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Gap Analysis

Skagit County Critical Areas Ordinance Update

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Prepared for:

Skagit County
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1. Introduction

With passage of the Growth Management Act (GMA), local jurisdictions throughout Washington State, including Skagit County, were required to develop policies and regulations to designate and protect critical areas. Critical areas are defined in the GMA and the Revised Code of Washington (RCW) 36.70A.030(5) to include wetlands, fish and wildlife habitat conservation areas, frequently flooded areas, critical aquifer recharge areas, and geologically hazardous areas. The GMA requires local jurisdictions to periodically review and evaluate their adopted critical areas policies and regulations.

Skagit County last completed a comprehensive update of its critical areas policies and regulations in 2006 , which was adopted December 23, 2008 and effective February 1, 2009. A periodic update is now required. According to the Washington Administrative Code (WAC) 365-195-915, critical area regulations are required to incorporate best available science (BAS), and any deviations from science-based recommendations must be identified, assessed, and explained. In addition, jurisdictions must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. A BAS review for this code update has been prepared as a separate document (Facet 2024).

Skagit County's critical areas policies are contained in the environment element of the Skagit County Comprehensive Plan (Comprehensive Plan). Critical areas regulations are currently codified in Chapter 14.24 and 14.34 of Title 14 - *Unified Development Code*, in the Skagit County Code (SCC).

This gap analysis is a review of the current critical areas regulations with evaluation of gaps in consistency between the existing regulations and BAS or the GMA. This analysis also includes recommendations for improvements to general aspects of the critical areas ordinance (CAO) such as clarity, consistency, and ease of use. The primary intention of this gap analysis is to help guide the update of the County's critical areas policies and regulations.

General provisions which are applicable to the entire CAO are evaluated in Section 2. The following sections provide information for specific critical areas. Each section contains a summary table followed by a detailed analysis of the existing code, potential gaps, and recommendations.

2. General Provisions

This section addresses code sections that are applicable to all types of critical areas. This includes SCC 14.24.010-170, SCC 14.24.700-740, and SCC 14.04. A summary of recommended updates is provided in Table 1.

Table 1. General provisions review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
14.24.010	Introduction	Review and update introduction language.	Clarity
14.24.020	Title and purpose	Fact check stated wildlife information. Remove if needed.	Consistency with county policy and BAS
14.24.030	Authority	None	
14.24.040	Applicability, jurisdiction, and coordination	Clarify relationship to SMP	Clarity
14.24.050	Resource information and maps	Indicate which maps are advisory.	Clarity & Consistency with BAS
14.24.060	Authorizations required	None	
14.24.070	Activities allowed without standard review	Consider including restoration	Consistency with purpose
14.24.080	Standard critical areas review and site assessment procedures	Revisions to evaluation distance, allowed uses, terminology, site assessment requirements, maintenance corridor, critical areas designation, and mitigation sequencing	Clarity and consistency with BAS
14.24.090	Protected critical areas (PCA) requirements	Consider changes to buffer marking requirements and accuracy	Clarity & administration
14.24.100	Critical areas determination and conditions of approval	Review and update criteria for reopening review.	Clarity.
14.24.110	County regulation of forest practices for the protection of critical areas	County staff propose to move the forest practice regulations to SCC 14.22.	Administrative preference
14.24.120	Ongoing agriculture	Update resources for salmonid presence and revise terminology; clarify wetland protections	Consistency with BAS

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
14.24.130	Hazard tree removal	Revise definition, circumstances for removal, risk mitigation, preservation for habitat features, replacement ratio, and professional qualifications	Consistency with BAS and ISA standards
14.24.140	Variances	Establish no net loss as a standard for variances; omit buffer reduction allowances	Consistency with GMA and BAS
14.24.150	Reasonable use exception	Establish no net loss as a standard for RUEs. Establish new reasonable uses process with more efficient impact analysis.	Consistency with GMA and BAS Administrative preference
14.24.160	Public notice and records	None	
14.24.170	Incentives	None	
14.24.700	Compliance tracking	None	
14.24.710	Fees	None	
14.24.720	Administrative official	Review terms, consider adding/using term Planning Director	Clarity / Administration
14.24.730	Appeals and the administrative official	None	
14.24.740	Interdisciplinary team	None	
14.04	Definitions	Revise FWHCA, CARA, and GHA definitions	Consistency with GMA

2.1 Introduction (SCC 14.24.010)

Review language for clarity. Site assessments are standard for wetlands, fish and wildlife habitat conservation areas, and geologically hazardous areas. Publicly available maps, provided by agencies such as Washington State Department of Ecology (Ecology) and Federal Emergency Management Agency (FEMA), are commonly referenced in-place of a site assessment when regulating frequently flooded areas and critical aquifer recharge areas (CARA). This can be clarified in the introduction language. Additionally, the concluding paragraph is unclear as written. Recommend emphasizing purpose of CAO.

2.2 Title and purpose (SCC 14.24.020)

Consistency with comprehensive plan

Consider incorporating goals identified in the Comprehensive Plan to expand on the purpose in this section.

Revise Wildlife Information

SCC 14.24.020(5) states that Skagit County has the greatest wildlife biodiversity and abundance of any county in Washington State. We recommend removing this statement from the Comprehensive Plan as it is likely invalid.

2.3 Applicability, jurisdiction, and coordination (SCC 14.24.040)

Relation to other Skagit County regulations

The relationships between the CAO, Shoreline Master Program (SMP) Floodplain Development 14.34, Stormwater Management 14.32, Water Pollution 16.32, SEPA 16.32, and applicable waste management and water quality elements of Title 12 could be clarified in this section to communicate how that applies to the other regulations. Based on a review of the proposed SMP, it appears the SMP will be providing independent regulations outside of the critical areas code.

2.4 Resource information and maps (SCC 14.24.050)

Recommend updating this section to document which maps are advisory and which mapped critical areas must be verified through a site-specific assessment. As noted in the introduction (SCC 14.24.010) critical area mapping for frequently flooded areas and critical aquifer recharge area relies on publicly available mapping.

Additionally, site assessments may be paired with publicly available mapping. For example, shoreline designation maps are typically paired with a shoreline delineation study to map shoreline jurisdictional extent more precisely on a parcel-level.

2.5 Activities allowed without standard review (SCC 14.24.070)

Planting native vegetation

SCC 14.24.070(12) allows for voluntary enhancement activities when authorized by a state or federal agency. To incentivize restoration and reduce potential permitting barriers, we recommend that native plant installation, mulch installation, and reasonable removal of non-native invasive plant species for areas of 500 square feet or less be allowed without a standard review as long as the project is consistent with the chapter and does not harm critical areas or their buffers. We recommend removing the state and federal agency review statements since vegetation enhancements, which are often in buffer areas, are unlikely to trigger federal and/or state permits.

2.6 Standard critical areas review and site assessment procedures (SCC 14.24.080)

Evaluation distance

We recommend that the review distance in SCC 14.24.080(4) be specified based on their respective critical areas resources here in a single location of the code. Based on the current code this would be 300 feet for wetlands and 200 feet for all other critical areas, however this distance applies to high land use intensity projects. Varying distances depending on low, moderate, or high land use or risk is recommended.

Site Assessment Terminology

Most jurisdictions have adopted the term "critical areas report" to describe what is referred to in the SCC as "site assessment." We recommend that this be updated to be consistent with the terminology common to the region, and because it is more descriptive of the content of the reporting requirements.

Site Assessment Requirements

We recommend that the site assessment requirements in SCC 14.24.080(4)(c) include direct and indirect impacts in addition to the cumulative impacts currently in the code.

Maintenance Corridor

According to SCC 14.24.080(4)(c)(ix) site assessments require the establishment of a 15-foot wide maintenance corridor "if necessary" to allow for construction and maintenance of a development. We recommend that a standardized building setback be established in a general provisions section of this chapter as an alternative to the maintenance corridor. This will provide an option to reduce the burden on the applicant of having to define a corridor and provide equal or greater protection of the resource. If the county is concerned about setback implications for small lots, setback exception criteria may be included.

Mitigation Sequencing

We recommend that mitigation sequencing, as described in SCC 14.24.080(5) should be given its own Section. The mitigation sequencing language is very similar, but slightly different than Ecology's most recent model ordinance (Ecology 2022). Additionally, mitigation sequencing requires applicants to prioritize impact avoidance and minimization ahead of mitigation planning. Mitigation is required when impact avoidance and minimization is not feasible. That sequence would be clearer if this provision is a general mitigation requirement.

2.7 Protected critical areas (PCA) requirements (SCC 14.24.090)

Permanent Buffer Edge Markers

SCC 14.24.090(2)(b) states "*permanent markers shall be placed to locate the edge of the PCA to an approximate accuracy of within 5 percent of the specified buffer width or within 5 feet, whichever is larger.*" We would recommend that the level of accuracy be removed from the code so to avoid potential abuse by those who may purposefully choose to shorten the buffer. We presume the intent is to allow sign installation without a formal land survey. Skagit County could still allow flexibility on a

case-by-case basis through administrative policy, without granting this permission in code. Also, this code provision does not give direction on sign spacing. Jurisdictions commonly require a sign every 50- to 100 feet or one per lot, whichever is greater.

PCAs on Pre-Existing Lots

SCC 14.24.090(4) states "*The site plan may be prepared by the applicant and all distances and locations of structures may be measured from the established PCA boundary to within plus-or-minus 5 feet.*" We would recommend that the level of accuracy be removed from the code because it could be construed to give the applicant the ability to lower buffers by up to 5 feet since that is within the given accuracy allowance. Similar to the recommendation for permanent buffer edge markers, tolerances can be set administratively to provide flexibility.

2.8 Critical areas determination and conditions of approval (SCC 14.24.100)

The conditions of approval language could be updated to allow reopening of the review processes on the basis of discovery newly available information about critical areas associated with a project, in SCC 14.24.100(6). Application errors, omissions or pertinent new information could all be reasons to reopen a review.

2.9 Ongoing agriculture (SCC 14.24.120)

Presence of Salmonids

SCC 14.24.120(4)(c)(iv) states that salmonid presence should be determined by data from the "limiting factors analysis" compiled by the Washington State Conservation Commission. Stream conditions and barriers have changed since this map was produced. We recommend that salmonid presence also include all streams mapped by the Statewide Washington Integrated Fish Distribution database. In this database, presence is either documented or modeled as gradient accessible and meeting fish habitat criteria under WAC 222-16-030. Also, any other valid source of information which may confirm salmonid presence should be evaluated and considered by Skagit County.

Hydrologic Permit Approval

SCC 14.24.120(4)(d)(i) refers to a "hydraulics project permit." These permits, administered by WDFW, are called *hydraulic project approvals* (HPA).

2.10 Hazard tree removal (SCC 14.24.130)

Definition

We recommend that "hazard tree" defined in SCC 14.04 be reviewed for consistency with the International Society of Arboriculture (ISA) standard. Tree risk includes a consideration of the likelihood of failure and impact, and consequences of failure. It requires an evaluation of potential targets.

Threats

In addition to the list of threats applicable for hazard tree removal, a tree presenting a hazard to people or public safety should also be allowed.

Additionally, this section should be clarified to specify what is included in the topic of "fire control" and whether this authorizes the implementation of defensible space recommendations. If vegetation management for defensible space is allowed, then performance standards must be developed to ensure that it does not result in a net loss in ecological function, which may be challenging or impossible in certain circumstances. WUI requirements and defensible space performance standards may need to be reviewed on a case-by-case basis where conflicting critical area protections apply.

Risk Mitigation

Part of a tree risk assessment process is the identification of maintenance actions which can reduce the risk of a tree to acceptable levels. We recommend including a provision in the code which requires risk mitigation prior to entire tree removal if it will be viable following the maintenance action and risk is reduced to an acceptable level.

Preservations of snags and logs

We recommend that if standing dead trees and snags can reasonably and safely be left in place they should be prioritized over the retention of logs in order to accommodate the preservation of wildlife habitat.

Replacements

A 1:1 tree replacement ratio may result in a net loss of critical areas function because installed trees often fail or die, and temporal loss during the establishment period is not replaced. We recommend establishing a 3:1 replacement ratio or greater and enforcing size requirements for replacement trees. Alternatively, applicants can demonstrate critical area functions will be maintained through other actions as documented in a PCA report and mitigation plan.

Qualifications

We recommend that a qualified professional include arborists certified by the International Society of Arboriculture (ISA) and American Society of Consulting Arborists (ASCA) that are trained and qualified in tree risk assessment such as through the Tree Risk Assessment Qualification (TRAQ) or equivalent. The current list of qualified professionals includes foresters and landscape architects who may also have related education and experience but are not specifically trained to assess and mitigate tree risk and may not be insured for professional liability related to tree risk decisions.

2.11 Variances (SCC 14.24.140)

No net loss

According to SCC 14.24.140(3)(f), a standard for a variance is that it "*will not create significant adverse impacts to the associated critical areas or otherwise be detrimental to the public welfare*." It is not well defined what qualifies as significant for this purpose. We recommend that this be consistent with BAS to require no net loss of ecological function.

Reductions beyond minimum through Exemptions or Reasonable Use only

The code currently includes options for a variance and a reasonable use exception process. To align with wetland BAS, buffer reductions should not be allowed beyond the minimum recommendations. However, the issues surrounding regulatory takings are complex and the agencies recognize the need

for a process to address situations where strict compliance with regulations would deprive a property owner of all reasonable use of the property. Such a situation would be processed through the Country's existing reasonable use exception (RUE) (SCC 14.24.150). The County should consider whether there are scenarios, outside of reasonable use, that the County would want to allow wetland buffer reductions beyond the minimum or if such situations could all be handled through an exemption.

2.12 Reasonable use exceptions (SCC 14.24.150)

Skagit County Planning and Development Services (PDS) proposes striking the existing reasonable use code and establishing a new process to allow for more efficient review of projects that result in wetland and/or HCA impacts under very specific circumstances. The revised approach would ensure a more rigorous evaluation while simplifying the overall process and avoiding Critical Areas Variances. As a model, PDS refers to Snohomish County Code 30.62A.520 and .540 which aligns with the goals of balancing development needs with environmental protections.

No net loss

As was suggested in the previous section, we recommend that the reasonable use exception section require no net loss of ecological function. To achieve this, off-site mitigation or third-party mitigation credit purchase may be necessary in some cases.

2.13 Definitions (SCC 14.04)

Only definitions in Title 14 directly relating to critical areas definitions, or otherwise identified for their relevance to critical area regulations were reviewed for this gap analysis.

Wetlands

The definition of wetlands is substantively similar to WAC 365-190-030(24), with very minor noted differences. It includes an additional statement to specify that portions of a lake that meet wetland criteria are regulated under the Wetlands Section of the code.

Fish and Wildlife Habitat Conservation Areas

The definition of Fish and Wildlife Habitat Conservation Areas (FWHCAs) does not match WAC 365-190-030(6), and we recommend that it be updated. The current definition lists the qualifying FWHCA designated types, these are specified in the FWHCA section and do not need to be a part of the definition.

Geologically Hazardous Areas

The definition for geologically hazardous areas is similar but does not match WAC 365-190-30(9), and we recommend that it be updated for consistency.

Critical Aquifer Recharge Areas

The definition for CARAs is similar but does not match WAC 365-190-30(3), and we recommend that it be updated for consistency.

Frequently Flooded Areas

The definition for frequently flooded areas is similar but does not match WAC 365-190-30(8), and we recommend that it be updated for consistency.

3. Wetlands

This section addresses code sections that are applicable to wetland critical areas as located in SCC 14.24.200 through SCC 14.24.250. A summary of recommended updates is provided in Table 2.

Table 2. Wetland provisions review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.24.200	Wetlands designations	Revisions to terminology and adds delineations manuals	Internal consistency & BAS
SCC 14.24.210	Wetlands classifications	Update references to rating systems	Consistency with BAS
SCC 14.24.220	Wetlands site assessment requirements	Potential revisions for consistency with proposed updates in SCC 14.24.230	Internal consistency
SCC 14.24.230	Wetland protection standards	Require building setbacks, update to buffer framework, protection of ecological function, and exceptions for small wetlands	Consistency with BAS
SCC 14.24.240	Wetland performance-based buffer alternatives and mitigation standards	Updates to allowances for buffer increasing, decreasing, averaging, and mitigation ratios.	Consistency with BAS
SCC 14.24.250	Wetland alternative compensation projects	Updates to circumstances allowed for off-site compensation and preferences for selection of compensation sites.	Consistency with BAS and alignment with State and Federal agencies

3.1 Wetlands designations (SCC 14.24.200)

Section Name

The SCC is inconsistent in using “wetlands” and “wetland” in section titles. We recommend using "wetland."

Wetland Delineation Methods

The SCC does not reference wetland delineation standard methods but does include reference to WAC 173-22-035 that requires the use of approved federal manuals and regional supplements. Wetlands are determined by the 1987 Wetland Delineation Manual by the U.S. Corps of Engineers (Corps) and the

2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). We recommend that the SCC codify the requirement for these manuals to be used in wetland delineations.

3.2 Wetlands classifications (SCC 14.24.210)

Wetland Rating (Functional Assessments)

A new version of the wetland rating system was released since the code was last revised. The current version of the wetland rating system is the Washington State Wetland Rating System for Western Washington: 2014 Update, Version 2.0 (Hruby & Yahnke 2023). The Current Ecology publication number is 23-06-009. We recommend updating this publication reference or as revised. We recommend that annual amendments be processed as necessary to reflect updates. Recommend PDS ensure completed wetland rating adequately addresses the functions and values element in a wetland report.

The descriptions of rating categories in the SCC differ from the official manual. Although these descriptions are not inaccurate, it would support interagency consistency to use the descriptions provided by Ecology.

3.3 Wetlands site assessment requirements (SCC 14.24.220)

Study area

The study area may require revision depending on whether site buffers and building setbacks are updated.

3.4 Wetland protection standards (SCC 14.24.230)

Building Setbacks

Buildings and structures necessitate an area of surrounding space for construction and maintenance. When structures are constructed near wetland buffers, associated temporary construction impacts and long-term maintenance impacts degrade buffer functions and values. A common approach to remedy this is to adopt building setbacks which extend beyond the buffer. These allow a reasonable area for construction and maintenance to ensure adequate protection of the wetland buffer. It is recommended that Skagit County include buffer setbacks for this purpose.

The county may include setback exception criteria as detailed under SCC 14.24.080 above. In some cases reducing a setback can reduce critical area impacts.

Wetland Buffers

Ecology updated buffer width recommendations in 2018 to account for revised habitat score ranges, which are similar with minor differences from the 2014 recommendations currently used in the SCC. Specifically, the 5 point category is now considered to be *low* rather than *moderate* function. In practice, this means that wetlands in this range may now have lower buffer requirements depending on the buffer width alternative used by local jurisdictions.

The most recent Ecology buffer guidance is the *2022 Wetland Guidance for Critical Areas Ordinance (CAO) Updates*. Our correspondence with Ecology confirms that the 2022 guidance does not supersede the 2018 guidance and that they are both valid. However, there are differences in the buffer width frameworks in each of the systems. First is a distinction of terminology, since the 2018 guidance refers to *buffer alternatives* and the 2022 guidance refers to *buffer options*. Hereafter, *buffer alternatives* refer to Ecology (2018), *buffer options* refer to Ecology (2022), and *SCC buffer options* refer to Skagit County's current buffer options.

Each of the two systems in Ecology (2018) and Ecology (2022) provide three buffer options and alternatives. Skagit County currently uses a hybrid model with two buffer options that are based the buffer alternatives in Ecology (2018). The first buffer width option in SCC 14.24.230(1)(a), *SCC Option 1*, aligns with Ecology's Buffer Alternative 2 and Buffer Option 2. Minor differences are noted in the conditions and definitions, which appear to be adapted to local preferences. For example, *high impact land use* is considered to include residential uses denser than one house per five acres, whereas Ecology's definition is greater than one house per one acre. According to Skagit County PDS, the intent was to provide greater protection to wetlands for residential lots between one and five acres in size, because these parcels generally have sufficient opportunity for avoidance. These definitions are more restrictive and therefore are not required to be revised since they exceed BAS-based agency recommendations. Ecology also now recommends that no buffer reductions or averaging be combined with this system, this is discussed further in Section 3.5 (Ecology 2022).

Skagit County also provides an allowance for applicants to choose a second buffer option in accordance with SCC 14.24.230(1)(b), hereafter, "*SCC Buffer Option 2*." Based on our review, the standard buffers widths of both options are consistent with BAS.

Ecology's buffer width recommendations assume that the buffer area is well vegetated with native species appropriate to the ecoregion (Ecology 2022). We recommend that Skagit County include this condition into the code and consider larger buffers when vegetation is disturbed. Revegetation plans may be considered in lieu of larger buffers. We also recommend that the table of required minimization measures from Ecology (2018) or Ecology (2022) be incorporated into the code rather than as reference.

Although Buffer Option 1 is not one of the utilized buffer approaches by Skagit County, it is somewhat analogous to Buffer Alternative 3 and SCC Buffer Option 2. Ecology now recommends providing a habitat corridor be provided in order to maintain the standard (or reduced) buffers.

Based on this review we have several recommendations: (1) update the habitat score categories based on Ecology's current guidance, (2) consider simplifying the buffer width options into a single table, (3) require increased buffers for sites with degraded buffers, and (4) consider adopting the Buffer Option 1 framework or require a habitat corridor as a condition of maintaining a the standard buffer width. Regarding (2), the two buffer options can be combined for brevity and reduce code complexity as both options can be conveyed in a single table.

In summary, current BAS-based buffer recommendations from Ecology should be reviewed to determine the best fit for Skagit County.

Buffer Increases for Slopes

Buffer increases on slopes 25% or greater is required per the SCC to 25 feet beyond the top of bank of the slope in instances where the slope extends beyond the edge of the buffer. However, there is no codified definition of *top of bank*. Ecology (2018) recommends that buffers are increased by 50% on areas with slopes greater than 30%. Both of these methods increase buffers on slopes and the degree of protection depends on the site-specific circumstances. The wider the slope, the more protection that the current code provides, whereas the Ecology recommendations would be more protective on smaller slopes. In practice, both methods are reasonable in our opinion to meet the intent of increasing buffer width requirements on steep slopes. Other buffer increases are addressed in SCC 14.24.240.

Previously Established Buffers

SCC 14.24.230(4) has a provision that would maintain previously established buffers when recorded on title or protected through a tract or easement. While this ensures consistency over time, it also means that buffers do not get updated as codes are updated and older less protective buffers may be inadequate to protect critical area functions. We recommend that if the recorded buffer is less than a specified dimension of the current buffer, less any adjustments obtained through mitigation, then the new buffer should apply. Additionally, if a vested buffer is retained, it should be densely vegetated with native plants or restored.

Functionally disconnected buffer areas

There is a provision in SCC 14.24.230(5) that allows for buffers to end at the edge of established public roadways when certain criteria are met. We recommend that buffer interruptions also be considered for private roads, and other legally established development to allow for flexibility in development when the present buffer conditions are so degraded that they do not protect wetland functions and values. This would align with current Ecology guidance.

Exemptions for Small Wetlands

SCC 14.24.230(6)(a) provides a complete exemption for wetland standards for Category III and IV wetlands that are less than 1,000 square feet, when isolated and other criteria are met. Even small wetlands provide important functions so mitigation should be required to meet the stated goals of no net loss of ecological function, including hydrological function in areas with downgradient drainage issues. We would recommend that if Skagit County wishes to continue allowing impacts to small wetlands, that they, at a minimum, require full mitigation to ensure no net loss of ecological function. Furthermore, all wetlands are protected by Ecology under the Water Pollution Control Act and the Skagit County Water Pollution Code SCC 16.32, even when they are not considered jurisdictional by the Corps under Clean Water Act jurisdiction. To prevent circumstances where applicants circumvent or are unaware of state law, then state and federal approval should also be required when wetland fill is authorized by Skagit County. If the county wishes to maintain flexibility for Category III and IV wetlands less than 1,000 square feet, buffer reductions may be considered in lieu of full exemption from statutory requirements.

SCC section 14.24.230(6)(b) states that Category III and IV wetlands between 1,000-4,000 square feet are currently exempt from mitigation sequencing but do require mitigation. This allows additional

applicant flexibility, but comes at the cost of wetland loss when there may be feasible alternatives. We recommend reviewing these provisions to ensure they align with current Ecology guidance (ECY 2022).

No Net Loss of Ecological Function

For consistency with the GMA and BAS, it is recommended that Skagit County adopt a general provision, or a provision within each critical area section, to establish no net loss of ecological function as a protection standard that is applicable to all projects.

3.5 Wetland performance-based buffer alternatives and mitigation standards (SCC 14.24.240)

Buffer Width Increases

SCC 14.24.240(1) currently allows the Administrative Official to increase buffers in circumstances with endangered and threatened species, areas with severe erosion, and instances where Category I and II wetlands are nearby other important habitat features. In addition to these reasons, Ecology (2018) and Ecology (2022) also recommends buffer increases occur in areas which lack native vegetation, and therefore, are unable to provide the expected functions. Buffer enhancement to restore function may occur in lieu of buffer increases to achieve this goal. It would also provide consistency and predictability to provide a standardized approach for each type of buffer increases.

Buffer Averaging

Ecology's guidance now recommends that Buffer Option 2, the analogous option to SCC Option 1, no longer be combined with buffer averaging or other buffer reductions (ECY 2022). However, ECY (2022) also states that buffer averaging is reasonable on sites with adequate buffers and buffers may be averaged if this will improve the protection of wetland functions.

The buffer averaging language in SCC 14.24.240(2) is substantively similar, but slightly different from the recommendations from Ecology (2018). For instance, Ecology's (2018) recommendations include the following provision:

> *The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a "dual-rated" wetland with a Category I area adjacent to a lower rated area. The buffer is increased adjacent to the higher-functioning area of habitat or more sensitive portion of the wetland and decreased adjacent to the lower functioning or less sensitive portion.*

Skagit County may consider adding this to buffer averaging requirements. It reduces flexibility in areas where averaging can occur. Alternatively, added flexibility may be added by allowing buffer enhancement as a method to achieve no net loss of ecological function during buffer averaging.

Buffer Width Decreasing

This section, SCC 14.24.240(3), does not state an amount that a buffer width can be decreased or removed without a variance. It seems implied that it can be up to 25% since that is that amount in which a variance is required, but is not explicitly stated. This can be clarified to reduce ambiguity.

Administrative buffer reductions to widths lower than standard buffers are no longer considered to be consistent with BAS or state policy (Ecology 2022). We recommend that Skagit County consider removing buffer reduction allowances through administrative permitting channels.

The code could also be clarified to specify how buffer width reductions apply to buffers which are already reduced as a part of functionally disconnected buffer areas. It is recommended that no additional averaging or reductions be allowed for buffers which are reduced to a dimension lower than the standard buffer.

The buffer width decreasing options should also be reviewed upon any potential changes to the standard buffers.

Mitigation Ratios

SCC 14.24.240(4) references an Ecology publication for mitigation ratios that was updated in 2018 and the citation should be revised. These ratios apply to direct wetland impacts, however, there are no stated mitigation ratios for impacts to wetland buffers or reduction of wetland buffers. Skagit County should consider applying standardized buffer mitigation ratios for various types of vegetation cover. Since these instances result in a net loss of total buffer area, it is important for wetland functions that mitigation is adequate to replace lost functions. It is recommended that mitigation ratios are 1:1 or greater. Ratios greater than 1:1 may be necessary to account for temporal loss, loss of buffer area, risk of failure, and to ensure no net loss of ecological function.

3.6 Wetland alternative compensation projects (SCC 14.24.250)

Selecting Compensation Sites

This section, SCC 14.24.250(3), includes a preference for wetland rehabilitation and creation. Ecology (2021) recommends the following compensation types in order of preference: (1) re-establishment, (2) rehabilitation, (3) creation, (4) preservation, and (5) enhancement. We recommend that Skagit County match Ecology's guidance and definitions in compensation site selection and that hydrologic impacts are assessed in small basins with inadequate drainage as wetlands are filled. Compensation sites may utilize a mix of types depending on what is available and ensure that there is no loss of wetland area. Skagit County may consider following the site selection preferences by Ecology.

4. Critical Aquifer Recharge Areas

This section addresses code sections that are applicable to critical aquifer recharge areas (CARAs), as located in SCC 14.24.300 through SCC 14.24.380. For the purpose of this report CARAs are synonymous with aquifer recharge areas (ARAs), the term used in the SCC. A summary of recommended updates is provided in Table 3.

Table 3. Critical aquifer recharge area provisions review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.24.300	Aquifer recharge areas intent	Update terminology	Consistency with BAS, usability
SCC 14.24.310	Aquifer recharge areas designations	Add a designation for Category II CARAs and update category definitions	Consistency with BAS
SCC 14.24.320	Aquifer recharge areas prohibited activities	None	
SCC 14.24.330	Aquifer recharge areas site assessment requirements	Require additional criteria for site assessment review	Consistency with BAS
SCC 14.24.340	Aquifer recharge areas impact mitigation	Authorize the county to request adaptive management plans, and review impervious surface threshold requirements. Nexus with stormwater polilcies.	Consistency with BAS and stormwater regulations
SCC 14.24.350	Flow-sensitive basins	Update Groundwater Withdrawal Limit (gallons per day per new Ecology guidelines and WAC)	Consistency with BAS and Washington State regulations
SCC 14.24.360	Flow-sensitive basin water withdrawal mitigation	Review impervious surface threshold requirements	Consistency with BAS
SCC 14.24.370	Delineation of flow-sensitive basins	None	
SCC 14.24.380	Seawater intrusion areas	Review development standards in areas of medium or high risk	Consistency with BAS

4.1 Aquifer recharge areas intent (SCC 14.24.300)

Terminology

To maintain consistency in terminology with the GMA, consider referring to *aquifer recharge areas* as *critical aquifer recharge areas* (CARA). The definition of aquifer recharge areas under SCC section 14.04 should be replaced with the new definition for *critical aquifer recharge areas* using the WAC 365-190-030 definition.

> *Areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.*

PDS proposes creating a matrix or table that links categories and land uses/activities to the corresponding site assessments and review levels required. This will help clarify the necessary processes for each scenario and ensure consistency in the review process. PDS proposes to use models such as

Kitsap, Pierce and Island Counties to revise CARA code including structures, matrix, burden of proof on project proponent, and seawater intrusion.

4.2 Aquifer recharge areas designations (SCC 14.24.310)

Categories

SCC section 14.24.310(1-2) address Category 1 and Category 2 CARAs. The Washington Department of Ecology Critical Areas Handbook states that "counties and cities must classify recharge areas for aquifers according to the aquifer vulnerability…". While designating CARAs as Category 1 or 2 for development purposes helps administrators regulate the code it may be beneficial to associate these categories as having high vulnerability or low vulnerability for consistency with WAC 365-190-100.

> *High vulnerability may be indicated by hydrogeological conditions that facilitate degradation, particularly where combined with land uses that contribute, or may potentially contribute, directly or indirectly to contamination that may degrade groundwater.*
>
> *Low vulnerability may be indicated by the combination of hydrogeological conditions that do not facilitate degradation and land uses that do not contribute, or are not likely to contribute, contaminants that will degrade groundwater.*

This code section lists areas that are included as Category 1 CARAs. While this list is similar to the WAC 36-190-100(4)(b) examples, the language differs slightly. For consistency with state requirements, we recommend using the WAC language for 14.24.310(1)(i-iii).

Under the current code, all areas outside of Category I CARAs are automatically classified as Category II CARAs. This broad classification appears to have been a convenient catch-all from previous updates to the CAO, but it does not effectively address the varying levels of risk across the County. To better reflect areas of higher and lower risk, PDS proposes identifying and mapping Category II CARAs using soil, geological, hydrological, and land use data. This more nuanced approach will help pinpoint areas with greater susceptibility to groundwater impairment, aligning with recommendations from the Departments of Health and Ecology.

4.3 Aquifer recharge areas site assessment requirements (SCC 14.24.330)

Site Assessment Elements

SCC section 14.24.330(3)(a) lists lithologic characteristics and stratigraphic relationships of the CARA. In addition to the characteristics listed the Washington Department of Ecology also recommends assessing the depth to water, chemical retardation factors, adsorption, and the presence or absence of an impermeable layer (ECY, 2021). We recommend adding these characteristics to the existing list under subsection (3)(a).

Subsection (3)(j) requires the development of a spill plan/or contingency plan that specifies actions that will be taken if a release of a contaminant occurs. We recommend that projects in CARAs be required to

also have a spill prevention plan if equipment or materials are used that may introduce contaminants. Spill prevention requirements under SCC 14.32 Stormwater Management and SCC 16.32Water Pollution could be cross-referenced here.

4.4 Aquifer recharge areas impact mitigation (SCC 14.24.340)

Mitigation

Skagit County may consider incorporating contingency plan requirements to all types of critical mitigation, rather than just CARAs as described in this section.

Impervious Surfaces

Section 14.24.340(3)(b) states that "if a project is located within ½ a mile of any of the streams identified in subsection (3)(c) of this section as SWSL then the total impervious surface of the proposed project shall be limited to 5% of the total area…". We recommend reviewing this threshold for alignment with stormwater management requirements and Department of Ecology recommendations.

Nexus with Stormwater Management

CARA mitigation strategies, including avoidance, minimization and mitigation must be consistent with other stormwater policies including the nexus with Need to reinforce nexus with SCC 14.32 MR3 and SCC 16.32.

Process needs to ensure that soil analysis for infiltration BMPs is in accordance with (Storm Water Management Model (SWMM) measures to prevent delivery of contaminants to groundwater.

4.5 Flow-sensitive basin (SCC 14.24.350)

We recommend that Groundwater Withdrawal Limit (gallons per day) be reviewed to comply with BAS and Washington State rules regarding flow-sensitive basins. Skagit County staff have already proposed revisions to this section.

4.6 Flow-sensitive basin water withdrawal mitigation (SCC 14.24.360)

Similarly to the impervious surface restrictions mentioned above SCC 14.24.360 limits impervious surfaces to 20% when the project is located in a flow-sensitive basin. We recommend reviewing this threshold for alignment with stormwater management requirements and Department of Ecology recommendations or removingthis section as it is largely superseded instream flow rules (WAC) , and is not longer relevant for development review. There are portions that are still applicable. PDS Water Review Team will review this section.

4.7 Seawater intrusion areas (SCC 14.24.380)

Land Division

SCC 14.24.380(2)(c)(ii) states that *"if the proposed land division is within an area of documented chlorides in excess of 25 ppm, all well locations must be specified and spaced 100 feet or more from any other well including wells on neighboring properties"*. A 2005 topic paper by Kelly (2005) on saltwater intrusion states *"an area where all wells within ½ mile have chloride concentrations less than 100 milligrams per liter (mg/l) is considered 'low risk'. An area where one or more wells have chlorides between 100 and 200 mg/l is considered 'medium risk', and an area with one or more wells with chloride concentrations greater than 200 mg/l is considered 'high risk'."* The conversion of ppm to mg/l is equal (1 ppm = approximately 1 mg/l), therefore, land divisions located in areas where chloride levels exceed 100 ppm be highly restricted or only permitted under approval of the health department as these are considered medium risk areas.

We recommend reviewing the development standards in this section for consistency with current risk modeling and best practices.

5. Geologically Hazardous Areas

This section addresses code sections that are applicable to geologically hazardous areas, as located in SCC 14.24.400 through SCC 14.24.430. A summary of recommended updates is provided in Table 4.

Table 4. Geologically hazardous areas provisions review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.24.400	Geologically hazardous areas designations	None	
SCC 14.24.410	Geologically hazardous areas known or suspected risk	Revise classifications for erosion hazards, seismic hazards, volcanic hazards, and mine hazards. Improve mapping and databases for mine hazards	Consistency with BAS
SCC 14.24.420	Geologically hazardous areas site assessment requirements	Review IBC/IRC requirements	Staff recommendation
SCC 14.24.430	Geologically hazardous area mitigation standards	None	

5.1 Geologically hazardous areas known or suspected risk (SCC 14.24.410)

Known or Suspected Erosion Hazards Data Source

According to SCC 14.24.410(1)(d), known or suspected erosion hazards may include areas designated in the Department of Ecology, Coastal Zone Atlas, Washington, Volume Two Skagit County (1978) as U (Unstable), UB (Unstable Bluff), URS (Unstable Recent Slide), or UOS (Unstable Old Slide). Ecology's current iteration of the Coastal Zone Atlas is a web application[1] that no longer distinguishes "UB (Unstable Bluff)" as a separate category.

Recommend review and updating mapping of geologically hazardous areas, including mine hazard areas, for public safety and accurate identification of hazard areas.

Seismic Hazards Data Source

A Liquefaction Susceptibility Map of Skagit County issued by Washington Department of Natural Resources dated September 2004, is referenced in the code as a source of data for liquefaction hazards. WADNR now contains all liquefaction data in a web application called the Washington Geologic Information Portal.[2] This portal also contains updated information for tsunami, including a 2022 study which is used as the data source[3].

Volcanic Hazards Data Source

The source of data listed on the SCC, *United States Geologic Survey Open-File Report 95-499 as the volcanic hazard zone for Glacier Peak, Washington,* and *United States Geologic Survey Open-File Report 95-498*, provide mapping products for certain types but not all types of volcanic hazards. It is recommended that sources of other data be included, such as updated USGS documents that illustrate lahar flows.

Mine Hazard Areas Data Source

The code refers to a source for the determination of mining hazards, the *Coal Measures of Skagit County* (1924), which is 100 years old. We recommend that Skagit County review available data and base regulations on the most current information available.

Slope density calculations

Slope-density calculation is a method for determining the number of allowable development units of subdivisions with geological hazards. Usually the steeper the slope, the fewer the number of units permitted. PDS needs to evaluate whether code supports these requirements or how these requirements can be incorporated per staff comment on BAS.

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[1] https://apps.ecology.wa.gov/coastalatlasmap

[2] https://geologyportal.dnr.wa.gov/2d-view#wigm?-14056695,-12882622,5743090,6305055?Surface_Geology,500k_Surface_Geology,Map_Units

[3] Dolcimascolo, Alexander; Eungard, D. W.; Allen, Corina; LeVeque, R. J.; Adams, L. M.; Arcas, Diego; Titov, V. V.; González, F. I.; Moore, Christopher, 2022, Tsunami inundation, current speeds, and arrival times simulated from a large Seattle Fault earthquake scenario for Puget Sound and other parts of the Salish Sea: Washington Geological Survey Map Series 2022-03, 16 sheets, scale 1:48,000, 51 p. text.

5.2 Geologically hazardous areas site assessment requirements (SCC 14.24.420)

Tsunami and seiche hazards

A site assessment is not required for tsunami and seiche hazard areas but they are addressed through the frequently flooded section of this Chapter. PDS recommends review of International Building Code (IBC) and Internation Residential Code (IRC).

6. Fish and Wildlife Habitat Conservation Areas

This section addresses code sections that are applicable to fish and wildlife habitat conservation areas (FWHCAs) as located in SCC 14.24.500 through SCC 14.24.540. A summary of recommended updates is provided in Table 5.

Table 5. General provisions review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.24.500	Fish and wildlife habitat conservation area designations	Revise designated FWHC areas to include forage fish spawning habitat; Provide readily accessible designation map and ensure protections apply to all species and habitats.	Consistency with GMA
SCC 14.24.510	Fish and wildlife habitat conservation area water type classification	Revise the definition of Type S waters to specify the inclusion of lakes over 20 acres and marine waters.	Consistency with Shoreline of the State designation.
SCC 14.24.520	Fish and wildlife habitat conservation area site assessment requirements	Require an HCA site assessment for projects within 200 feet of an FWHCA outside of the SFHA or within the protected review area for flood damage protection; Revise bald eagle protection requirements; Expand sources of management recommendations to include NOAA, USFWS, other government agencies, and peer-reviewed literature.	Consistency with BAS and federal law

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.24.530	Fish and wildlife habitat conservation area protection standards	Establish "*no net loss of ecological function*" as a protection standard that applies to all projects; Revise to adopt the Riparian Management Zone (RMZ) approach or update buffer widths to align more closely with the RMZ guidance; Revise intent to include a broader range of buffer functions; Use consistent terminology throughout the code section; Revise to include how smaller streams and riparian areas are regulated in dike systems; Revise to reference the Shoreline Master Program (SMP) regarding Type S streams; Revise to ensure that the current buffer standards supersede older buffer requirements documented on titles and easements	Consistency with BAS and GMA
SCC 14.24.540	Fish and wildlife habitat conservation area performance-based buffer alternatives and mitigation standards	Apply the same administrative options and recommendations for buffer size to stream buffers as applied to wetland buffers; Specify the amount a buffer width can be reduced without a variance; For regulations pertaining to allowed uses in HCAs and buffers, defer to the SMP for all shoreline regulation; Specify conditions in which docks and bulkheads can be built in non-shoreline streams; Revise reference to the Stormwater Management Manual for Western Washington (SMMWW); Repeal section allowing timber harvest within the riparian buffer	Consistency and clarity across CAO, SMP and SMMWW, and clarity of CAO regulations

6.1 Fish and wildlife habitat conservation area designations (SCC 14.24.500)

Forage Fish Spawning Habitat

The SCC identifies herring and smelt spawning areas as FWHCAs but does not include "other forage fish spawning areas" as specific in WAC 365-190-130. Sand lance is another common forage fish species that is mapped and regulated by WDFW. We recommended including other forage fish spawning areas to maintain consistency with the GMA and provide protection for these habitats.

Species and Habitats of Local Importance Maps

The SCC designates identified habitats and species of local importance according to an official map. We were unable to find this map through internet searches and should be made more accessible to users. Additionally, we recommend that these protections apply to all species and habitats of local importance wherever found since no comprehensive inventory exists.

6.2 Fish and wildlife habitat conservation area water type classification (SCC 14.24.510)

Type S Waters

The SCC identifies Type S waters as Shorelines of the State but continues to describe them as streams with over 20 cfs. Type S waters also include lakes over 20 acres and marine waters. Although this is implied by the inclusion of Shorelines of the State, it would serve to reduce ambiguity by fully defining the term or referring where it is defined elsewhere.

6.3 Fish and wildlife habitat conservation area site assessment requirements (SCC 14.24.520)

Site Assessment

There is potential ambiguity in the interpretation of the first sentence regarding the circumstances when an HCA site assessmentis required. It appears to state that an HCA site assessment is required when a project is within 200 feet of a FWHCA except when then are in a special flood hazard area (SFHA), or if the site is within the protected review area pursuant to SCC 14.34.055 (Ch 14.34 Flood Damage Prevention). It is unclear why a site assessment wouldn't be required in a SFHA since floodplain regulations are insufficient to adequately protect all FWHCAs. We recommend that this exclusion be removed since it would not provide the necessary protections to sensitive FWHCAs when located in floodplains, and the code be revised to clarify this section.

Bald Eagles

The SCC requires that bald eagles be protected according to the Washington State Bald Eagle Protection Rules in WAC 232-12-292. These are now codified in WAC 220-610-110, but only apply when bald eagles are listed as threatened or endangered. Bald eagles have been delisted from both state and federal endangered and threatened species lists, so this requirement in the SCC would no longer be applicable. However, bald eagles are still federally regulated through the Bald and Golden Eagle Protection Act of 1940 and the Migratory Bird Treaty Act of 1918. These regulations prevent 'take' and

also require permits for activities within a certain distance of nest trees. The SCC would also require a habitat management plan near communal roosts, a situation in which permits are typically not required under federal statutes. Skagit County should consider how it would like to continue such protections now that bald eagles are no longer listed. This may be updated by requiring an applicant to obtain an eagle permit from the United States Fish and Wildlife Service (USFWS) for approval or a project within 660 feet of a nest tree. Alternatively, Skagit County may continue to require a habitat management plan by revising the code even though the species is no longer threatened or endangered.

Other FWHCAs

"Other" FWHCAs such as listed species are protected on a case-by-case basis "*by means of a habitat management plan based on the Washington State Priority Habitat and Species (PHS) program*." We recommend updating the language of this section such that a habitat management plan (HMP) will implement WDFW *management recommendations* for PHS species. WDFW's management recommendations have not been developed for all regulated species and are not always applicable to site-scale management. We would recommend that this section be updated to also consider information from other sources such as USFWS, NOAA, other governments and agencies that have information on the species, peer-reviewed literature, and other BAS.

6.4 Fish and wildlife habitat conservation area protection standards (SCC 14.24.530)

Riparian Buffers Intent

The intent section covers five functions of riparian buffers, which is not comprehensive but does capture many of those that are most important to in-stream habitat quality. Skagit County could consider revising this to be more inclusive of other functions such as wildlife corridors, allochthonous inputs, and others. The draft SMP's critical areas section included two additional functions, microclimate and nutrient inputs, which could be considered.

Terminology

This section of code interchangeably uses "riparian buffers" and "riparian areas." Consider using a single term for consistency.

Riparian Buffer Measurements in Dike Districts

Dike districts may contain smaller streams and riparian areas that are unassociated with the larger diked system. This section references dike districts along the Skagit and Samish Rivers, so it would help to avoid ambiguity by clarifying how these smaller systems are measured and regulated in the dike districts.

Relation to SMP

The CAO contains standards for Type S waters which overlap with the Shoreline Master Program (SMP) Since the SMP maintains independent critical area standards, it may be simplest to remove Type S buffers from the CAO and instead reference the SMP.

Stream Buffers and Riparian Management Zones (RMZs)

In 2020, the Washington Department of Fish and Wildlife published new guidance for the protection of riparian areas (Quinn et al. 2020). The guidance emphasizes a shift in terminology from the concept of "*stream buffers*" to "*riparian management zones*" (RMZs). An RMZ is defined as "*…a scientifically based description of the area adjacent to rivers and streams that has the potential to provide full function based on the SPTH [site potential tree height] conceptual framework*." Further, an RMZ is recommended to be regulated as a fish and wildlife habitat conservation area itself to protect its inherent value, rather than as just a buffer for rivers and streams (Rentz et al. 2020). Stream buffers are established in local critical areas ordinances based on the best available science and are intended to protect streams but may or may not provide full riparian function. To achieve full riparian function, the WDFW guidance recommends that RMZs be considered a delineable, regulatory critical area and that the guidance be applied to all streams and rivers, regardless of size and type.

Washington Department of Fish and Wildlife's current recommendations for establishing RMZ widths are based primarily on a site potential tree height framework, which does not use the DNR water typing system. The site potential tree height is defined as "*…the average maximum height of the tallest dominant trees (200 years or more) for a given site class.*" WDFW refers to this as $SPTH_{200}$. Exceptions may occur where the site potential tree height is less than 100 feet, in which case the agency recommends assigning an RMZ width of 100 feet at a minimum to provide adequate biofiltration and infiltration of runoff for water quality protection from most pollutants, but also in consideration of other habitat-related factors including shade and wood recruitment. A 100-foot-wide buffer is estimated to achieve 95% pollution removal and approximately 85% removal of surface nitrogen (Rentz et al. 2020). Washington Department of Fish and Wildlife recommends measuring RMZ widths from the outer edge of the channel migration zone, where present, or from the ordinary high-water mark where a channel migration zone is not present.

Riparian management zones or buffers that vary by location may present practical challenges for implementation and have considerations in equity. To analyze the potential range of $SPTH_{200}$ in Skagit County, we conducted a review of the data available from the WDFW Site Potential Tree Height Mapping Tool, as described below. The dataset was clipped to within 200 feet of all streams using WDNR hydrology data (stream centerlines[4]), and all overlaps were removed so only polygons with the greatest $SPTH_{200}$ in each area were included. The WDFW $SPTH_{200}$ dataset is not inclusive of all lands in Skagit County but is believed to be representative. The average $SPTH_{200}$ in Skagit County is 192 ft; with a minimum of 91 ft, a first quartile of 185 ft, a median of 202 ft, a third quartile of 223 ft, and a maximum of 245 (Figure 1).

[4] Dataset does not include lakes or marine areas.

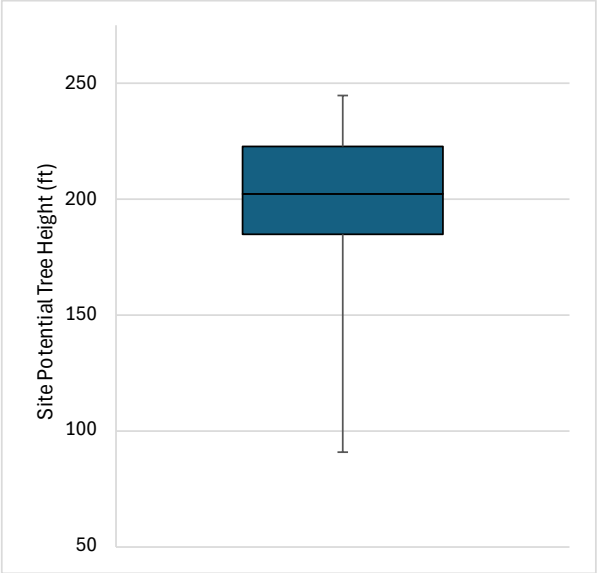

Figure 1. Box plot of $SPTH_{200}$ distribution in Skagit County (WDFW $SPTH_{200}$ Mapping Tool data accessed 6/18/24).

As a part of the CAO update, we recommend that Skagit County consider whether to follow WDFW recommended RMZ approach to stream classifications and buffer widths, including whether to incorporate the $SPTH_{200}$ Mapping Tool as part of stream buffer protection standards. This includes consideration of extending the buffer from the ordinary high water mark (OHWM) or channel migration zone, whichever is greater, to align with the RMZ buffer recommendations in Rentz et al. (2020). The County must review the BAS-based recommendations and determine the best regulatory approach for Skagit County.

Previously Established Buffers

The SCC has a provision that would maintain previously established buffers when recorded on title or protected through a tract or easement. While this ensures consistency over time, it also means that buffers do not get updated as codes are updated and older less protective buffers may be inadequate to protect critical area functions. We recommend that if the recorded buffer is less than a specified dimension of the current buffer, less any adjustments obtained through mitigation, then the new buffer should apply. Additionally, if a vested buffer is retained, it should be densely vegetated with native plants or restored.

No Net Loss of Ecological Function

For consistency with the GMA and BAS, it is recommended that Skagit County adopt a general provision, or a provision within each critical area section, to establish *no net loss of ecological function* as a protection standard that is applicable to all projects.

6.5 Fish and wildlife habitat conservation area performance-based buffer alternatives and mitigation standards (SCC 14.24.540)

Buffer Width Increasing

The SCC currently allows the Administrative Official to increase buffers in circumstances that differ from the options for wetland buffers. For consistency, we recommend that the same options apply to stream buffers as do wetland buffers, and that the same recommendations provided in the above wetlands section apply.

Buffer Averaging

For consistency, we recommend that the buffer averaging language for FWHCAs match wetlands. The FWHCAs buffer averaging language more closely matches the recommendations by Ecology (2022).

Buffer Width Decreasing

Similarly to the wetlands section, there are no stated limits in this provision to the amount a buffer width can be reduced without a variance. The recommendations in the respective wetlands section also apply here.

Mitigation Ratios

Similar to the wetlands section, there is no stated mitigation ratio for impacts to riparian buffers or reduction of riparian buffers. Skagit County should consider applying standardized buffer mitigation ratios for various types of vegetation cover. Since these instances result in a net loss of total buffer area, it is important for stream functions that mitigation is adequate to replace lost functions. It is recommended that mitigation ratios are 1:1 or greater. Ratios greater than 1:1 may be necessary to account for temporal loss, loss of buffer area, and risk of failure, and ensure no net loss of ecological function.

Allowed Uses – Docks and Bulkheads

The SCC states that docks and bulkheads are allowed uses under certain conditions which include adequate mitigation. These features are also regulated in the SMP. We would recommend that this section defer to the SMP for all shoreline regulations. In non-shoreline FWHCAs, it is recommended that bulkheads and other forms of shoreline armoring only be allowed in limited circumstances when they are essential to the protection of property and public safety. It is also recommended that the conditions in which docks are built be specified in further detail, such as in ponds and small lakes, but not to include streams not covered in the SMP.

Stormwater Manual

The SCC contains outdated references to an older version of the Stormwater Management Manual for Western Washington. This should be updated and include a provision to adopt the current versions as revised.

Timber Management

Most forest practices are exempt from the CAO pursuant to SCC 14.24.110, so this code section applies to limited circumstances such as forest practices in the urban growth area, conversions to non-timber

use, and conversion option harvest plans. These are situations in which aquatic areas that are sensitive to buffer disturbances and it is particularly important to maintain functioning buffers. SCC 14.25.540(5)(g) states an intent to provide flexibility in development proposals but does not appear to contain provisions related to development, and rather is focused on limited timber harvest within Habitat Conservation Areas. We recommend that in addition to the agency reviews listed, Skagit County require the land owner to demonstrate no net loss of critical area functions through a critical area report. Since logging in riparian management zones is expected to result in loss of function, mitigation may be necessary to offset the associated impacts. Habitat protections will need to reviewed in light of any conflicting WUI requirements on a case-by-case basis.

7. Frequently Flooded Areas

This section addresses code sections that are applicable to frequently flooded areas as located in SCC 14.24.600 through SCC 14.24.630 and Chapter 14.34 Flood Damage Prevention. A summary of recommended updates is provided in Table 5.

Table 6. General provisions review summary.

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.24.600	Frequently flooded areas designations	Clarify interface with SCC 14.34	Clarity
SCC 14.24.610	Frequently flooded areas initial project review	None	
SCC 14.24.620	Frequently flooded areas development requirements	None	
SCC 14.24.630	Frequently flooded areas protection standards	None	
SCC 14.34.005	Definitions	None	
SCC 14.34.010	Statutory authorization	None	
SCC 14.34.020	Finding of fact	Update statement to improve technical accuracy	Correction of facts
SCC 14.34.030	Statement of purpose	None	
SCC 14.34.040	Methods of reducing flood losses	None	

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.34.050	Basis for establishing areas of special flood hazard	Update sources of federal flood information	Consistency with BAS
SCC 14.34.055	Protected review area	None	
SCC 14.34.060	Compliance	None	
SCC 14.34.070	Abrogation and greater restrictions	None	
SCC 14.34.080	Interpretation	None	
SCC 14.34.090	Warning and disclaimer of liability	None	
SCC 14.34.100	Floodplain development permits	Review development activities requiring permit	Consistency with stated purpose and methods
SCC 14.34.110	Applications	Updated submittal methods regarding physical copies and requirement for flood data in applications	
SCC 14.34.120	Administrative Official - Duties	None	
SCC 14.34.130	Variances and appeals	None	
SCC 14.34.140	Elevation and floodproofing certification required	None	
SCC 14.34.150	General standards for special flood hazard areas	None	
SCC 14.34.160	Specific standards for construction in special flood hazard areas	None	
SCC 14.34.170	Standards for construction in shallow flooding areas (AO Zones)	None	
SCC 14.34.180	Standards for construction in special flood risk zones	None	
SCC 14.34.190	Standards for development activities in floodways	None	

Code Section	Title	Review Comment & Recommendations	Reason for Recommendation
SCC 14.34.200	Encroachment standards for development activities in areas where no floodway is established	None	
SCC 14.34.210	Standards for construction in coastal high hazard areas	None	
SCC 14.34.220	Habitat protection standards	Ensure alternative reports meet minimum CAO requirements, update submittal requirements	BAS and GMA consistency
SCC 14.34.230	Critter pads	None	
SCC 14.34.240	Severability	None	

7.1 Extent of FFA in relation to interface with Flood Damage Prevention Codes in SCC 14.24.600 (SCC 14.34.020)

FFA code interface

Floodplain goals and management in the FFA section should be clarified in regard to the intereface with SCC 14.34 Flood Damage Prevention and DEM data.

7.2 Finding of fact (SCC 14.34.020)

Cause of Flood Losses

SCC 14.34.020(2) states, "*flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard...*" Although it is correct that obstructions in special flood hazard areas may alter floodplain dynamics and increase flood hazards in other areas, it is incorrect to state that they are the sole cause since geography and weather are primary factors. We recommend this statement be updated for technical accuracy.

7.3 Basis for establishing areas of special flood hazard (SCC 14.34.050)

Source of Federal Information and Data

SCC 14.34.050(1) refers to outdated federal agencies for sources of flood information data including the "Federal Insurance Administration." We recommend that the official source of data for flood maps be updated to be the most recent flood maps provided by the Federal Emergency Management Agency (FEMA). FEMA is the federal agency that oversees the Federal Insurance and Mitigation Administration

and administers the National Flood Insurance Program (NFIP). This comment applies for the entire chapter, but is not repeated in each section to avoid redundancy.

7.4 Floodplain development permits (SCC 14.34.100)

Activities Requiring Permits

Permits are required for structures and development activities, but the definitions of these terms to not include clearing, grading, filling, excavating, or other land impacts which can affect flooding but are not linked to the construction of a building or structure. We recommend that this section of code or definitions be considered to ensure that a permit is required for the intended range of activities, and at minimum include the activities listed by FEMA as required for review. The FEMA definition of "development" is as follows:

> *Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials. A community without a Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM) must require a permit for all proposed construction or other development in the community, so that it can determine whether the construction or other development is proposed within a flood-prone area.*

7.5 Applications (SCC 14.34.110)

Physical Copies

If physical copies of site plans are no longer required or phased out, then this may be updated to reflect current submittal methods.

Elevations and Boundaries

According to SCC 14.34.110(3)(a) the site plan submittal currently requires the applicant to indicate *"the elevations and boundaries of the 10-, 50, and 100-year floods, where such information is available"*. The 10-year and 50-year flood elevations and boundaries are rarely available and typically not found on Flood Insurance Rate Maps (FIRMS) or Flood Insurance Studies (FIS). We recommend requiring only the elevation and location of the 100-year flood (BFE) unless it is a project which warrants special consideration to these areas.

7.6 Elevation and floodproofing certification required (SCC 14.34.140

Terminology

FEMA currently uses the terminology of "Agricultural Structures and Accessory Structures" rather than "Agricultural and Utility Buildings." We recommend updating this terminology to be consistent with FEMA.

Minimum Information Required

We recommend removing code section 14.34.140(3), because the form referenced in SCC 14.34.140(2) is required by FEMA to be filled out in its completion.

7.7 General standards for special flood hazard areas (SCC 14.34.150

Venting Standards

SCC 14.34.150(8) refers to Technical Bulletin 11-01 which has become outdated. This should be updated to refer to the current version or generally reference FEMA standards for venting standards.

7.8 Habitat protection standards (SCC 14.34.220)

Alternate Reports

According to SCC 14.34.220(1)(b) an applicant may provide a biological evaluation approved by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS), documentation of 4(d) compliance, or documentation that it fits within an approved habitat conservation plan (HCP) in lieu of a FWHCA site assessment of SFHA impact assessment. We recommend that this only be allowed if the alternate report meets all of the requitements of the FWHCA site assessment. These alternative reports are for the purpose of endangered species act (ESA) compliance, and the purpose of assessing the potential risk of a project to ESA-listed species. ESA regulations may be less strict than the CAO because they may not require mitigation, and do not require no net loss of critical area function. They are for different regulations and generally do not meet the standards of a critical areas site assessment. Furthermore, the code allows for a biological evaluation to be accepted if they are approved by USFWS *or* NMFS. However, each of these agencies only regulate a portion of listed species. USFWS oversees terrestrial wildlife and non-anadromous freshwater aquatic species, while NMFS oversees marine and anadromous species. Approval from both agencies may be needed unless it can be demonstrated that species under the other jurisdiction are not present, or the project will have no effect on listed species.

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