems and opportunities, evaluation of alternative solutions, description of the selected ecosystem restoration plan, discussion of federal and non-federal responsibilities for plan implementation, and recommendations. The proposed Ecosystem Restoration Plan recommends restoration features throughout the Stillaguamish River Basin that span from the river's tidal estuaries to spawning and wildlife areas in the upper basin. The Plan includes proposed restoration features at 10 sites within the basin that would provide critical salmon habitat, including spawning, rearing refugia, and estuarine habitats. The Plan will restore or reconnect access to 1,483 acres of habitat at a total implementation cost of $24,223,000 (October 2000 price level).	Restoration Ecological functions	
76	Washington State Department of Ecology. Public Hearing: Chapter 173-201A WAC, *Salmon Spawning Habitat Protection Rule.* December 9, 2021.	Powerpoint presentation	The rule addresses freshwater criteria for dissolved oxygen and criteria for fine sediment: improve rules that protect aquatic life habitat; ensure sufficient DO levels in spawning gravels; account for environmental factors that influence dissolved oxygen; develop methods to ensure the physical condition of streambeds are protective of aquatic life and salmonid reproduction; prevent fine sediment from anthropogenic sources at levels that cause adverse effects on aquatic life.	Water quality Dissolved oxygen Sediment	New rules effective April 2022. https://app.leg.wa.gov/WAC/default.aspx?cite=173-201A
77	Washington State Department of Ecology. STORMWATER TREATMENT OF TIRE CONTAMINANTS BEST MANAGEMENT PRACTICES EFFECTIVENESS, Final Report, June 2022.	Report prepared by consultants	The goal of this project was to synthesize current knowledge of 6PPD and 6PPD-q, including physicochemical properties, sources, and fate and transport within the built environment, to assess which stormwater best management practices (BMPs) are expected to reduce concentrations of 6PPD and 6PPD-q in stormwater runoff. BMP evaluation criteria were applied to 93 flow and treatment BMPs and 84 source control BMP that were identified in the stormwater design manuals. For flow and treatment BMPs, 28 BMPs ranked high, 51 medium, and 14 low. For source control BMPs 9 ranked high, 3 medium, and 72 low	6DDP 6DDP-q Stormwater BMPs	https://ecology.wa.gov/about-us/accountability-transparency/partnerships-committees/voluntary-clean-water-guidance-for-agriculture-adv

	Bibliography	Record Type	Abstract	Subject Key Words	Notes / Links
78	Spromberg, Julann A. et al. Coho salmon spawner mortality in western U.S. urban watersheds: bioinfiltration prevents lethal stormwater impacts.	Research study	This study compared exposure of potential contaminants to health coho: 1) artificial stormwater containing 53 mixtures of metals and petroleum hydrocarbons, at or above concentrations previously measured in urban runoff; 2) undiluted stormwater collected from a high traffic volume urban arterial (i.e., highway runoff); and 3) highway runoff that was first pre-treated via bioinfiltration through experimental soil columns to remove pollutants Findings: mixtures of metals and petroleum hydrocarbons – conventional toxic constituents in urban stormwater – are not sufficient to cause the spawner mortality syndrome. By contrast, untreated highway runoff collected during nine distinct storm events was universally lethal to adult coho relative to unexposed controls. Lastly, the mortality syndrome was prevented when highway runoff was pretreated by soil infiltration, a conventional green stormwater infrastructure technology.	Stormwater Toxic road runoff Salmon Coho	
79	Doughton, Sandi. Toxic road runoff kills adult coho salmon in hours, study finds. The Seattle Times (online version). Originally published October 8, 2015 at 11:07 am Updated February 12, 2016 at 11:02 am.	News article	News report on the research study done by Julann Spromberg et. al.		
80	Larissa M. Werbowski, Alicia N. Gilbreath, Keenan Munno, Xia Zhu, Jelena Grbic, Tina Wu, Rebecca Sutton, Margaret D. Sedlak, Ashok D. Deshpande, and Chelsea M. Rochman. Urban Stormwater Runoff: A Major Pathway for Anthropogenic Particles, Black Rubbery Fragments, and Other Types of Microplastics to Urban Receiving Waters. ACS ES&T Water 2021 1 (6), 1420-1428 DOI:10.1021/acsestwater.1c00017	Research article	Stormwater runoff has been suggested to be a significant pathway of microplastics to aquatic habitats; yet, few studies have quantified microplastics in stormwater. Here, we quantify and characterize urban stormwater runoff from 12 watersheds surrounding San Francisco Bay for anthropogenic debris, including microplastics. Depth-integrated samples were collected during wet weather events. All stormwater runoff contained anthropogenic microparticles, including microplastics, with concentrations ranging from 1.1 to 24.6 particles/L. These concentrations are much higher than those in wastewater treatment plant effluent, suggesting urban stormwater runoff is a major source of anthropogenic debris, including microplastics, to aquatic habitats. Fibers and black rubbery fragments (potentially tire and road wear particles) were the most frequently occurring morphologies, comprising ~85% of all particles across all samples. This suggests that mitigation strategies for stormwater should be prioritized. As a case study, we sampled stormwater from the inlet and outlet of a rain garden during three storm events to measure how effectively rain gardens capture microplastics and prevent it from contaminating aquatic ecosystems. We found that the rain garden successfully removed 96% of anthropogenic debris on average and 100% of black rubbery fragments, suggesting rain gardens should be further explored as a mitigation strategy for microplastic pollution	Urban stormwater Microplastic Tire particles Bioretention Rain garden	
81	Johannessen, J.1 , A. MacLennan1 , A. Blue1 , J. Waggoner1 , S. Williams1 , W. Gerstel2 , R. Barnard3 , R. Carman3 , and H. Shipman4 , 2014. Marine Shoreline Design Guidelines. Washington Department of Fish and Wildlife, Olympia, Washington.	Publication	Many alternatives to hard armor exist for managing risk to structures and infrastructure posed by coastal erosion, including: the use of best management practices, structure relocation, and implementation of “soft shore protection” project designs. Chapters 1 and 2 provide background information which includes the geology of Puget Sound, the documented impacts of armor, and responsible shore stewardship. Chapters 3, 4, and 5 provide a framework for conducting site and coastal processes assessments that inform an alternatives analysis resulting in the selection of appropriate management techniques for a particular site. Chapter 6 and 7 contain descriptions, project examples, and design guidance for specific design techniques based on past project performance.	Shoreline Armoring Soft shore	This is one publication in a series prepared for the Aquatic Habitat Guidelines Program. Guidance Documents: • Water Crossing Design Guidelines (2013) • Stream Habitat Restoration Guidelines (revised 2012) • Protecting Nearshore Habitat and Functions in Puget Sound (2010) • Landuse Planning for Salmon, Steelhead and Trout: A landuse planner’s guide to salmonid habitat protection and recovery (2009)

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			Chapters 8 and 9 discuss monitoring methods for shore projects and identify future research needs.		• Integrated Streambank Protection Guidelines (2003) • Design of Road Culverts for Fish Passage (2003) • Fishway Guidelines for Washington State (2000) • Fish Protection Screen Guidelines for Washington State (2000) State of the Knowledge White Papers (literature reviews): • Protection of Marine Riparian Functions in Puget Sound, Washington (2009) • Marine and Estuarine Shoreline Modification Issues (2001) • In and Over-water Structures in Marine and Freshwater Environments (2001) • Treated Wood Issues in Marine and Freshwater Environments (2001) • Channel Design (2001) • Ecological Issues in Floodplain and Riparian Corridors (2001) • Dredging and Gravel Removal in Marine and Freshwater Environments (2001)
82	Washington State Department of Wildlife. Your Marine Shoreline: A Guide to Protecting Your Property While Promoting Healthy Shorelines. 2016.	Publication brochure	By offering choices to homeowners, this booklet shifts the focus from bulkheads, or hard techniques, toward natural and restorative approaches to protect and enhance marine waterfront properties. The document addresses site assessment, design techniques, selecting a professional, permitting, native plants and additional resource.	Shoreline Armoring Public education	This document was sent to shoreline property owners in partnership between PDS, the MRC and NW Straits Foundation.
83	Washington Geologic Survey. MAP SERIES 2021-01. MAP SHEET 3 of 16. Tsunami hazard maps of the Puget Sound and adjacent waters—Model results from an extended L1 Mw 9.0 Cascadia subduction zone megathrust earthquake scenario. April 2021. Map Sheet 3: Detailed Tsunami Inundation of Puget Sound and Adjacent Waters – Admiralty Inlet Alexander Dolcimascolo, Daniel W. Eungard, Corina Allen, Randall J. LeVeque, Loyce M. Adams, Diego Arcas, Vasily V. Titov, Frank I. González, Christopher Moore, Carrie E. Garrison-Laney, and Timothy J. Walsh.	Map	Washington State Department of Natural Resource, University of Washington, NOAA Center for Tsunami Research, Pacific Marine and Environmental Laboratory. The map shows tsunami modeling results of tsunami resulting from Cascadia earthquake. The map identifies shorelines where inundation is inferred but not quantified, and also shows area where water depth has been modeled in greater detail using shaded relief generated by composite LiDAR 3-foot elevation model. Map shows detail in Snohomish River estuary with inferred (unquantified) impact up-river to Snohomish.	Tsunami map	Tsunami Risk in Everett | Everett, WA - Official Website (everettwa.gov)

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84	Guillot, Nikki. WATER QUALITY POLICY. Washington State Department of Health, Office of Drinking Water. December, 2023.	Presentation slides	The presentation highlights DOH comments to Ecology related to UIC wells regarding upcoming release of next round of NPDES Stormwater Permits and Stormwater Manual for Eastern WA. • Microbial pathogens in Section 1.4 on stormwater pollutants- refer Water Research Foundation report 5034 • Vadose zone assumption for treatment is not supported by current research • Stormwater pollutants does not include PFAS despite an abundance of literature • UICs-Groundwater antidegradation goals and beneficial use, use demonstrative approach, use a licensed hydrogeologist for site specific analysis and hydrogeologic study, notify water purveyors • Include Wellhead Protection Areas in screening criteria for all infiltration BMPs, not just UICs	UIC wells Vadose zone	
85	UIC FINAL LANGUAGE UPDATE: Washington State Department of Health, Office of Drinking Water, (undated).	Presentation slides	DOH submitted comments to Ecology, specific to Eastern WA stormwater manual, but where appropriate should be considered for western WA too. • Improve the association between UIC locations and Groundwater Protection Areas. • Improve the notification process with public water suppliers and proposed UIC wells. • Provide additional guidance relating to hydrogeological analysis. • Local jurisdiction should verify whether any type of ground water quality management plans and/or local ordinances or regulations have been established. • Provide additional guidance, or clear reference, that will allow the applicant to specifically evaluate Groundwater Protection Areas to determine if an infiltration BMP is suitable. • Provide clarification for setback between UIC wells and wells used for public supply. • Screening criteria should not be used for UIC within 100 feet of a drinking well or spring as no UIC should be sited within 100 feet of any drinking water source • Provide hydrogeological study that includes….an evaluation of vadose zone treatment capacity," clarify how the 15-foot separation was determined. • How is adequate geologic and groundwater depth determined? Are there alternatives for the designer? • Provide a definition "vulnerable drinking water sources" • Expand the list of places that fertilizers, pesticides or nutrients are likely to come from – parks, playgrounds, urban landscape, aerial spraying	UIC wells Vadose zone	link to DOH Source Water Program mapping tool (SWAP): https://doh.wa.gov/community-and-environment/drinking-water/source-water/gis-mapping-tool
86	Washington State Department of Ecology. 2019 SMMWW – Volume 1, Section 1.4 UIC Program. Publication No. 19-10-021.	Guidance document	Introduction to Ecology's UIC well program. The unsaturated geologic material between the bottom of the UIC well and the top of an unconfined aquifer, herein called the vadose zone, usually provides some level of treatment by removing contaminants by filtration, adsorption, and/or degradation. In some cases, the treatment provided by the vadose zone is suitable for protecting ground water quality from contamination by stormwater runoff. In other cases, additional treatment may be required to protect ground water quality. I-4.16 Determining Treatment Requirements and I-4.17 Classification of Vadose Zone Treatment Capacity describe these assessments and their application.	UIC wells vadose zone	
87	United States Environmental Protection Agency, Office of Water. State Implementation Guide: Revisions to the Underground Injection Control Regulations for Class V Injection Wells. EPA 816-R-00-008. September, 2000.	Guidance document	This guide has been developed to assist States and EPA Regions in implementing the "Class V Rule" (Revisions to the Underground Injection Control Regulations for Class V Injection Wells, 64 FR 68546). The Class V Rule contains the minimum Federal requirements for Class V UIC wells in general, statewide mapping of sensitive groundwater areas, and for specific types (cesspools, motor vehicle waste disposal sites)	UIC wells Sensitive areas delineation, mapping	
88	Shaleen-Hanson, Mary. Washington State Department of Ecology.	Guidance document	To prevent redundancy between the Underground Injection Control (UIC) program rule and the Phase I and II Municipal Stormwater National Pollutant Discharge Elimination System (NPDES)	UIC wells stormwater	

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	Underground Injection Control(UIC) Stormwater Management Program (SWMP) Components. Pub. No. 21-10-024. June 2021.		Permits (MS4 Permits), the UIC program rule allows jurisdictions that own or operate Class V UIC wells and are also covered under the Phase I or II MS4 permit to satisfy UIC requirements by the presumptive approach, pursuant to WAC 173-218-090 (1)(c)(C): 1. Have a single jurisdiction-wide Stormwater Management Program (SWMP) that combines requirements for both the municipal UIC wells and the municipal separate storm sewer system (MS4); and/or 2. Have a separate and distinct SWMP developed specifically for the municipal UIC wells in the jurisdiction; and/or 3. Create a Stormwater Site Plan (SSP) for the area served by each municipal UIC well and complete a well assessment for each municipally owned existing (in use before 2/3/2006) UIC well.		
89	Boomazian, Linda (Director, Water Permits Division, MC 4203M) and Steve Heare (Director, Drinking Water Protection Division, MC 4606M). United States Environmental protection Agency. *Clarification on which stormwater infiltration practices/technologies have potential to be regulated as "Class V" wells by the Underground Injection Control Program*. June 13, 2008.	Memorandum	The memo includes a table describing various stormwater management practices/technology and determines which may meet definition of a Class V UIC well: Downspout disconnection (sheet flow); infiltration trenches than is deeper than it is wide, or includes perf pipe, drain tiles or similar; commercially manufactured SW infiltration devices; drywells, seepage pits, improved sink holes.	Stormwater UIC wells	
90	United States Environmental protection Agency. *When is a septic system regulated as a Class V well?* June 2003.	Fact Sheet	This fact sheet is for state, tribal, and local regulators; health department officials; environmental quality officers; and other persons who design, track, inspect, or issue permits for septic systems to help identify when a septic system would be regulated as a Class V well.	Septic LOSS Class V UIC	
91	United States Environmental Protection Agency. *When are storm water discharges regulated as Class V wells?* June 2003.	Fact Sheet	This fact sheet is for storm water managers that implement the National Pollutant Discharge Elimination System (NPDES) program to increase awareness that storm water drainage wells are regulated as Class V injection wells and to ensure that NPDES regulators understand the minimum federal requirements under the Safe Drinking Water Act (SDWA) for the Underground Injection Control (UIC) program.	Stormwater Class V UIC	
92	Washington State Department of Ecology. *Modified from Wetland Guidance for CAO Updates, Western Washington Version*, Publication No. 16-06-001. July 2018	Guidance document	Modifications for wetland habitat score ranges to Ecology's guidance.	Habitat Score Range Wetland	
93	U.S. Army Corps of Engineers, Department of Defense; and Environmental Protection Agency. *Compensatory Mitigation for Losses of Aquatic Resources*; *Final Rule*. April 10, 2008.	Federal Rule	The U.S. Army Corps of Engineers (the Corps) and the Environmental Protection Agency (EPA) are issuing regulations governing compensatory mitigation for activities authorized by permits issued by the Department of the Army. The regulations establish performance standards and criteria for the use of permittee-responsible compensatory mitigation, mitigation banks, and in-lieu programs to improve the quality and success of compensatory mitigation projects for activities authorized by Department of the Army permits. This rule improves the planning, implementation and management of compensatory mitigation projects by emphasizing a watershed approach in selecting compensatory mitigation project locations, requiring measurable, enforceable ecological performance standards and regular	Mitigation Banks In-Lieu Fee Compensatory Mitigation	

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			monitoring for all types of compensation and specifying the components of a complete compensatory mitigation plan, including assurances of long-term protection of compensation sites, financial assurances, and identification of the parties responsible for specific project tasks. This rule applies equivalent standards to permittee-responsible compensatory mitigation, mitigation banks and in-lieu fee mitigation to the maximum extent practicable. Since a mitigation bank must have an approved mitigation plan and other assurances in place before any of its credits can be used to offset permitted impacts, this rule establishes a preference for the use of mitigation bank credits, which reduces some of the risks and uncertainties associated with compensatory mitigation. This rule also significantly revises the requirements for in-lieu fee programs to address concerns regarding their past performance and equivalency with the standards for mitigation banks and permittee-responsible compensatory mitigation.		
94	Department of Commerce. *Critical Areas Handbook: A Handbook for Reviewing Critical Area Regulations*. June 2018	Guidance Document	This handbook is designed to help Washington communities review and, if needed, revise locally adopted programs for designating and protecting critical areas under the Growth Management Act (GMA). The Legislature amended GMA in 1997 to require counties and cities to periodically take action to review and, if needed, revise their comprehensive land use plan and development regulations to ensure that the plan and regulations are consistent with changes to statute since the last update. Meeting the Best Available Science (BAS) requirement was challenging for many jurisdictions in the initial round of periodic updates that were due between 2004 through 2008. Identifying the "best available science" and "including" that science in updated regulations often presented logistical and political challenges.	Best Available Science Land Use Periodic Update	
95	Edwards, Emily C., Connie Nelson, Thomas Harter, Chris Bowles, Xue Li, Bennett Lock, Graham E. Fogg, Barbara S. Washburn. Potential effects on groundwater quality associated with infiltrating stormwater through dry wells for aquifer recharge. Journal of Contaminant Hydrology, Vol. 246, April 2022, 103964.	Research article	Dry wells (gravity-fed infiltration wells) have frequently been used to recharge aquifers with stormwater, especially in urban areas, as well as manage flood risk and reduce surface water body contamination from stormwater pollutants. However, only limited assessment of their potential adverse impacts on groundwater quality exists. Dry well recharge can bypass significant portions of the filtering-capacity of the vadose zone. Stormwater and groundwater monitoring data and analysis of transport of a wide range of historic and current-use stormwater chemicals of concern is lacking. To address these gaps, two dry wells were constructed with vegetated and structural pretreatment features to assess the likelihood of stormwater contaminants reaching the aquifer. • Infiltration of stormwater runoff through dry wells with pretreatment may pose little risk to groundwater quality. • Pretreatment and subsurface clay sequester particles and reduce the concentration of pollutants reaching the aquifer. • Modeling suggests most contaminants take decades to centuries to reach the water table, given sufficient subsurface clay.	Stormwater infiltration Dry wells Groundwater quality Vadose zone modeling Aquifer recharge Urban stormwater quality	
96	Kroger, Curtis, Susan Beckman, Jennifer Saltonstall, Jeff Massie, Masako Lo. Hydrogeologic Assessment Report for Deep UIC Wells Venema Natural Drainage System. Proceedings of the Water Environment Federation. Vol/Issue 2013/17. Oct. 2013.	Conference paper	The City of Seattle (Seattle Public Utilities [SPU]) has implemented a Natural Drainage System (NDS) program to utilize Green Stormwater Infrastructure (GSI) to filter, attenuate, divert, and/or infiltrate stormwater runoff in multiple watersheds within the City. This program focuses on returning affected watersheds to their pre-development hydrology. The Venema NDS Project proposes to utilize GSI within selected street right-of-ways to reduce runoff into the natural stormwater conveyance system via localized deep infiltration along selected blocks. Bioretention swales with an underdrain and deep infiltration systems (Class V Underground Injection Control	Stormwater LID UIC wells Water quality	

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	(WEFTEC 2013 conference proceedings)		Significant volumes of stormwater could be conveyed to the subsurface via deep UIC wells. Deep infiltration has the potential to reduce erosive surface water discharge into Venema Creek, improve water quality and increase base flows into the stream system.		
97	Kroger, Curtis, et. al. Hydrogeologic Evaluation of a Combined GSI and Deep UIC Well Infiltration System for Flow Control – Venema NDS Project, Seattle, Washington. Associated Earth Sciences, Inc.	Presentation slides			
98	Washington State Department of Ecology. Design requirements for infiltration trenches. Summary table of requirements from Ecology's stormwater manuals (SMMWW and SMMEW). (no date, contents refer to 2005 SW manuals).	Table	The summary table provides standards for infiltration trenches with soils considered as a treatment BMP and when soils are not a treatment BMP: separation, depth of soil, treatment, groundwater protection area (DOH), operation and maintenance.	Infiltration Standards Separation depth	
99	United States Environmental Protection Agency. Underground Injection Control Program. EPA 816F19005. April 2020.	Fact Sheet	The fact sheet describes the purpose of the UIC program, types of UIC wells, and the permit and inspection programs.	UIC wells	
100	GSI Water Solutions, Inc. Groundwater Protectiveness Demonstrations. Prepared for Lane County, Oregon. April 2013.	Report	This report presents model-based Groundwater Protectiveness Demonstrations (GWPD) which will be used by Lane County, Oregon (County) to identify and prioritize Underground Injection Control (UIC) device retrofits or decommissioning. The County currently uses 94 UIC devices. The GWPDs documented in this report are based on pollutant fate and transport models that simulate pollutant attenuation in the subsurface using conservative assumptions. The Unsaturated Zone GWPD calculates a vertical protective separation distance by simulating vertical transport of pollutants in unsaturated soils between the bottom of the UIC and the seasonal high groundwater table. A UIC is protective of the groundwater resource if the vertical separation distance is greater than about 2.3 feet (vertical UICs) or 4.8 feet (horizontal UICs) to manage stormwater from public rights-of way and adjacent properties in residential areas.	UIC wells Vertical separation Horizontal separation	
101	Wilhere, George, Jane Atha, Timothy Quinn, Lynn Helbrecht, and Ingrid Tohver. Incorporating Climate Change into the Design of Water Crossing Structures. November 2017.	Report	The report describes a study conducted by the Washington Department of Fish and Wildlife (WDFW or the Department) from 2014 to 2016. The study represents the Department's initial attempt to explore climate-related changes to stream channel morphology with the intent of determining how climate change could be incorporated into the design of water crossing structures.	Climate Change Infrastructure Water Crossing	
102	Hruby, Thomas PhD. Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington. Publication #10-06-011. March 2012.	Guidance Document	This document is one of a series of guidance documents developed by the Ecology to improve wetland mitigation in the State of Washington. It describes a tool (called the Credit-Debit Method) for estimating whether a plan for compensatory mitigation will adequately replace the functions and values lost when a wetland is altered. The tool is designed to provide guidance for both regulators and applicants during two stages of the mitigation process: 1) estimating the functions and values lost when a wetland is altered, and 2) estimating the gain in functions and values that result from the mitigation. The Department of Ecology, however, does not require the use of this method. The adequacy of a mitigation project can also be determined by using any other method that addresses the "no-net-loss" policy.	Wetlands Credit-Debit Compensatory Mitigation	
103	Washington Department of Fish and Wildlife. Priority Habitats and Species	Guidance Document	An updated list of priority habitat and species in Washington State from WDFW. Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance. There are 20 habitat types, 141	Priority Habitat and Species PHS	

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	List. August 2008 (Updated June 2023).		vertebrate species, 40 invertebrate species, and 11 species groups in the 2023 list. Each are listed in this document along with links to management recommendations from WDFW (separate documents) if available or from other agencies.	Management Recommendations WDFW	
104	WDFW List of 2023 Priority Species and Habitats	List	A list of WDFW priority habitats and species located in the state and specifically within Snohomish County. There are 87 species and 12 habitats in Snohomish County.	PHS Priority habitats and species WDFW	
105	F. Joseph Rocchio and Rex C. Crawford, Washington Department of Natural Resources. Washington Natural Heritage Program, Ecological Systems of Washington State, A Guide to Identification. Natural Heritage Report 2015-14. October 19, 2015	Guidance Document	One of the primary objectives of the Washington Natural Heritage Program (WNHP) is to maintain a classification and inventory of Washington's natural heritage resources and prioritize them for conservation action. This guide focuses on the Ecological System classification and is intended to provide a tool to identify all the Ecological Systems which occur in Washington. To date, the Ecological Systems classification has been used primarily for large-scale conservation planning and as a means to communicate the regional diversity of ecosystems. Information about the rarity or potential risk of elimination or extirpation of ecosystems can help prioritize and guide conservation and/or management actions toward those ecosystems that are of most concern. The document provides ecological system descriptions for Washington State.	DNR Natural Heritage Program Ecological Systems	
106	F. Joseph Rocchio and Rex C. Crawford, Washington Department of Natural Resources. Washington Natural Heritage Program, Conservation Status Ranks of Washington's Ecological Systems. Natural Heritage Report 2015-03. August 4, 2015	Guidance Document	The document ranks the rarity and risk of Washington's most imperiled ecosystems for WDFW. In the past, conservation status ranks were assigned by a qualitative by experts that could result in issues with consistency, repeatability, and transparency associated with the rank assessments. To address these concerns, starting in 2004 NatureServe developed a transparent ranking protocol. Across the state 23 Ecological Systems are considered to be critically imperiled (S1 or S1S2 rank), 18 to be imperiled (S2 or S2S3 rank), and 11 to be vulnerable (S3 or S3S4 rank), while the remaining Systems are of less risk (S4 or S5 rank) or have Q or U status.	DNR Natural Heritage Program	
107	Walter Fertig, Washington Natural Heritage Program. 2021 Washington Vascular Plant Species of Conservation Concern. Natural Heritage Report 2021-04. August 31, 2021.	Guidance Document	For more than 40 years the Washington Natural Heritage Program (WNHP) has maintained a list of Washington plant species of conservation concern. Each of these species is ranked at the global and state scale following the standardized protocol of the NatureServe network. This document updates the list as of 2021 and provides distribution ranges by county. There are 23 present in Snohomish County.	DNR Natural Heritage Program Conservation Concerns	
108	Walter Fertig, Washington Natural Heritage Program. 2021 Washington Vascular Plant Species Review Lists 1 & 2. Natural Heritage Report 2021-05. August 31, 2021.	Guidance Document	The WNHP maintains a list of Washington vascular plant species of conservation concern. Before being added to this list, species undergo a review in which their status is evaluated by the state natural heritage program botanist and experts from academia, government, and the private sector. During the review, species are assessed based on the best available information on their distribution, abundance, number of occurrences, threats, and trends in the state. If a species is found to be sufficiently vulnerable, it is designated as state Endangered, Threatened, Sensitive, or Extirpated and added to the Washington Vascular Plant Species of Conservation Concern list. This document includes the two review lists.	DNR Natural Heritage Program	
109	Washington Natural Heritage Program. 2016 List of Ecological Systems in Washington State, 1990 List of Mosses, 2011 List of Lichens, 2011 List of Macrofungi, 2012 List of Marine Algae, 2024 List of Animal Species with Ranks.	List	List includes those Ecological Systems known to occur in Washington State, list of Mosses, list of Lichens, list of Macrofungi, List of Marine Algae, and List of Animals with Ranks	DNR Natural Heritage Program Ecological Systems	

	Bibliography	Record Type	Abstract	Subject Key Words	Notes / Links
110	U.S Army Corps of Engineers, Washington State Department of Ecology, and Washington State Department of Fish and Wildlife. Interagency Regulatory Guide, Advance Permittee-Responsible Mitigation. Publication No. 12-06-015. December 2012.	Guidance Document	The "Making Mitigation Work" 2008 Ecology publication includes a recommendation to expand appropriate use of advance mitigation. This guide is intended to help applicants develop advance mitigation proposals and sites. The guide notes that the risk of mitigation sites not achieving the targeted improvements to wetlands, water quality, and/or fish and wildlife habitat are eliminated because advanced mitigation sites will not generate credits until the targeted functions are achieved and the site is proposed for use by an applicant.	Advance mitigation Compensatory mitigation	
111	Department of Ecology. Making Mitigation Work, The Report of the Mitigation that Works Forum. Publication No. 08-06-018. December 2008	Guidance Document	Five recommendations from the report: 1) Reinforce the importance of avoiding and minimizing impacts to resources that are highly valuable and difficult to replace. 2) Establish an ecosystem- or watershed-based approach to mitigation. 3) Develop and implement a wide variety of compensatory mitigation tools. 4) Develop more coordinated, predictable approaches to reviewing development projects and associated mitigation plans. 5) Support making mitigation work. There are a number of subgoals or actions within each overarching recommendation, such as articulating policy priorities for the use of watershed characterization information to expedite mitigation decisions under recommendation 2.	Compensatory mitigation Watershed approach Advance mitigation	

II. SWM BAS inventory

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
1	Roads to ruin_2018	S:\Code Dev\CAR\2024 Update\SWM BAS\Baker	Roads to ruin: conservation threats to a sentinel species across an urban gradient.	2018	Feist, B. et al	Y – includes abstract	The more urban a watershed, the higher the coho spawner mortality rate. The most important variable linked to coho spawner mortality is traffic density. The researchers suggest bioinfiltration as a top approach to mitigating and even eliminating the effects of high-density vehicle use and should be emphasized at arterials. Additionally, support should be given to efforts to eliminate the sources of 6PPD and other pollutants. When critical areas have any stormwater infiltration benefits they should be emphasized. This may include when road runoff is diffuse and not contained by a shoulder and drainage network. Additionally, high traffic roads near critical areas should be prioritized for green stormwater infrastructure and runoff should be treated with bioinfiltration to prevent coho spawner mortality in the streams that are otherwise adequately protected by buffers.
2	Eelgrass Trend Monitoring Map for Snohomish County_2023_Abstract and link	S:\Code Dev\CAR\2024 Update\SWM BAS\Dawson	Snohomish County Marine Vegetation Monitoring	2023	DNR and Snoco	Y – includes abstract	The purpose of this web application is to present the extents of eelgrass surface area from recent surveys (2019-2022) along the shoreline of Snohomish County, and to compare recent findings with previous studies.
3	Forage Fish Spawning Map_2023_Abstract and Link	S:\Code Dev\CAR\2024 Update\SWM BAS\Dawson	Forage Fish Spawning Map - Washington State		WDFW	Y – includes abstract	Forage fish beach surveys are conducted to identify where and when surf smelt and Pacific sand lance spawn in the upper intertidal. Training to conduct beach surveys is provided by WDFW on an annual basis, or more frequently as needed. The map shows the documented spawning locations of Pacific Sand Lance, Surf Smelt, and Pacific Herring in Washington State.
4	Marine Vegetation Mapping of Port Susan and Hat Island_2023	S:\Code Dev\CAR\2024 Update\SWM BAS\Dawson	INTERAGENCY AGREEMENT DEPARTMENT OF NATURAL RESOURCES (DNR)	2023	DNR and Snoco	Y – includes abstract	In 2022, DNR and Snohomish County signed IAA 93-103581. The goal of this agreement was to conduct a comprehensive survey of marine vegetation (eelgrass, understory kelp, and other macroalgae) at 24 sites along the shoreline of Snohomish County. Surveys spanned the shoreline between Warm Beach and Hermosa Point, and the shoreline of Gedney Island using methods developed for DNR's monitoring programs. A comparison between data collected by DNR from 2019 to 2022 with a county-wide side survey of eelgrass beds based on data from 1999-2007 suggests that total eelgrass area was very similar between both surveys
5	Marine Vegetation Mapping of South Snohomish County_2022	S:\Code Dev\CAR\2024 Update\SWM BAS\Dawson	INTERAGENCY AGREEMENT DEPARTMENT OF NATURAL RESOURCES (DNR)	2022	DNR and Snoco	Y – includes abstract	In 2021, Snohomish County signed an agreement with DNR to conduct a comprehensive survey of marine vegetation (eelgrass, understory kelp and other macroalgae) at 22 sites along the shoreline of Snohomish County, between Edmonds and Everett.
6	Marine Vegetation Mapping of the Snohomish Delta_2021	S:\Code Dev\CAR\2024 Update\SWM BAS\Dawson	INTERAGENCY AGREEMENT DEPARTMENT OF NATURAL RESOURCES (DNR)	2021	DNR and Snoco	Y – includes abstract	2020, Snohomish County signed an agreement with DNR to conduct a comprehensive survey of marine vegetation (eelgrass, understory kelp and other macroalgae) at 10 sites along the Snohomish estuary, from Hermosa Point (North of Tulalip Bay) down to Port Gardner.
7	Snohomish Beach Nourishment Monitoring Report_2020	S:\Code Dev\CAR\2024 Update\SWM BAS\Dawson	Railroad Grade Beach Nourishment Study	2020	WDFW	Y – includes abstract	Shoreline railroad construction, beginning in the early 1800s, has disrupted natural beach and habitat forming processes, resulting in degraded shorelines and beaches. Overall, the study found that sediment nourishment along the BNSF railroad can improve some structural and functional aspects of shorelines, but these improvements are unlikely to persist for longer than a few years if they are limited 8in scale or solely rely on re-use of finer, clean dredged material. Longer term

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
							monitoring may be needed to adequately assess these situations, likely along with continued experimental nourishment interventions and maintenance.
8	2017a-Science-and-Salmon-Recovery-Reprint-Lackey	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Science and Salmon Recovery	2017	Robert T. Lackey, WDFW	Y	Salmon recovery has not been successful, need public policy. Not clear what land use implementation would look like.
9	Benefit Cost Analysis of Shore Friendly Practices in Island County FINAL	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Benefit Cost Analysis of Shore Friendly Practices in Island County	2019	Econorthwest and Blue Coast Engineering	Y	There are 1,847 single family properties located along the shoreline in Island County. The majority of these shoreline properties (approximately 60%) have either a natural beach or an engineered soft shore protection which mimics a natural beach. This study was conducted on behalf of the Island County Shore Friendly program to determine the economic benefits and costs of five shoreline protection strategies available to property owners. These strategies include installation of hard armor, armor removal to restore a natural beach, soft shore protection, moving a house inland or in elevation, and conserving the natural beach. case study to show how property owners can apply the framework to make decisions about shoreline protection strategies. In general, installation of hard armor along low bluffs where a natural beach currently exists results in the largest reduction in overall private and public benefits, and is a relatively high cost to property owners as compared to other shoreline strategies.
10	Final_Estuary Target Update Chinook Recovery Plan 9-11-12	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Estuary Restoration Target Update to the Stillaguamish Chinook Recovery Plan	2012	The Nature Conservancy	Y	It is known that tidal forested and shrub scrub habitats are used extensively by juvenile Chinook salmon, and that these habitats have been virtually removed from the landscape (>95% loss, Table 2)
11	Final_SNRD adaptation plan_6.5.2017_reduced	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Stillaguamish Tribe of Indians Natural Resources Climate Change Adaptation Plan	2017	Stillaguamish Tribe	Y	Strategies for biodiversity conservation under climate change. Goal of the report is to increase climate resilience of species and habitat.
12	GAO Report on PS Restoration (July 2018)	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Puget Sound Restoration: Additional Actions Could Improve Assessments of Progress	2018	GAO	Y	Through its survey of federal and Washington State entities, GAO identified numerous federal and state efforts that, in whole or in part, supported Puget Sound restoration from fiscal years 2012 through 2016. GAO is making two recommendations, including that EPA work with the management conference to help ensure that measurable targets are developed where possible for the highest priority indicators currently lacking such targets
13	Greene_et_al_2021_chinook_salmon_ estuary_density_dependance	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Landscape, density-dependent, and bioenergetic influences upon Chinook Salmon in tidal delta habitats: Comparison of four Puget Sound Estuaries	2021	Greene et al,	Y – includes abstract	To improve habitat restoration planning and design for threatened species, science from monitoring efforts can help inform what habitat features are important to populations. Our analysis highlights the importance of habitat diversity in tidal deltas to maximize growth potential for juvenile Chinook salmon that rely on estuaries for growth. Restoration planning that focuses on maintaining diversity while increasing capacity will be important for supporting population recovery and resilience.
14	hall et al 2018 floodplain complexity Chinook productivity Plos One (00000002)	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Large river habitat complexity and productivity of Puget Sound Chinook salmon.	2018	Hall et al	Y – includes abstract	We conclude that our watershed-scale census based approach provided habitat complexity metrics that explained some of the variability in productivity of subyearling juveniles among Chinook salmon populations. Furthermore, this approach may provide a useful means to track and evaluate aggregate effects of habitat changes on the productivity of Endangered Species Act (ESA) listed Chinook salmon populations over time.
15	Hood February 2012 Beaver in tidal marshes	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Beaver in Tidal Marshes: Dam Effects on Low-Tide Channel	2012	Hood	Y – includes abstract	Beaver pools tripled shrub zone channel capacity for juvenile Chinook salmon at low tide relative to herbaceous zone marsh without beaver pools

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
			Pools and Fish Use of Estuarine Habitat.				
16	Morley et al 2005 Juv-Sal-Skagit-Side Channels	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Juvenile salmonid use of constructed and natural side channels in Pacific Northwest Rivers	2005	Morley et al	Y – includes abstract	Relative to other stream habitats, both constructed and reference channels supported high densities of juvenile coho salmon during the summer and winter.
17	Primary_Drivers_Stillaguamish_final_9.30.15	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	SUMMARY OF PROJECTED CHANGES IN PHYSICAL CONDITIONS IN THE STILLAGUAMISH WATERSHED AND CEDED AREA	2015	UW climate impacts group	Y	Baseline conditions of how climate change is likely to affect priority species.
18	Raymondetal. 2018. SLR Considerations Nearshore Puget Sound	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	SEA LEVEL RISE CONSIDERATIONS for NEARSHORE RESTORATION PROJECTS in PUGET SOUND	2018	Raymond et al	Y	Given these observed and projected future changes in sea level and coastal hazards, we developed this document to assist restoration professionals with considering SLR impacts in the planning and design of nearshore restoration projects in Puget Sound
19	Stefankiv_et_al-2019-influences of valley form and land use on large river and floodplain habitats in Puget Sound RRA	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Influences of valley form and land use on large river and floodplain habitats in Puget Sound	2018	Stefankiv et al	Y	Habitat abundance and complexity decreased with increasing degree of human influence, with all metrics being highest in areas classified as forested and lowest in areas classified as developed.
20	Stillaguamish Vulnerability Assessment 9.30.15	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Stillaguamish Tribe Natural Resources Climate Change Vulnerability Assessment	2015	UW climate impacts group	Y	This report describes an assessment of the climate change vulnerability of priority species and habitats for the Stillaguamish Tribe of Indian
21	SWC Woody Debris Target Final	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Woody Debris Target Update of the Stillaguamish Chinook Recovery Plan	2016	Stillaguamish	Y	This proposal recommends that the implementation target for wood placement projects is 20% of the estimated wood deficit or 122 wood jams (Table 4).
22	Tidal flats as flood defenses	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Tidal flat-wetland systems as flood defenses: Understanding biogeomorphic controls	2018	Reed et al	Y	This review examines whether and how the dynamic nature of tidal flat -wetlands systems contributes to, or detracts from, their role in coastal defense. It discusses how the characteristics of the system adjust to external forcing and how these adjustments affect ecosystem services. It also considers how human interventions can take advantage of natural processes to enhance or accelerate achievement of natural coastal defense.
23	Tribal-Habitat-Strategy-2018	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	Tribal Habitat Strategy	2018	Northwest Indian Fisheries Commission	Y	Work with state and local governments to make riparian restoration a priority in zoning and land-use laws. Advocate for establishment and maintenance of riparian buffers based on 1 site potential tree height (SPTH). And many other recommended actions.
24	V.2 SWC acquisition strategy FINAL 10-1-2020	S:\Code Dev\CAR\2024 Update\SWM BAS\Driscoll	The Acquisition Strategy of the Stillaguamish Chinook	2020	Stillaguamish	Y	This strategy is intended to provide guidance to watershed stakeholders as they implement the Stillaguamish Watershed Chinook Recovery Plan (SIRC 2005 and subsequent revisions; the Plan). It provides a framework to prioritize parcels along the major Chinook-bearing waters of the Stillaguamish, for bot
25	W2r Memo_CMZ_methods_comparison	S:\Code Dev\CAR\2024 Update\SWM BAS\ECY - Channel Migration Zones	Comparison of Channel Migration Zone Methodology	2023	Wolf Water Resources	Y	The purpose of the memorandum (memo) is to compare and contrast methods of channel migration zone (CMZ) delineation established by Washington state agencies. we recommend Ecology's CMZ delineation
26	WA Ecology_Framework for CMZ Delineation_2003	S:\Code Dev\CAR\2024 Update\SWM BAS\ECY - Channel Migration Zones	A Framework for Delineating Channel Migration Zones (Publication #03-06-027)	November 2003	Rapp and Abbe	Y	This report, prepared in light of proposed revisions to Chapter 173-26 WAC (the Shoreline Management Guidelines) and for purposes of flood hazard management, is intended as a guidance document for local governments and practitioners, based

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
							on up-to-date, peer-reviewed research. While offering a thorough and systematic procedure for identifying and delineating CMZs, the approach and methods presented in this document: • represent only one approach to CMZ delineation; • are not mandated for local government use under any state law; • do not replace existing regulatory definitions of CMZs; and • are intended to be applied in areas under Shoreline jurisdiction (as defined by the SMA).
27	WA Ecology_Planning-Level CMZ Delineation_2014	S:\Code Dev\CAR\2024 Update\SWM BAS\ECY - Channel Migration Zones	A Methodology for Delineating Planning-Level Channel Migration Zones (Publication #14-06-025)	July 2014	Olson, Legg, Abbe, Reinhart, and Radloff	Y	The Washington State administrative codes that implement the SMA require communities to identify the general location of CMZs, and regulate development within these areas on shoreline streams. While many channel migration studies and CMZ delineations have been done in Washington State, nearly all have been detailed assessments. These CMZ delineations are more rigorous then required by the state SMA administrative codes, which emphasize planning-level assessments. The rigorous studies are cost-prohibitive to implement for all regulated shoreline streams in the state. The SMA and its administrative codes provide no guidance on planning-level CMZ delineation methods. Ecology developed a planning-level CMZ delineation (pCMZ) method to support local communities' updates and implementation of the SMA requirements. Ecology developed the pCMZ method through a process of: (1) initial pCMZ method development; (2) application and refinement of the method over 900 stream miles near the Puget Sound; and, (3) further refinement through comparison of CMZs mapped using the planning-level approach to CMZs mapped using detailed CMZ methods. The pCMZ method uses the nature and extent of valley bottom features to assess past and potential future channel migration, and then define CMZ boundaries. This document describes the pCMZ approach in context of Washington State regulations.
28	WA Ecology_Screening Tools for Identifying CMZs_2015	S:\Code Dev\CAR\2024 Update\SWM BAS\ECY - Channel Migration Zones	Screening Tools for Identifying Migrating Stream Channels in Western Washington: Geospatial Data Layers and Visual Assessments (Publication #15-06-003)	February 2015	Legg and Olson	Y	Few tools exist to rapidly identify migrating streams at landscape scales where spatial variability in channel migration is great. Ecology has developed two complementary tools for quickly assessing channel migration potential.
29	FEMA_Draft Regional Guidance for H&H Incl CMZs_2010	S:\Code Dev\CAR\2024 Update\SWM BAS\FEMA - Channel Migration Zones	Draft Regional Guidance for Hydrologic and Hydraulic Studies: In support of the Model Ordinance for Floodplain Management and the Endangered Species Act.	2010	FEMA Region 10	Y – includes abstract	The FEMA Regional Guidance was written for communities in the Puget Sound Basin to assist them in meeting the requirements and criteria of the Endangered Species Act (ESA) as clarified in the Biological Opinion (BiOp) issued by NMFS in 2008.
30	6ppD in Road Runoff Assessment of Mitigation Strategies	S:\Code Dev\CAR\2024 Update\SWM BAS\Herrman	6PPD in Road Runoff Assessment and Mitigation Strategies	2022	Ecology	Y – includes abstract	December 2020, a Puget Sound-based stormwater science team identified 6PPD-Quinone as the contaminant responsible for pre-spawn coho mortality in local streams. Ecology's assessment strategy workgroup found that the amount of stormwater mitigation needed to address the tire pollution problem varies considerably from watershed to watershed. Preventive operation and maintenance,

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
							such as street sweeping and catch basin cleaning, are likely helpful in preventing the transport of tire wear debris and reducing the magnitude of the problem.
31	Biochar and fungi as stormwater treatment media_November 2022	S:\Code Dev\CAR\2024 Update\SWM BAS\Leif	Biochar and fungi as bioretention amendments for bacteria and PAH removal from stormwater	2023	Mitchell et al	Y – includes abstract	This report evaluated removal of fecal indicator bacteria (FIB) and polycyclic aromatic hydrocarbons (PAHs) in stormwater by bioretention systems, comparing treatment performance of Ecology's standard sand/compost bioretention medium with three other mixtures amended with biochar, fungi, or both. The results suggest that PAHs in stormwater can be remediated with bioretention, are unlikely to accumulate in bioretention media, and that biochar amendments can improve the treatment of E. coli. Impact Drainage code
32	Effects of urban tree canopy loss on land surface temperature_April 2017	S:\Code Dev\CAR\2024 Update\SWM BAS\Leif	Effects of urban tree canopy loss on land surface temperature magnitude and timing	2017	Elmes et al	Y – includes abstract	Because vegetated surfaces retain less heat than impervious surfaces, tree loss in more densely urbanized areas could increase land surface temperatures more than the same level of tree loss in a less urbanized area.
33	High Density Development as Urban Stormwater BMP_June 2009	S:\Code Dev\CAR\2024 Update\SWM BAS\Leif	High Density Development as Urban Stormwater BMP	2009	Jacob	Y – includes abstract	For a constant or given population, higher density can result in dramatically lower total loadings than more diffuse suburban densities. The model showed that a simple doubling of standard suburban densities [to 8 dwelling units per acre (DUA) from about 3 to 5 DUA] in most cases could do more to reduce contaminant loadings associated with urban growth than many traditional stormwater best management practices (BMPs), and that higher densities such as those associated with transit-oriented development could outperform almost all traditional BMPs, in terms of reduced loadings per a constant population.
34	Protecting and Restoring Puget Sound B-IBI Basins_November 2015	S:\Code Dev\CAR\2024 Update\SWM BAS\Leif	Strategies for Protecting and Restoring Puget Sound B-IBI Basins	2015	King County Department of Natural Resources and Parks	Y – includes abstract	This report assessed B-IBI data from approximately 1,100 streams in the Puget Sound region. 101 streams with B-IBI scores in the "excellent" range were identified for "protection." The report proposed restoration and protection strategies and actions to achieve these targets, presented relative costs of recommended actions, and suggests several next steps toward achieving the targets and improving the scientific knowledge base
35	Quantifying stormwater volume reduction from urban street tree canopy_October 2021	S:\Code Dev\CAR\2024 Update\SWM BAS\Leif	Quantifying stormwater runoff volume reduction from urban street tree canopy	2021	USDA	Y – includes abstract	The purpose of this study was to quantify the effect of removing urban trees and their canopy on stormwater generation. Tree removal resulted in an estimated 198 m3 increase in surface runoff volume compared to the control catchment over the course of the study. This increase accounted for 4% of the total measured runoff after trees were removed. Runoff volume reduction benefit was estimated at 6376 L per tree.
36	Seattle Tree Canopy Assessment Final Report_2021	S:\Code Dev\CAR\2024 Update\SWM BAS\Leif	City of Seattle Tree Canopy Assessment	2021	Seattle	Y – includes abstract	Between 2016 and 2021, Seattle's total canopy cover declined from 15279 acres to 15024 acres, a net loss of 177 acres, or 1.7%. Neighborhoods impacted by racial and economic injustice not only started with less canopy but also lost more than the citywide average. The comparison of the 2020 temperature data to the 2021 tree canopy data showed that unit cells with 0% tree canopy were on average 1 degree F hotter than cells with 26% tree canopy.
37	Stormwater Status and Trends 2015 Data Analysis for Puget Lowland Streams_May 2018	S:\Code Dev\CAR\2024 Update\SWM BAS\Leif	Stormwater Action Monitoring Status and Trends Study of Puget Lowland Ecoregion Streams: Evaluation of the First Year (2015) of Monitoring Data	2018	King Co	Y – includes abstract	Key stressors identified included watershed and riparian canopy cover, stream substrate characteristics, and nutrients. Watershed and riparian canopy cover were found to be the most important stressors to B-IBI at the regional scale. This suggests that canopy cover protection and recovery (reducing impervious surface) could lead to substantial improvements in B-IBI scores.

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
38	Alberti and Shandas 2009	S:\Code Dev\CAR\2024 Update\SWM BAS\Leonetti	Exploring the role of vegetation fragmentation on aquatic conditions: Linking upland with riparian areas in Puget Sound lowland streams	2009	Shandas, Alberti	Y	By using landscape metrics to quantity vegetation amount and distribution at the riparian and watershed scales, and a macroinvertebrate index to describe aquatic conditions, this study presents empirical evidence about the interactions between riparian and upland vegetation as they affect instream biological condition of 51 nested watersheds in the Puget Sound low-land. Our findings suggest that the fragmentation of upland vegetation and the total amount of riparian vegetation explain the greatest amount of variation in aquatic conditions. These results help frame a management approach for conserving upland areas of vegetation through the use of land use planning techniques. Riparian vegetation plays a significant role on instream biological conditions. Watershed vegetation is also likely important.
39	Multiscale Impacts of Armoring on Salish Sea Shorelines_ Dethier at al. 2016	S:\Code Dev\CAR\2024 Update\SWM BAS\Leonetti	Multiscale impacts of armoring on Salish Sea shorelines: Evidence for cumulative and threshold effects	2016	Dethier et al	Y	We 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.
40	RelativeRisk_Dorfmeier_2014_4	S:\Code Dev\CAR\2024 Update\SWM BAS\Leonetti	Identifying Stressor Risk to Biological Health in Streams and Small Rivers of Western Washington	2014	King Co DNR	Y	The Puget Lowland benthic index of biotic integrity (B-IBI) is an index composed of 10 metrics that assess benthic macroinvertebrate community health. The analysis presented here was conducted to enhance the use of macroinvertebrate data as a tool for focusing potential future restoration strategies. Results suggest that targeting restoration of physical habitat, specifically rebuilding riparian buffers and remediating excessive sources of sedimentation, could improve regional watershed health and water quality.
41	Whidbey Basin Small Streams Final	S:\Code Dev\CAR\2024 Update\SWM BAS\Leonetti	JUVENILE CHINOOK SALMON 42 REARING IN SMALL NON-NATAL STREAMS DRAINING INTO THE WHIDBEY BASIN	2013	Beamer et al.	Y	Statistical analysis suggests that four factors influence whether juvenile Chinook salmon are present within Whidbey Basin small streams: 1) distance to nearest Chinook salmon bearing river, 2) stream channel slope, 3) watershed area, and 4) presence and condition of culverts at the mouth of a stream. Streams further from Chinook salmon bearing rivers and with steeper channel slopes had lower juvenile Chinook salmon presence rates. A minimum watershed size of approximately 45 hectares with channel slopes less than 6.5% may be necessary before juvenile Chinook salmon potential exists. Small streams can be habitat for juvenile Chinook Salmon.
42	alberti_urban_aquatic_ecosystems	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	The impact of urban patterns on aquatic ecosystems: An empirical analysis in Puget lowland sub-basins	2006	Alberti et al	Y	We confirm that percent impervious surface does explain a great part of the variance in B-IBI across the sub-basins, but show that our hypothesized relationship between landscape pattern and stream biological condition can be better captured by other variables that describe the configuration and connectivity of the landscape such as mean patch size and number of road crossings
43	Blevins et al_2017	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	EXTINCTION RISK OF WESTERN NORTH AMERICAN FRESHWATER MUSSELS: ANODONTA NUTTALLIANA, THE ANODONTA OREGONENSIS/KENNERLYI CLADE, GONIDEAANGULATA,	2017	Blevins et al	Y	Streams throughout Snohomish County are host to important freshwater mussel species. A comparison of pre-1990 and 1990-2015 data show the range of this species is declined and this evaluation includes records from streams in our area. Describing species distribution in the area is important for estimating rate of species extinction and identifying concomitant changes to the landscape.

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			AND MARGARITIFERAFALCATA				
44	Cooke et al._2022	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Our Failure to Protect the Stream and its Valley: A call to back off from riparian development.	2022	Cooke et al	Y	One of the most immediate threats to integrity and biodiversity of our freshwater ecosystems is the lack of protection of floodplain and riparian areas immediately adjacent to waterways. Co-benefits of backing people and development away from the floodplain and riparian areas is a reduction in risk from property damage and loss of human life.
45	eap.1615	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Roads to ruin: conservation threats to a sentinel species across an urban gradient	2018	Feist et al	Y	Urbanization poses a global challenge to species conservation. we assess threats of urbanization to Coho salmon throughout developed areas of the Puget Sound Basin. We measured mortality rates in field surveys of 51 spawning sites across an urban gradient. Motor vehicles contaminants are the cause of coho spawner mortality. indicates an ongoing and widespread loss of spawners across much of the Puget Sound population segment, particularly within the major regional north-south corridor for transportation and development. Our findings identify current and future urbanization-related threats to wild coho, and show where green infrastructure and similar clean water strategies could prove most useful for promoting species conservation and recovery. we have shown where green stormwater infrastructure and other clean water strategies are most needed at the landscape and basin scales
46	Feist et al_2018	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	See above				
47	Feist_journal.pone.0023424	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Landscape Ecotoxicology of Coho Salmon Spawner Mortality in Urban Streams	2011	Feist et all	Y	We found that spawner mortality was most closely and positively correlated with the relative proportion of local roads, impervious surfaces, and commercial property within a basin. These and other correlated variables were used to identify unmonitored basins in the greater Seattle metropolitan area where recurrent coho spawner die-offs may be likely.
48	Hall 2018 PLoS One	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Duplicate of below				
49	Hall et al_2018	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Large river habitat complexity and productivity of Puget Sound Chinook salmon	2018	Hall et al	Y	Habitat throughout a watershed is interconnected and is critical for younger life stages of juvenile salmon. Habitat complexity and connectivity are key features for survival and the floodplains are conduits that have been simplified resulting in smaller areas of rearing habitat for fishes. The primary message is that creating and maintaining critical habitat is functional at the watershed scale where interconnectivity among projects results in functioning ecosystem with a measurable, positive benefit.
50	Horner paper	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	STRUCTURAL AND NON-STRUCTURAL BMPS FOR PROTECTING STREAMS		Horner et al	Y	Stream ecosystems in three different locations in the United States were found to benefit in a similar fashion from retention of watershed forest and wetland cover and wide, continuous riparian buffers with mature, native vegetation.
51	McBride_Puget Lowland Urban Streams	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Spatial effects of urbanization on physical conditions in Puget Sound Lowland streams	2001	McBride	Y	Physical conditions were best explained by three of the landscape metrics: the quantity of urban land in that part of the watershed draining to the sampled site, the quantity of urban land within 500 m upslope of the sampled site, and the proximity of the sampled site to the closest upstream road crossing. A stream's physical condition improved downstream from degraded reaches when the stream

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
							flowed through portions of intact forested riparian buffers devoid of road crossings. In sum, the results of this study suggest that if urban development can be built such that riparian areas are untouched, functioning stream reaches may be better preserved.
52	Plotnikoff and Blizard_2013	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Squalicum Creek and Soos Creek: Bioassessment Monitoring and Analysis to Support Total Maximum Daily Load (TMDL) Development	2013	Plotnikoff and Blizard	Y	Hydrological modifications associated with land use changes resulted in alteration of stormwater delivery volumes and timing to the streams.
53	Plotnikoff and Blizard_Appendixes_2013	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff					
54	Woods Cr Report_2013	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Duplicate of below				
55	Woods_Report_FINAL_2013	S:\Code Dev\CAR\2024 Update\SWM BAS\Plotnikoff	Woods Creek Watershed Habitat Conditions Report	2013	Snohomish Co	Y	Changes in land use leading to declines in Chinook salmon, coho salmon, and steelhead require a long-term plan to preserve remaining forests and wetlands. Recommended short-term actions include addition of large woody debris for increasing creation of deep pools, retention of fine sediment at the source(s) and increase riparian cover for salmonid rearing areas. Preservation of existing conditions that protect forest and wetland from encroaching development are effective steps in halting continuing decline in sensitive salmonid species.
56	08a_SSAGWhitePaper_Attachment 1	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	Factors Limiting Progress in Salmon Recovery		PSP Salmon Science Advisory Group	Y	In this paper, we examine reasons why Pacific salmon in the Puget Sound may not be showing signs of improvement to habitat restoration programs and conclude with some suggestions that may improve effectiveness of efforts in Puget Sound.
57	Final_Estuary Target Update Chinook Recovery Plan 5-11-14	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	Revised Restoration Targets for the Stillaguamish Estuary	2013	Stillaguamish Watershed Council	Y	Update to the 2005 plan with new data.
58	NOAA HARP Model Snohomish-Stillaguamish - Final Report 2022-09-30	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	Habitat Assessment and Restoration Planning (HARP) Model for the Snohomish and Stillaguamish River Basins	2022	Beechie et al	Y	We applied the Habitat Assessment and Restoration Planning (HARP) Model in the Stillaguamish and Snohomish River basins to help guide habitat restoration planning.
59	Primary_Drivers_Stillaguamish_final_9.30.15	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	SUMMARY OF PROJECTED CHANGES IN PHYSICAL CONDITIONS IN THE STILLAGUAMISH WATERSHED AND CEDED AREA	2015	UW Climate Impacts Group		Duplicate of above in Driscoll
60	Stillaguamish Flow Analysis June 2014 final report - NOAA	S:\Code Dev\CAR\2024 Update\SWM	Influence of climate and land cover on river discharge in	2014	Hall et al	Y	We found increasing trends in peak flows (1-day, 3-day and 7-day average high flows), and that those trends are most likely driven by long-term climate trends,

	Title in Folder	Saved location	Article/Report Title	Date Published	Author	Reviewed	Central Topics
		BAS\Stillaguamish Watershed Council	the North Fork Stillaguamish River				specifically increasing rainfall and decreasing snowfall. decadal oscillations in climate and the timing of clearcutting may have influenced low flows. These results indicate that climate trends and oscillations are a likely cause of changes in both flood flows and low flows, although low flows may also have been influenced to some degree by land use.
61	Stillaguamish Watershed Salmon Recovery Plan -- Jun	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	Stillaguamish Watershed Chinook Salmon Recovery Plan	2005	Stillaguamish Implementation Review Committee	Y	The Plan's recommendations include habitat projects to restore watershed processes that affect Chinook salmon populations, protection of existing habitat through regulatory and non-regulatory strategies, stewardship education and outreach, and a monitoring and adaptive management plan. • Revise existing policies and incorporate new policies to specifically address protection of salmon habitat. • Eliminate existing fish passage barriers such as culverts and tide gates and prevent the creation of new barriers; • Avoid subdividing of agricultural land. • Avoid clearing and development in riparian buffer areas, except for projects that will restore natural processes and native vegetation, through critical areas regulations. Some suggested monitoring criteria.
62	StillaguamishBasin_PeakFlowPriorities _Report_web	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	Peak Flows and Chinook Survival in the Stillaguamish Watershed	2014	Walter et al	Y	There is a trend of increasing peak flows in the North Fork Stillaguamish. Bad for salmon. Study looked at factors causing increase in peak flows. Actions to improve hydrological conditions for juvenile chinook: conservation acquisitions and ecological restoration.
63	SWC Woody Debris Target Final	S:\Code Dev\CAR\2024 Update\SWM 64BAS\Stillaguamish Watershed Council	Woody Debris Target Update of the Stillaguamish Chinook Recovery Plan	2016	Stillaguamish Watershed Council	Y	Updating woody debris targets from the Stillaguamish Watershed Salmon Recovery Plan using adaptive management.
64	Technical Assessment and Recommendations	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	TECHNICAL ASSESSMENT AND RECOMMENDATIONS FOR CHINOOK SALMON RECOVERY IN THE STILLAGUAMISH WATERSHED	2000	Stillaguamish Technical Advisory Group	Y	Substantial evidence has been accumulated to document the decline of chinook salmon in the Stillaguamish and throughout Puget Sound. Pre-cursory to recovery plan. Recommend a hatchery management plan, harvest management plan, and habitat management plan.
65	V.2 SWC acquisition strategy FINAL 10-1-2020	S:\Code Dev\CAR\2024 Update\SWM BAS\Stillaguamish Watershed Council	The Acquisition Strategy of the Stillaguamish Chinook Recovery Plan	2020	Stillaguamish Watershed Council	Y	It provides a framework to prioritize parcels along the major Chinook-bearing waters of the Stillaguamish, for both the long-term conservation and restoration of floodplain and instream processes. Goal of creating a corridor of protected lands along Stillaguamish.
66	Groundwater Management Plan	S:\Code Dev\CAR\2024 Update\BAS 2024 Update\SWM BAS	Snohomish County Ground Water Management Plan	May 1999	Golden Associates Inc	Y	A framework for continued protection of groundwater resources in Snohomish County. Plan includes 41 preferred strategies to protect and manage groundwater, including for instance, development of a water quality database for ground and surface water and investigating the feasibility of establishing an agricultural pesticide collection site.

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1.0002	Staff Research	June 2020	Staff	Economic Outcomes of Urban Floodplain Resotration: Implications for Puget Sound	39
1.0003	Staff Research	December 2012	Staff	Interagency Regulatory Guide: Advance Permittee-Responsible Mitigation, U.S Army Corps of Engineers, Ecology, WDFW	14
1.0004	Public Outreach	4/11/2024	Commerce	60 Day Notice, Department of Commerce acknowledgment	2
1.0005	Project Administration	August 2023	Staff	Internal scope memo with potential CAR updates	4
1.0006	Project Administration	7/19/2023	Staff	Internal scope presentation on RMZs	7
1.0007	Project Administration	8/16/2023	Staff	Internal scope presentation on CAR updates	31
1.0008	Project Administration	12/6/2023	Staff	Internal scope memo on CMZs	3
1.0009	Project Administration	August 2022	Staff	Internal CAR Review and Update kick-off	28
1.0010	Project Administration	9/21/2023	Staff	CAR update schedule	1
1.0011	SEPA Documents	4/25/2024	Staff	SEPA DNS postcard notification	1
1.0012	SEPA Documents	4/25/2024	Staff	SEPA DNS and Checklist	25
1.0013	SEPA Documents	4/25/2024	Staff	SEPA distribution list	3
1.0014	SEPA Documents	4/29/2024	Staff	SEPA publication confirmation from Ecology	1
1.0015	Public Outreach	November 2023	Staff	6th Newsletter with article requesting BAS from the public - English	8
1.0016	Public Outreach	November 2023	Staff	6th Newsletter with article requesting BAS from the public - Spanish	7
1.0017	Public Outreach	November 2023	Staff	6th Newsletter with article requesting BAS from the public - Korean	7
1.0018	Project Administration	1/12/2023	Staff	Correspondence with SWM regarding BAS	2
1.0019	Project Administration	3/15/2023	Staff	Correspondence with DPW regarding BAS	21
1.0020	Project Administration	3/10/2023	Staff	Stillaguamish Watershed Council BAS Correspondence	4
1.0021	Public Comment	3/17/2023	Snoqualmie Tribe	Snoqualmie Tribe correspondence on BAS	122
1.0022	Public Comment	9/15/2023	Futurewise	Correspondence about CAR schedule	2
1.0023	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.62A SCC posted online for 21-day comment period	71
1.0024	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.62B SCC posted online for 21-day comment period	26
1.0025	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.62C SCC posted online for 21-day comment period	11

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1.0026	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.43C SCC posted online for 21-day comment period	2
1.0027	Public Outreach	1/12/2024	Staff	Preliminary Draft Chapter 30.86 SCC posted online for 21-day comment period	1
1.0028	Public Outreach	1/12/2024	Staff	Preliminary Draft Definitions posted online for 21-day comment period	3
1.0029	Public Outreach	1/17/2024	Staff	Email notification to distribution list about 21 day public comment period	2
1.0030	Public Outreach	1/17/2024	Staff	Email notification to key parties about 21 day public comment period	2
1.0031	Public Outreach	1/17/2024	Staff	Press release notifying public of 21 day comment period	2
1.0032	Public Outreach	1/17/2024	Staff	Press release posting notification	1
1.0033	Public Outreach	1/17/2024	Staff	Social media postings about 21 day comment period	4
1.0034	Public Outreach	4/1/2024	Staff	Key parties list	7
1.0035	Public Comment	2/7/2024	Staff	21 day comment log	1
1.0036	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts - Scarborough	3
1.0037	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Neunzig	3
1.0038	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Krueger	4
1.0039	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Grandstaff	1
1.0040	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Luckie	3
1.0041	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Shaph	2
1.0042	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts -Rushing	2
1.0043	Public Comment	1/17/2024	Public	Public Comment on preliminary drafts - DeLeone	3
1.0044	Public Comment	1/18/2024	Public	Public Comment on preliminary drafts -Tamber	2
1.0045	Public Comment	1/18/2024	Public	Public Comment on preliminary drafts -Vivas	3
1.0046	Public Comment	1/18/2024	Public	Public Comment on preliminary drafts -Legare	2
1.0047	Public Comment	1/19/2024	Public	Public Comment on preliminary drafts -San Filippo	4
1.0048	Public Comment	1/22/2024	Public	Public Comment on preliminary drafts -Higgins	3
1.0049	Public Comment	1/24/2024	Public	Public Comment on preliminary drafts -Pattison	7
1.0050	Public Comment	1/23/2024	Public	Public Comment on preliminary drafts -Petso	2
1.0051	Public Comment	1/24/2024	Public	Public Comment on preliminary drafts -Sears	32
1.0052	Public Comment	1/29/2024	Public	Public Comment on preliminary drafts -Payne	6
1.0053	Public Comment	1/29/2024	Public	Public Comment on preliminary drafts -Spore	3
1.0054	Public Comment	1/31/2024	Public	Public Comment on preliminary drafts -Danson	2
1.0055	Public Comment	2/2/2024	Public	Public Comment on preliminary drafts -Atkins	73

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1.0056	Public Comment	2/5/2024	Public	Public Comment on preliminary drafts -Pattison	5
1.0057	Public Comment	2/6/2024	Public	Public Comment on preliminary drafts -Pozarycki	101
1.0058	Public Comment	2/6/2024	Public	Public Comment on preliminary drafts -Krueger	11
1.0059	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Gray	10
1.0060	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Trohimovich	18
1.0061	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Gray	4
1.0062	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Danson	178
1.0063	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Irish	8
1.0064	Public Comment	2/7/2024	Public	Public Comment on preliminary drafts -Lyshall	4
1.0065	Project Administration	3/27/2024	Staff	Internal responses to public comments	9
1.0066	Project Administration	3/27/2024	Staff	Internal memo incorporating public comments into drafts	28
1.0067	Public Outreach	11/14/2023	Staff	CAR Update presentation to Ag Board	11
1.0068	Public Outreach	2/13/2024	Staff	CAR Update presentation to Ag Board	13
1.0069	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - English	9
1.0070	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - Spanish	9
1.0071	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - Korean	9
1.0072	Public Outreach	March 2024	Staff	9th Newsletter with CAR Update - Vietnamese	9
1.0073	Public Outreach	3/23/2023	Staff	Correspondence with Ecology	3
1.0074	Public Outreach	9/20/2023	Staff	Correspondence with Ecology	2
1.0075	Public Outreach	12/4/2023	Staff	Correspondence with Ecology	2
1.0076	Public Outreach	2/16/2024	Staff	Correspondence with Ecology	169
1.0077	Public Outreach	3/1/2024	Staff	Correspondence with Ecology	43
1.0078	Public Outreach	3/13/2024	Staff	CAR Update presentation to Snohomish Farm Bureau	13
1.0079	Public Comment	2/29/2024	Staff	Correspondence with Health Department	3
1.0080	Public Outreach	2/22/2023	Staff	Correspondence with King Co	11
1.0081	Public Outreach	5/2/2023	Staff	Correspondence with King Co	3
1.0082	Public Outreach	5/11/2023	Staff	Correspondence with King Co	8
1.0083	Public Outreach	1/23/2024	Staff	Correspondence with MBA	5
1.0084	Project Administration	2/23/2024	Staff	Internal notes on MBA meetings	2
1.0085	Public Comment	3/12/2024	Staff	MBA public comment on interrupted buffers	3
1.0086	Public Outreach	10/19/2023	Staff	CAR update presentation to SCT - PAC	12
1.0087	Public Outreach	3/14/2024	Staff	CAR update presentation to SCT - PAC	13
1.0088	Public Outreach	2/26/2024	Staff	CAR update presentation to SLS	13
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1.0090	Public Comment	5/22/2023	Staff	Correspondence with WDFW	6

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1.0092	Public Comment	8/21/2023	Staff	WDFW resources	5
1.0093	Public Comment	12/7/2023	Staff	Correspondence with WDFW	4
1.0094	Staff Research	10/18/2023	Staff	Linking Kelp Science and Policy workshop #2	5
1.0095	Public Outreach	2/14/2024	Staff	Presentation on CARA to WUCC	6
1.0096	Public Outreach	1/12/2024	Staff	CAR website update	2
1.0097	Public Outreach	2/22/2024	Staff	CAR website update	2
1.0098	Public Outreach	5/2/2024	Staff	CAR website update	2
1.0099	Public Outreach	4/24/2024	Staff	Email notification of Planing Commission public hearing - key parties	1
1.0100	Public Outreach	4/24/2024	Staff	Email notification of Planing Commission public hearing - distribution list	2
1.0101	Public Outreach	4/24/2024	Staff	Email notification of Planing Commission public hearing - 21 day public commenters	1
1.0102	Project Administration	Jan 2024	Staff	CAR Monitoring Report	106
1.0103	Staff Research	March 2021	Ecology	Critical Aquifer Recharge Areas Guidance	149
1.0104	Staff Research	8/31/2023	Ecology	WRIA 5 Exempt Well Connections	1
1.0105	Staff Research	Oct 2023	Ecology	Appendix B Stillaguamish Reservation Accounting Report: Sept 26, 2005 - Dec 31, 2022	2
1.0106	Staff Research	Oct 2023	Ecology	Appendix A Stillaguamish Reservation Accounting Report: Sept 26, 2005 - Dec 31, 2022	2
1.0107	Staff Research	Oct 2023	Ecology	Stillaguamish Reservation Accounting Report: Sept 26, 2005 - Dec 31, 2022	2
1.0108	Staff Research	2023	Staff	Snohomish County Board of Health Ordinance No. BOH23-01	142
1.0109	Staff Research	May 1993	Ecology	Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems	22
1.0110	Staff Research	Jan 2017	DOH	Wellhead Protection Program Guidance Document	116
1.0111	Staff Research	7/31/2018	DOH	Wellhead Protection Areas: Protecting Drinking Water	5
1.0112	Staff Research	2007	Ecology	Education about Stormwater	4
1.0113	Staff Research	Feb 2015	Ecology	Permit-Exempt Domestic Well Use in Washington State	33
1.0114	Staff Research	Oct 2015	Ecology	Mitigation Options for the Impacts of New Permit-Exempt Groundwater Withdrawals	85
1.0115	Staff Research	Nov 2022	Commerce	Critical Areas Checklist	11
1.0116	Staff Research	4/10/2008	DOD, EPA	Federal Rule, Compensatory Mitigation for Losses of Aquatic Resources	113

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1.0118	Staff Research	April 2023	WDFW	Riparian Management Zone Checklist for Critical Areas Ordinances	5
1.0119	Staff Research	2/19/2010	Staff	New Chapter 365-196 WAC adopted language	92
1.0120	Staff Research	5/3/2001	Staff	New Chapter 365-195 WAC adopted language	5
1.0121	Staff Research	2/27/2015	Staff	New Chapter 365-190 WAC adopted language	22
1.0122	Staff Research	6/19/2008	Staff	Chapter 173-218 WAC Underground Injeciton Control Program	36
1.0123	Public Comment	1/31/2023	Public	Comment on Comp Plan	10
1.0124	Staff Research	Oct 2022	Ecology	Wetland Guidance for Critial Areas Ordinance (CAO) Updates	101
1.0125	Staff Research	Jan 2020	Commerce	Critical Area Checklist	10
1.0126	Staff Research	June 2016	Ecology	Wetland Guidance for CAO Updates	65
1.0127	Staff Research	2022	Staff	Voluntary Stewardship Program (VSP)	1
1.0128	Staff Research	Dec 2018	Commerce	Summary of Critical Area WAC Amendments	18
1.0129	Staff Research	6/9/1988	Staff	Chapter 173-154 WAC Protection of upper aquifer zones	5
1.0130	Staff Research	June 2018	Commerce	Critical Areas Handbook	442
1.0131	Staff Research	March 2006	Staff	Revised Draft Summary of Best Available Science for Critical Areas	196
1.0132	Staff Research	4/7/2015	Staff	Draft Summary Snohomish County 2015 Best Available Science Review for Critical Area Regulation Update - CAR BAS addendum for Ordinance 15-034	14
1.0133	Staff Research	1/13/2021	Staff	KNKX article, Settlement agreement says state must protect endangered species from polluted runoff	4
1.0134	Staff Research	Nov 2022	Ecology	Focus on: Voluntary Clean Water Guidance for Agriculture	2
1.0135	Staff Research	Dec 2022	Ecology	Voluntary Clean Water Guidance for Agriculture Chapters, Chapter 6	56
1.0136	Staff Research	Dec 2022	Ecology	Voluntary Clean Water Guidance for Agriculture Chapters, Chapter 12	444
1.0137	Staff Research	Dec 2022	Ecology	Voluntary Clean Water Guidance for Agriculture Introduction	12
1.0138	Staff Research	1/8/2021	Commerce	Case No. C16-1866-JCC Stipulated Order of Dismissal	16
1.0139	Staff Research	June 2022	WA GS	Landslide Hazard Mapping in Washington	2
1.0140	Staff Research	July 2022	WA GS	Landslide Inventory of Portions of Snohomish County, WA	13
1.0141	Staff Research	April 2021	WA GS	Tsunami Hazard Maps of the Puget Sound and Adjacent Waters	71
1.0142	Staff Research	Feb 2004	Ecology	Stillaguamish River Comprehensive Flood Hazard Management Plan	215

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1.0144	Staff Research	Sep 2010	Staff	Snohomish County Natural Hazard Mitigation Plan Update Volume 1: Planning-Area-Wide Elements	28
1.0145	Staff Research	2000	USACE	Preliminary design proposal for treatment of the Hazel and Goldbasin Landslides	17
1.0146	Staff Research	6/19/2000	Staff	Steelhead Haven Landslide	50
1.0147	Staff Research	2010	Staff	Chapter 14: Landslides and Other Mass Movements	13
1.0148	Staff Research	10/18/1999	Staff	Hazel/Gold Basin Landslides: Geomorphic Review Draft Report	25
1.0149	Staff Research	3/26/2014	Staff	Seismic Signals generated by the Oso Landslide	10
1.0150	Staff Research	4/26/2001	Staff	Steelhead Haven Landslide Remediation Feasibility Study	59
1.0151	Staff Research	2014	USGS	Preliminary Interpretation of Pre-2014 Landslide Deposits in the Vicinity of Oso, Washington	6
1.0152	Staff Research	Aug 2019	Staff	Towards ecologically functional riparian zones	8
1.0153	Staff Research	2/19/2023	Clark Co	Designating Riparian Habitat Areas Using WAC 222 Site Class and 200-year Site Potential Tree Height	22
1.0154	Staff Research	July 2022	WDFW	WDFW GMA Assistance	5
1.0155	Staff Research	July 2020	WDFW	Riparian Ecosystems, Volume 1	304
1.0156	Staff Research	Dec 2020	WDFW	Riparian Ecosystems, Volume 2	75
1.0157	Staff Research	Dec 2023	DOH	Water Quality Poilcy Presentation	13
1.0158	Staff Research	2018	DOH	UIC Final Language Update	13
1.0159	Staff Research	2019	Ecology	2019 SMMWW - Volume 1, Section 1.4 IC Program	44
1.0160	Staff Research	Sep 2000	EPA	State Implementation Guide, Revisions to the Underground Injection Control Regulations for Class V Injection Wells	51
1.0161	Staff Research	June 2021	Ecology	Underground Injection Control (UIC) Stormwater Management Program (SWMP) Components	7
1.0162	Staff Research	6/11/2008	EPA	Clarification on which stormwater infiltration practices/technologies have the potential to be regulated as "Class V" wells by the Underground Injection Control Program	6
1.0163	Staff Research	June 2003	EPA	When is a septic system regulated as a Class V Well?	4
1.0164	Staff Research	June 2003	EPA	When are storm water discharges regulated as Class V wells?	2
1.0165	Staff Research	April 2022	Staff	Potential effects on groundwater quality associated with infiltrating stormwater through dry wells for aquifer recharge	58
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1.0168	Staff Research	Sep 2008	Staff	Design requirements for infiltration trenches with soils considered a treatment BMP	2
1.0169	Staff Research	April 2020	EPA	Underground Injection Control Program	2
1.0170	Staff Research	April 2013	Staff	Groundwater Protectiveness Demonstrations	86
1.0171	Staff Research	April 2010	FEMA	Floodplain Management and the Endangered Species Act Checklist for Programmatic Compliance	28
1.0172	Staff Research	Jan 2012	FEMA	Floodplain Management and the Endangered Species Act A Model Ordinance	87
1.0173	Staff Research	9/22/2008	Commerce	Endangered Species Act Section 7 Fromal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the on-going National Flood Insurance Program carried out in the Puget Sound area in Washington State	238
1.0174	Staff Research	4/20/2009	NMFS	National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion Environmental Protection Agency Registration of Pesticides Containing Carbaryl, Carbofuran, and Methomyl	609
1.0175	Staff Research	5/19/2021	Staff	ESA Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response	407
1.0176	Staff Research	2010	Staff	4 abstracts	3
1.0177	Staff Research	Feb 2010	Ecology	Marine Shoreline Armoring and Puget Sound	8
1.0178	Staff Research	Sep 2016	Commerce	Building Cities in the Rain	55
1.0179	Staff Research	12/23/2009	Staff	Conservation Tools: An Evaluation and Comparison of th eUse of Certain Land Preservation Mechanisms	86
1.0180	Staff Research	2023	DNR	ShoreZone Inventory	4
1.0181	Staff Research	Jan 2022	DNR	Watershed Resilience Action Plan	100
1.0182	Staff Research	July 2014	Ecology	A Methodology for Delineating Planning-Level Channel Migration Zones	83
1.0183	Staff Research	July 2018	Ecology	Modifications for Habitat Score Ranges	5
1.0184	Staff Research	Oct 2014	Ecology	Washington State Wetland Rating System	212
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1.0186	Staff Research	April 2018	Ecology	Homeowners' Guide to Wetlands & Buffers	4
1.0187	Staff Research	April 2021	Ecology	Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance	275
1.0188	Staff Research	Dec 2022	Ecology	Washington's Water Quality Management Plan to Control Nonprofit Sources of Pollution	285
1.0189	Staff Research	1/28/2010	Staff	U.S. Fish & Wildlife Services Proposes Dramatic Expansion of Critical Habitat for Threatened Bull Trout	4
1.0190	Staff Research	Feb 2010	Ecology	Shorelands and Environmetnal Assistance Program: Healthy shorelines equal a healthy Puget Sound	5
1.0191	Staff Research	Dec 2021	Staff	Jay Inslee, Saving out struggling salmon	9
1.0192	Staff Research	2022	Staff	Kelp and eelgrass	
1.0193	Staff Research	May 2020	Staff	Puget Sound Kelp Conservation and Recovery Plan	63
1.0194	Staff Research	Oct 2023	Staff	Puget Sound Kelp Conservation and Recovery Plan: Status Update	73
1.0195	Staff Research	3/21/2022	Staff	WA Creaes first sea grass and kelp sanctuary off Everett	5
1.0196	Staff Research	June 2009	WDFW	Land use planning for salmon, steelhead and trout: A land use planner's guide to salmonid habitat proteciton and recovery	119
1.0197	Staff Research	2022	Staff	Links for critical area information	1
1.0198	Staff Research	March 1997	DNR	A Marine and Estuarine Habitat classificaiton system for Washington State	57
1.0199	Staff Research	Oct 2007	Staff	Protecting nearshore habitat and functions in Puget Sound: An interim guide	134
1.0200	Staff Research	Dec 2005	Ecology	Protecting Aquatic Ecosystems: A guide for Puget Sound planners to understand watershed processes	171
1.0201	Staff Research	Jan 2023	PSP	Action Items	46
1.0202	Staff Research	Oct 2023	PSP	2022-2026 Action Agenda Executive Summary	6
1.0203	Staff Research	Aug 2013	FEMA	Floodplain Habitat Assessment and Mitigation: Regional Guidance for the Puget Sound Basin	50
1.0204	Staff Research	3/3/2009	Staff	Study: Combining pesticides makes them more deadly for fish	4
1.0205	Staff Research	8/1/2017	BLM	Site Potential Tree Height Spatial Data Standard	18
1.0206	Staff Research	May 2023	Staff	Watershed Restoration and Enhancement Plan Review Report	37
1.0207	Staff Research	2020	Staff	2020 State of Our Watersheds: A Report by the Treaty Tribes in Western Washington	390

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1.0209	Staff Research	Dec 2009	WDFW	Appendix B: Landscape Planning for Washington Wildlife	132
1.0210	Staff Research	Dec 2009	WDFW	Landscape Planning for Washington Wildlife: Managing for Biodiversity in Developing Areas	163
1.0211	Staff Research	2023	SPU	Watershed Processes and Aquatic Resources: A literature review	70
1.0212	Staff Research	6/16/2008	WDFW	Eelgrass/Macroalgae Habitat Interim Survey Guidelines	6
1.0213	Staff Research	2014	WDFW	Marine Shoreline Design Guidelines	419
1.0214	Staff Research	2024	WDFW	Your Marine Waterfront: A guide to protecting your property while promoting healthy shorelines	48
1.0215	Staff Research	2021	Staff	Urban Stormwater Runoff: A major Pathway for Anthropogenic Particles, Black Rubbery Fragments, and Other Types of Microplastics to Urban Receiving Waters	9
1.0216	Staff Research	2/9/2016	Whatcom Co	Whatcom County Critical Areas Ordinance 2016 Update - Best Available Science Review: Addendum to the 2005 BAS Report	35
1.0217	Staff Research	Nov 2000	Staff	Stillaguamish River Ecosystem Restoration Puget Sound and Adjacent Waters Authority Final Environmental Assessment	155
1.0218	Staff Research	Nov 2000	Staff	Stillaguamish River Ecosystem Restoration Final Feasibility Report	284
1.0219	Staff Research	12/9/2021	Ecology	Public Hearing: Chapter 173-201A WAC Salmon Spawning Habitat Protection Rule	42
1.0220	Staff Research	June 2022	Ecology	Stormwater Treatment of the Contaminants Best Management Practices Effectiveness	72
1.0221	Staff Research	2022	NMFS	Coho Salmon spawner mortality in western U.S. urban watersheds: bioinfiltration prevents lethal stormwater impacts	36
1.0222	Staff Research	10/8/2015	Staff	Toxic road runoff kills adult coho salmon in hours, study finds	4
1.0223	Staff Research	1/13/2021	Staff	Settlement agreement says state must protect endangered species from polluted runoff	3
1.0224	Staff Research	7/26/2018	Staff	Roads to ruin: conservation threats to a sentinel species across an urban gradient	15
1.0225	Staff Research	2023	Staff	Roads to ruin abstract	1
1.0226	Staff Research	2023	Staff	Eelgrass Trend Monitoring Map for Snohomish	2
1.0227	Staff Research	2023	Staff	Forage Fish Spawning Map abstract and link	2

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1.0229	Staff Research	2023	Staff	Marine Vegetation Mappin gof Port Susan and Hat Island abstract	2
1.0230	Staff Research	2022	Staff	Marine Vegetation Mapping of South Snohomish County	10
1.0231	Staff Research	2022	Staff	Marine Vegetation Mapping of South Snohomish County abstract	2
1.0232	Staff Research	2021	Staff	Marine Vegetation Mapping of the Snohomish Delta	10
1.0233	Staff Research	2021	Staff	Marine Vegetation Mapping of the Snohomish Delta abstract	2
1.0234	Staff Research	Sep 2020	Staff	Railroad Grade Beach Nourishment Study	171
1.0235	Staff Research	2020	Staff	Snohomish Beach Nourishment Monitoring Report abstract	1
1.0236	Staff Research	2017	Staff	Science and Salmon Recovery	23
1.0237	Staff Research	2/14/2019	Staff	Benefit Cost Analysis of Shore Friendly Practices in Island County	25
1.0238	Staff Research	Sep 2012	Staff	Estuary Resotration Target Update to the Stillaguamish Chinook Recovery Plan	6
1.0239	Staff Research	May 2017	Staff	Stillaguamish Tribe of Indians Natural Resources Climate Change Adaptation Plan	107
1.0240	Staff Research	July 2018	Staff	Puget Sound Restoration Additonal Actions Could Improve assessments of Progress	94
1.0241	Staff Research	Feb 2021	Staff	Landscape , density-dependent, and bioenergetic influences unpon Chinook Salmon - abstract	3
1.0242	Staff Research	Feb 2021	Staff	Landscape , density-dependent, and bioenergetic influences unpon Chinook Salmon -	165
1.0243	Staff Research	11/1/2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook Salmon	23
1.0244	Staff Research	Sept 2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook Salmon - abstract	1
1.0245	Staff Research	2/16/2012	Staff	Beaver in Tidal Marshes: Dam Effects on Low-Tide Channel Pools and Fish Use of Estuarine Habitat	12
1.0246	Public Comment	4/15/2024	DNR	Public comment on CAR amendments from DNR	4
1.0247	Public Comment	4/19/2024	Ecology	Public comment on CAR amendments from Ecology	78
1.0248	Public Comment	4/25/2024	Olympic View	Public comment on CAR amendments from Olympic View Water and Sewer District	3
1.0249	Public Comment	5/13/2024	Tulalip Tribes	Public comment on CAR amendments from The Tulalip Tribes	9

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1.0250	Public Comment	5/15/2024	Snoqualmie Tribe	Public comment on CAR amendments from the Snoqualmie Indian Tribe	6
1.0251	Public Comment	5/15/2024	Olympic View	Public comment on CAR amendments from Olympic View Water and Sewer District	179
1.0252	Staff Research	2012	Staff	Beaver in Tidal Marshes: Dam Effects on Low-Tide Channel Pools and Fish Use of Estuarine Habitat - abstract	1
1.0253	Staff Research	2005	Staff	Juvenile salmonid use of constructed and natural side channels in Pacific Northwest rivers	11
1.0254	Staff Research	2005	Staff	Juvenile salmonid use of constructed and natural side channels in Pacific Northwest rivers - abstract	1
1.0255	Staff Research	9/30/2015	Staff	Summary of projected changes in physical conditiosn in the Stillaguamish Watershed and ceded area	30
1.0256	Staff Research	Oct 2018	Staff	Sealevel rise considerations for nearshore restoration proejcts in Puget Sound	41
1.0257	Staff Research	11/22/2018	Staff	Influences of valley form and land use on large river and floodplain habitats in Puget Sound	13
1.0258	Staff Research	9/30/15	Staff	Stillaguamish Tribe natural resources climate chagne vulnerability assessment	102
1.0259	Staff Research	2/8/2016	Staff	Woody debris target update of the Stillaguamish chinook recovery plan	14
1.0260	Staff Research	2018	Staff	Tidal flat-wetland systems as flood defenses: Understanding biogeomorphic controls	14
1.0261	Staff Research	2018	Staff	Tribal habitat strategy	12
1.0262	Staff Research	10/1/2020	Staff	The acquisition strategy of the Stillaguamish chinook recovery plan	30
1.0263	Staff Research	3/8/2023	Staff	Comparison of Channel Migration Zone Methodology	5
1.0264	Staff Research	Nov 2003	Staff	A framework for delineating channel migration zones	135
1.0265	Staff Research	Feb 2015	Staff	Screening tools for identifying migrating stream channels in Western Washington	40
1.0266	Staff Research	2010	Staff	Regional guidance for hydrologic and hydraulic studies	28
1.0267	Staff Research	2010	Staff	Regional guidance for hydrologic and hydraulic studies - abstract	1
1.0268	Staff Research	Oct 2022	Staff	6PPD in road runoff assessment and mitigation strategies	234
1.0269	Staff Research	2022	Staff	6PPD in road runoff assessment and mitigation strategies - abstract	1

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1.0270	Staff Research	2022	Staff	Biochar and gungi as bioretention amendments for bacteria and PAH removal from stormwater	10
1.0271	Staff Research	2022	Staff	Biochar and gungi as bioretention amendments for bacteria and PAH removal from stormwater - abstract	2
1.0272	Staff Research	2017	Staff	Effects of urban tree canopy loss on land surface temperature magnitude and timing	16
1.0273	Staff Research	2017	Staff	Effects of urban tree canopy loss on land surface temperature magnitude and timing - abstract	1
1.0274	Staff Research	2009	Staff	Is denser greener? An evaluation of higher density development as an urban stormwater-quality best management practice	15
1.0275	Staff Research	2009	Staff	Is denser greener? An evaluation of higher density development as an urban stormwater-quality best management practice - abstract	1
1.0276	Staff Research	Nov 2015	Staff	Strategies for protecting and restoring Puget Sound B-IBI basins	118
1.0277	Staff Research	Nov 2015	Staff	Strategies for protecting and restoring Puget Sound B-IBI basins - abstract	1
1.0278	Staff Research	2022	Staff	Quantifying the stormwater runoff volume reduction benefits of urban street tree canopy	9
1.0279	Staff Research	2022	Staff	Quantifying the stormwater runoff volume reduction benefits of urban street tree canopy - abstract	1
1.0280	Staff Research	2021	Staff	City of Seattle tree canopy assessment final report	53
1.0281	Staff Research	2021	Staff	City of Seattle tree canopy assessment final report - abstract	2
1.0282	Staff Research	May 2018	Staff	Stormwater action monitoring status and trends study of Puget Lowland ecoregion streams: Evaluaiton of the first year (2015) of monitoring data	229
1.0283	Staff Research	May 2018	Staff	Stormwater action monitoring status and trends study of Puget Lowland ecoregion streams: Evaluaiton of the first year (2015) of monitoring data -abstract	1
1.0284	Staff Research	2009	Staff	Exploring the role of vegetation fragmentation on aquatic conditions: Linking upland with riparian areas in Puget Sound lowland streams	10
1.0285	Staff Research	2016	Staff	Multiscale impacts of armoring on Salish Sea shorelines: Evidence for cumulative and threshold effects	12

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1.0286	Staff Research	April 2014	Staff	Identifying stressor risk to biological health in streams and small rivers of Western Washington	50
1.0287	Staff Research	12/3/2013	Staff	Juvenile Chinook salmon rearing small non-natal streams draining into the Whidbey basin	74
1.0288	Staff Research	2007	Staff	The impact of urban patterns on aquatic ecosystems: An empirical analysis in Puget lowlands sub-basins	17
1.0289	Staff Research	2007	Staff	The impact of urban patterns on aquatic ecosystems: An empirical analysis in Puget lowlands sub-basins - abstract	1
1.0290	Staff Research	2017	Staff	Extinction risk of western north American freshwater mussels: Anodonta Nuttalliana, the Anodonta Oregonensis/Kennerlyi Clade, Gonidea Angulata, and Margaritifera Falcata	18
1.0291	Staff Research	2017	Staff	Extinction risk of western north American freshwater mussels: Anodonta Nuttalliana, the Anodonta Oregonensis/Kennerlyi Clade, Gonidea Angulata, and Margaritifera Falcata - abstract	1
1.0292	Staff Research	2004	Staff	Reviving urban streams: land use, hydrology, biology, and human behavior	14
1.0293	Staff Research	2004	Staff	Reviving urban streams: land use, hydrology, biology, and human behavior - abstract	1
1.0294	Staff Research	2022	Staff	Our failure to protect the stream and its valley: A call to back off from riparian development	12
1.0295	Staff Research	2022	Staff	Our failure to protect the stream and its valley: A call to back off from riparian development - abstract	1
1.0296	Staff Research	2011	Staff	Landscape ecotoxicology of Coho salmon spawner mortality in urban streams	11
1.0297	Staff Research	2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook salmon	23
1.0298	Staff Research	2018	Staff	Large river habitat complexity and productivity of Puget Sound Chinook Salmon - abstract	1
1.0299	Staff Research	4/26/2012	Staff	Structural and non-structural BMPs for protecting streams	18
1.0300	Staff Research	2001	Staff	Spatial effects of urbanization on physical conditions in Puget Sound Lowland streams	108

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1.0302	Staff Research	April 2013	Staff	Squalicum Creek and Soos Creek: Bioassessment monitoring and analysis to support total maximum daily load (TMDL) development - abstract	1
1.0303	Staff Research	April 2013	Staff	Squalicum Creek and Soos Creek: Bioassessment monitoring and analysis to support total maximum daily load (TMDL) development - appendicies	165
1.0304	Staff Research	Jan 2013	Staff	Woods Creek Watershed Habitat Conditions Report	52
1.0305	Staff Research	Jan 2013	Staff	Woods Creek Watershed Habitat Conditions Report - abstract	1
1.0306	Staff Research	2021	Staff	Factors Limiting Progress in Salmon Recovery	49
1.0307	Staff Research	10/31/2013	Staff	Revised restoration targets for the Stillaguamish estuary	9
1.0308	Staff Research	2022	Staff	Habitat assessment and restoration planning (HARP) model for the Snohomish and Stillaguamish River basins	150
1.0309	Staff Research	June 2014	Staff	Influence of climate and land cover on river discharge in the North Fork Stillaguamish River	41
1.0310	Staff Research	June 2005	Staff	Stillaguamish Watershed Chinook Salmon Recovery Plan	187
1.0311	Staff Research	9/25/2014	Staff	Peak flows and Chinook survival in the Stillaguamish watershed special prioritization for conservation and restoration action	95
1.0312	Staff Research	Sep 2000	Staff	Technical assessment and recommendations for Chinook salmon recovery in the Stillaguamish watershed	151
1.0313	Staff Research	May 1999	Staff	Snohomish County Ground Water Management Plan	297
1.0314	Staff Research	March 2005	Staff	Wetlands in Washington State Volume 1: A synthesis of the science	532
1.0315	Staff Research	April 2005	Staff	Wetlands in Washington State Volume 2: Guidance for Protecting and Managing Wetlands	398
1.0316	Staff Research	June 2023	Staff	State of Washingon Priority Habitats and Species List	299
1.0317	Staff Research	June 2023	Staff	Distribution of priority habitat and species by County	38
1.0318	Staff Research	10/19/2015	Staff	Ecological Systems of Washington state. A Guide to identification	398
1.0319	Staff Research	8/4/2015	Staff	Conservation Status Ranks of Washington's Ecological Systems	266

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1.0320	Staff Research	9/31/2021	Staff	2021 Washington Vascular Plant Species of Conservation Concern	48
1.0321	Staff Research	9/31/2021	Staff	2021 Washington Vascular Plant Species Review Lists 1 & 2	18
1.0322	Staff Research	2016	Staff	Washington Natural Heritage Program 2016 Ecological Systems List	5
1.0323	Staff Research	1996	Staff	Washington Natural Heritage Program List of Mosses	4
1.0324	Staff Research	2011	Staff	Washington Natural Heritage Program List of Lichens	4
1.0325	Staff Research	2011	Staff	Washington Natural Heritage Program List of Macrofungi	3
1.0326	Staff Research	2012	Staff	Washington Natural Heritage Program List of Marine Algae	2
1.0327	Staff Research	Jan 2024	Staff	Washington Natural Heritage Program List of Animal Species with Ranks	66
1.0328	Staff Research	Dec 2008	Staff	Making Mitigation Work	40
1.0329	Public Comment	5/23/2024	Tulalip Tribes	Public comment on CAR update	7
1.0330	Public Comment	5/28/2024	Staff	DPW comment on CAR update	23
1.0331	Public Comment	5/30/2024	Snoqualmie Tribe	Public comment on CAR update	3
1.0332	Public Comment	6/3/2024	Public	Public comment/questions on CAR update	2
1.0333	Public Comment	6/6/2024	DFW	Public comment on CAR update	3
1.0334	Public Comment	6/10/2024	DOH	Public comment on CAR update	2
1.0335	Public Comment	6/17/2024	Ecology	Public comment on CAR update	8
1.0336	Public Comment	6/17/2024	Public	Public comment on CAR update from Futurewise	11
1.0337	Public Comment	7/9/2024	Olympic View	Public comment/questions on CAR update	11
1.0338	Public Comment	8/2/2024	Public	Public comment on CAR update - Edmonds Environmental Council on CARAs	1
1.0339	Public Comment	8/2/2024	Public	2024 Madrona Stormwater Sampling Results - from Edmonds Environmental Council	76
1.0340	Public Comment	7/8/2024	DFW	Process questions on CAR update	2
1.0341	Public Comment	7/16/2024	Public	Public comment on CAR update - PSP	1
1.0342	Public Comment	7/26/2024	Ecology	Draft Public comment on CAR update	10
1.0343	Public Comment	7/29/2024	Ecology	Public comment on CAR update - letter to Council	4
1.0344	Staff Research	12/1/2006	Ecology	Guidance for UIC Wells that Manage Stormwater (05-10-067)	17
1.0345	Staff Research	12/1/2016	Ecology	Industrial Stormwater General Permit - Implementation Manual for Log Yards (04-10-031)	43
1.0346	Staff Research	6/13/2008	USEPA	Memorandum: Clarification on which stormwater infiltration practices/technologies have potential to be regulated as "Class V" wells by the Underground Injection Control Program	6

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1.0347	Staff Research	7/3/2024	DNR	2024 Washington Vascular Plant Species of Conservation Concern	53
1.0348	Staff Research	2007	Staff	2007 CAR Index of Record	162
1.0349	Staff Research	2014	Staff	2014 CAR Index of Record for Ordinance 15-034 (Compliance Update)	17
1.0350	Staff Research	2017	Staff	2017 CAR Index of Record for Ordinance 17-039 (Appeal)	4
1.0351	Staff Research	2013	Staff	CAR Index of Record for Ordinance 13-042 (Agriculture)	16
1.0352	Staff Research	2015	Staff	BAS Annotated Bibliography for Ordinance 15-034	40
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2.0001	Public Outreach	4/9/2024	Planning Commission	Planning Commission Agenda (Briefing)
2.0002	Public Outreach	4/23/2024	The Herald	Affidavit of Agenda publication in The Herald (Briefing)
2.0003	Legislative Documents	4/9/2024	PDS Staff	Staff Report (Briefing)
2.0004	Legislative Documents	4/9/2024	PDS Staff	Attachment A - annotated bibliography
2.0005	Legislative Documents	4/9/2024	PDS Staff	Attachment B - chapter 30.62A SCC_4-8-24
2.0006	Legislative Documents	4/8/2024	PDS Staff	Attachment C - chapter 30.62B SCC_4-8-24
2.0007	Legislative Documents	4/8/2024	PDS Staff	Attachment D - 2024 draft revisions CARA_v4_4-8-24
2.0008	Legislative Documents	4/8/2024	PDS Staff	Attachment E - chapter 30.43C SCC
2.0009	Legislative Documents	4/8/2024	PDS Staff	Attachment F - chapter 30.86 SCC
2.0010	Legislative Documents	4/8/2024	PDS Staff	Attachment G - Subtitle 30.9
2.0011	Legislative Documents	4/8/2024	PDS Staff	Attachment H - Critical Area Checklist 2022
2.0012	Public Outreach	4/22/2024	PDS Staff	Presentation (Briefing)
2.0013	Public Outreach	5/28/2024	Planning Commission	Planning Commission Written Meeting Minutes (Briefing)
2.0014	Public Outreach	4/24/2024	Planning Commission	Planning Commission Recording of Meeting (Briefing)
2.0015	Public Outreach	5/14/2024	Planning Commission	Planning Commission Agenda (Hearing)
2.0016	Public Outreach	6/5/2024	The Herald	Affidavit of Agenda publication in The Herald (Hearing)
2.0017	Legislative Documents	5/13/2024	PDS Staff	Memo: Response to Planning Commissioner Questions
2.0018	Legislative Documents	5/13/2024	PDS Staff	Memo: Additional Chapter 30.62A SCC Proposed Amendments
2.0019	Legislative Documents	5/13/2024	PDS Staff	Proposed Amendments: chapter 30.62A SCC
2.0020	Public Outreach	6/25/2024	Planning Commission	Planning Commission Written Meeting Minutes (Hearing)
2.0021	Public Outreach	5/28/2024	Planning Commission	Planning Commission Meeting Recording (Hearing)
2.0022	Public Testimony	5/22/2024	Campbell, Tom	Letter of Public Testimony
2.0023	Public Testimony	5/22/2024	Vail, Marilyn	Letter of Public Testimony
2.0024	Public Testimony	5/22/2024	Riordan, Janet	Letter of Public Testimony
2.0025	Public Testimony	5/22/2024	Bennett, Brooks	Letter of Public Testimony
2.0026	Public Testimony	5/22/2024	Wade, Valerie	Letter of Public Testimony
2.0027	Public Testimony	5/22/2024	Cooper, Laurie	Letter of Public Testimony
2.0028	Public Testimony	5/22/2024	Albright, Gary	Letter of Public Testimony
2.0029	Public Testimony	5/22/2024	Monroe, Christy	Letter of Public Testimony
2.0030	Public Testimony	5/23/2024	Sebring, Sally	Letter of Public Testimony
2.0031	Public Testimony	5/23/2024	Byrd, Karen	Letter of Public Testimony
2.0032	Public Testimony	5/23/2024	Lauzon, Charlene	Letter of Public Testimony
2.0033	Public Testimony	5/23/2024	Shemeta, Susan	Letter of Public Testimony
2.0034	Public Testimony	5/23/2024	Singer, Connie	Letter of Public Testimony
2.0035	Public Testimony	5/23/2024	Jamison, Vanessa	Letter of Public Testimony
2.0036	Public Testimony	5/23/2024	Fortner, Wayne	Letter of Public Testimony
2.0037	Public Testimony	5/23/2024	Young, Connie	Letter of Public Testimony
2.0038	Public Testimony	5/23/2024	Master Builders Association (Pattison, Mike)	Letter of Public Testimony
2.0039	Public Testimony	5/23/2024	Turner, Douglas	Letter of Public Testimony

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2.0040	Public Testimony	5/23/2024	Johnson, Kathy	Letter of Public Testimony
2.0041	Public Testimony	5/23/2024	Guzak, Karen	Letter of Public Testimony
2.0042	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Letter of Public Testimony
2.0043	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	2021 Washington Vascular Plant Species of Conservation Concern
2.0044	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Economic Analysis of Outdoor Recreation in Washington State 2020 Update
2.0045	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Priority Habitats and Species (PHS) List
2.0046	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	2022 State of Salmon in Watersheds Executive Summary
2.0047	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Southern Resident Killer Whale Priority Chinook Stocks
2.0048	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	2020 State of Our Watersheds State of Our Watersheds
2.0049	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Management recommendations for Washington's Priority Species, Volume III Amphibians and Reptiles
2.0050	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Riparian Ecosystems, Volume 1 Science Synthesis and Management Implications
2.0051	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Riparian Ecosystems, Volume 2 Management Recommendations
2.0052	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Wetlands in Washington State Volume 1 A Synthesis of the Science
2.0053	Public Testimony	5/23/2024	Futurewise (Trohimovich, Tim)	Critical Aquifer Recharge Areas Guidance Document
2.0054	Public Testimony	5/28/2024	Heydrick, Judy	Letter of Public Testimony
2.0055	Public Testimony	5/28/2024	Karimi,Parnian	Letter of Public Testimony
2.0056	Public Testimony	5/28/2024	Heydrick, Stanley	Letter of Public Testimony
2.0057	Public Testimony	5/28/2024	Lider, Sally	Letter of Public Testimony
2.0058	Public Testimony	5/28/2024	Sandvig, Daniel	Letter of Public Testimony
2.0059	Public Testimony	5/28/2024	Benedict, Derek	Letter of Public Testimony
2.0060	Public Testimony	5/28/2024	Kuhn, Susan	Letter of Public Testimony
2.0061	Public Testimony	5/28/2024	James, Mark	Questions RE_ Proposed SnoCo Critical Areas Regulations
2.0062	Public Testimony	5/28/2024	Olympic View Water and Sewer District (Danson, Bob)	Letter of Public Testimony
2.0063	Public Testimony	5/28/2024	DEPARTMENT OF FISH AND WILDLIFE (Whittaker, Kara)	Letter of Public Testimony
2.0064	Public Testimony	5/28/2024	Audubon Washington (Maxwell, Adam)	Letter of Public Testimony
2.0065	Public Testimony	5/28/2024	PDS Staff	FW_ CAR Public Hearing - potential response to some public comments
2.0066	Public Testimony	5/28/2024	PDS Staff	FW_ Questions RE_ Proposed SnoCo Critical Areas Regulations
2.0067	Public Outreach	6/11/2024	Planning Commission	Planning Commission Agenda (Deliberations)
2.0068	Public Outreach	6/25/2024	The Herald	Affidavit of Agenda publication in The Herald (Deliberations)
2.0069	Legislative Documents	4/9/2024	PDS Staff	Staff Report (Deliberations)
2.0070	Legislative Documents	6/11/2024	PDS Staff	CAR Package Memo

Index of Records

Project Name	2024 CAR Update		
Part 2 - PLANNING COMMISSION			

Exhibit #	Record Type	Date	Received From	Exhibit Description
2.0071	Legislative Documents	6/6/2024	PDS Staff	Attachment A -updated annotated bibliography
2.0072	Legislative Documents	6/11/2024	PDS Staff	Attachment B - chapter 30.62A SCC_6-4-24
2.0073	Legislative Documents	4/8/2024	PDS Staff	Attachment C - chapter 30.62B SCC_4-8-24
2.0074	Legislative Documents	4/8/2024	PDS Staff	Attachment D - 2024 draft revisions CARA_v4_4-8-24
2.0075	Legislative Documents	4/8/2024	PDS Staff	Attachment E - chapter 30.43C SCC
2.0076	Legislative Documents	4/8/2024	PDS Staff	Attachment F - chapter 30.86 SCC
2.0077	Legislative Documents	4/8/2024	PDS Staff	Attachment G - Subtitle 30.9
2.0078	Legislative Documents	4/8/2024	PDS Staff	Attachment H - Critical Area Checklist 2022
2.0079	Legislative Documents	5/13/2024	PDS Staff	Further Amendments to Chap 30.62A SCC_5-3-24
2.0080	Legislative Documents	5/13/2024	PDS Staff	PC question responses_5-3-24
2.0081	Legislative Documents	6/6/2024	PDS Staff	May 28th Emails
2.0082	Legislative Documents	6/11/2024	PDS Staff	Response to Questions Memo_6-11-24
2.0083	Legislative Documents	6/25/2024	PDS Staff	Memo to Planning Commission re Stream Buffer Alternatives Comparison_TT
2.0084	Public Outreach	7/23/2024	Planning Commission	Planning Commission Written Meeting Minutes (Deliberations)
2.0085	Public Outreach	6/26/2024	Planning Commission	Planning Commission Recording of Meeting (Deliberations)
2.0086	Public Testimony	6/24/2024	PDS Staff	Advance mitigation amendment response
2.0087	Public Testimony	6/24/2024	Campbell, Tom	Advance mitigation amendment
2.0088	Public Testimony	6/25/2024	Campbell, Tom	Proposed Amendments Tonight
2.0089	Public Testimony	6/3/2024	Campbell, Tom	Questions on CAR Compliance
2.0090	Public Outreach	6/27/2024	Planning Commission	Recommendation Letter to County Council
2.0091				
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Hickey, Lisa

From: Karen Crowley <karenacrowley@gmail.com>
Sent: Friday, January 3, 2025 11:55 AM
To: Contact Council
Subject: Please protect our wetlands and waterways

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers, and building and maintaining fencing to protect buffers, are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the proposed reductions.

Allowing buffer averaging that results in a reduction of 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097.

Sincerely,
Karen Crowley
602 Avenue A
Snohomish, WA

Hickey, Lisa

From: Marilyn <maridings@gmail.com>
Sent: Sunday, January 5, 2025 7:02 PM
To: Contact Council
Subject: Reject Amendments to Ordinance No. 24-097

Dear Snohomish County Council Members,

I urge the Council to **reject the amendments to Ordinance No. 24-097** and **instead adopt improved critical areas provisions to better protect rivers and streams and wetlands.**

I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These **proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.**

Placing critical areas and buffers, and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is **inconsistent with the best available buffer science and state agency recommendations.**

The **Amendment Sheet No. 1 amendments on pages 2 and 3** reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and **violates the Growth Management Act.**

Please reject these amendments to Ordinance No. 24-097

Sincerely,

Marilyn Ridings

Hickey, Lisa

From: Nadine Shanti <nadine.shanti@gmail.com>
Sent: Monday, January 6, 2025 12:35 PM
To: Contact Council
Subject: ordinance 24-097

Dear Snohomish County Council Members,

I urge the Council to reject the amendments to Ordinance No. 24-097 and instead adopt improved critical areas provisions to better protect rivers and streams and wetlands. I support management of land as a finite resource not as a commodity, since land ownership, whether public or private, carries responsibility for stewardship. These proposed amendments to Ordinance No. 24-097 will damage the functions of critical areas, streams, and lakes in Snohomish County.

Placing critical areas and buffers and building and maintaining fencing to protect buffers are valuable methods of maintaining buffers, but they do not add enough protection to the buffers to justify the buffer reductions.

Allowing buffer averaging that allows buffers to be reduced to 50 percent of the buffer and no less than 25 feet is inconsistent with the best available buffer science and state agency recommendations.

The Amendment Sheet No. 1 amendments on pages 2 and 3 reinstating the allowance for developing non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet with wetland reports or mitigation for wetland and habitat loss is not consistent with best available science and violates the Growth Management Act.

Please reject these amendments to Ordinance No. 24-097

Sincerely,

Nadine Shanti

Discussion Draft AMENDMENT SHEET NO. 1 TO ORDINANCE NO. 24-097

Amendment Name: Retaining Existing Mitigation Incentives and Options.

Brief Description: This amendment would retain existing incentives to:

1. Provide protecting fencing;
2. Place critical areas and buffers in separate tracts;
3. Combine fencing and tracts to increase likelihood of protection;
4. Use buffer averaging; and
5. Fill and mitigate small wetlands when following Best Management Practices (BMPs).

Proposed By: Councilmembers Mead and Nehring

Affecting: Ordinance Recital, Findings, and Sections

Existing Ordinance Recitals, Findings, or Sections:

Note: A final amendment sheet will need to include several changes to the proposed ordinance findings to describe these amendments and justify them. The basic rationale is that maintaining flexibility for designing new development (1) maintains capacity for growth inside UGAs (2) helps address housing affordability challenges and (3) reduces pressure to expand UGAs in the future.

Page 52, line 14, delete:

(((~~(f) The following measures for reducing buffer width and area may be used without a critical area study or mitigation plan:~~

~~(i) separate tract reductions. Up to a 15 percent reduction of the standard buffer is allowed when the buffer and associated aquatic critical area are located in a separate tract as specified in SCC 30.62A.160(3);~~

~~(ii) fencing reductions. Up to a 15 percent reduction of the standard buffer is allowed when a fence is installed along the perimeter of the buffer. The fence shall be designed and constructed as set forth below:~~

~~(A) the fence shall be designed and constructed to be a permanent structure;~~

~~(B) the fence shall be designed and constructed to clearly demarcate the buffer from the developed portion of the site and to limit access of landscaping equipment, vehicles, or other human disturbances;~~

~~(C) the fence shall allow for the passage of wildlife, with a minimum gap of one and one half feet at the bottom of the fence, and a maximum height of three and one half feet at the top; and~~

~~(D) the enhancement area complies with the enhancement ratios of Table 3; and~~

~~(iii) for permanent fencing combined with separate tracts, the maximum reduction shall be limited to 25 percent.~~))

And replace with (and renumber subsequent code subsections)

(((~~f~~))) (g) The following measures for reducing buffer width and area may be used without a critical area study or mitigation plan:

(i) separate tract reductions. Up to a 15 percent reduction of the standard buffer is allowed when the buffer and associated aquatic critical area are located in a separate tract as specified in SCC 30.62A.160(3);

(ii) fencing reductions. Up to a 15 percent reduction of the standard buffer is allowed when a fence is installed along the perimeter of the buffer. The fence shall be designed and constructed as ((~~set forth below:~~)) specified in SCC 30.62A.160(5); and

(((~~(A) the fence shall be designed and constructed to be a permanent structure;~~

~~(B) the fence shall be designed and constructed to clearly demarcate the buffer from the developed portion of the site and to limit access of landscaping equipment, vehicles, or other human disturbances;~~

~~(C) the fence shall allow for the passage of wildlife, with a minimum gap of one and one half feet at the bottom of the fence, and a maximum height of three and one half feet at the top; and~~

~~(D) the enhancement area complies with the enhancement ratios of Table 3; and~~))

(iii) for permanent fencing combined with separate tracts, the maximum reduction shall be limited to 25 percent.

Page 53, line 11, delete:

(D) no part of the width of the buffer may be less than 50 percent of the standard required width or 25 feet, whichever is greater, for streams, lakes, and marine waters;

(E) the wetland buffer at its narrowest point shall not be less than the greater of either:

(I) 75 percent of the standard required buffer width, or

(II) 75 feet for Category I and II wetlands, 50 feet for Category III wetlands, and 25 feet for Category IV wetlands;

And replace with (and renumber subsequent code subsections)

(D) no part of the width of the buffer may be less than 50 percent of the standard required width or 25 feet, whichever is greater;

Page 79, line 26, delete:

(g) ((~~All development activities in non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet, and their associated buffers;~~)) Forest practices that are exempt from local regulation and conducted pursuant to the Forest Practices Act, chapter 76.09 RCW, and implementing regulations in title 222 WAC. This section does not apply to development activity or actions requiring a Class IV General forest practices permit pursuant to chapter 30.43F SCC;

And replace with (and renumber subsequent code subsections):

(g) All development activities in non-riparian Category II and III wetlands smaller than 5,000 square feet, and non-riparian Category IV wetlands smaller than 10,000 square feet, and their associated buffers;
(h) Forest practices that are exempt from local regulation and conducted pursuant to the Forest Practices Act, chapter 76.09 RCW, and implementing regulations in title 222 WAC. This section does not apply to development activity or actions requiring a Class IV General forest practices permit pursuant to chapter 30.43F SCC;

Page 80, line 7, delete:

(4) Category IV wetlands less than 4,000 square feet that meet the following criteria as demonstrated through a critical areas study under SCC 30.62A.140 may be filled provided their impacts are fully mitigated under SCC 30.62A.340:
(a) the wetland is not associated with fish and wildlife conservation areas or their buffers;
(b) the wetland is not associated with shorelines of statewide significance or their buffers;
(c) the wetland is not part of a wetland mosaic consisting of multiple small wetlands;
(d) the wetland does not have a habitat function score of 6 or more points; and
(e) the wetland is not a primary association area for critical species, located in a state natural habitat, or mapped as a priority habitat and species (PHS) area by the Washington Department of Fish and Wildlife.
(5) Category IV wetlands less than 1,000 square feet that meet the criteria in SCC 30.62A.510(4)(a) through (e) as demonstrated through a critical areas study under SCC 30.62A.140 are exempt from the buffer requirements contained in this chapter and may be filled provided their impacts are fully mitigated per SCC 30.62A.340.

Council Disposition:_____ **Date:**_____