



MEMORANDUM

Date: July 15, 2016

To: Houghton Community Council

From: Teresa Swan, Senior Planner
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Subject: Chapter 90 KZC Amendments (Critical Areas Ordinance/Wetlands, Streams, Fish and Wildlife Conservation Areas and Frequently Flooded Areas Regulations), File CAM15-01832, #3

I. RECOMMENDATION

Review the preliminary draft Chapter 90 KZC that has been prepared in response to Planning Commission direction and Houghton Community Council comments, and provide comments to staff.

II. BACKGROUND

Following a background briefing on [January 28, 2016](#) on wetlands and streams and requirements to update Chapter 90 KZC, the Houghton Community Council held a study session on [May 23, 2016](#), to review the direction of the Planning Commission and provide comments to staff.

On [June 21, 2016](#), the City Council held a study session on the Chapter 90 amendments to review the Planning Commission's direction along with the comments from the Houghton Community Council. On [June 23, 2016](#), the Planning Commission reviewed the first part of the preliminary draft chapter through the Critical Area Report section and then on July 28, 2016, the Planning Commission will review the remainder of the chapter.

III. PRELIMINARY DRAFT CHAPTER 90 KZC

Attachment 1 is the preliminary draft Chapter 90 for review and discussion reflecting the Planning Commission's direction, and the Houghton Community Council and City Council comments.

Provided that the scope of the comments from the Planning Commission and Houghton Community Council on the preliminary draft is not extensive, staff anticipates having a **joint public hearing** with the Planning Commission and Houghton Community Council on the draft

Chapter 90 on **September 8, 2016**. This assumes that we will have a quorum for that hearing date.

A. Table of Content and Summary of Each Section

A **table of contents** for the draft Chapter 90 is provided below. A brief summary of what is included in each section is provided along with whether the section is new or revised. The order of the sections may change as the staff considers the most logical and user friendly order. Once the final order is established, staff will insert the section numbers throughout the document. This will be done before the joint hearing.

The length of the chapter reflects the numerous topics that are required to be addressed, but also submittal requirements, components needed in reports, and decisional criteria. This level of detail is needed to provide clear guidelines and expectations for city staff, decision makers, applicants and/or property owner, consultants and neighbors.

Staff will continue to edit the document for minor changes to make the provisions more precise, remove redundancies in requirements and be internally consistent. Because this code amendment project represents a complete re-write of Chapter 90, the draft is shown as a **clean copy** with no strike outs and underlines.

Summary of Preliminary Draft Chapter 90

Section	Summary of Topic Addressed
User Guide	<ul style="list-style-type: none"> Existing Chapter 90 text retained with edits.
Purpose	<ul style="list-style-type: none"> Existing Chapter 90 text retained with edits to reflect new requirements, including for Frequently Flooded Areas and Fish and Wildlife Habitat Conservation Areas section.
Applicability	<ul style="list-style-type: none"> Existing Chapter 90 text retained with edits to reflect new requirements. Adds paragraph to clarify that provisions in Chapter 90 may not be varied using provisions in other chapters. Refer to required state and federal permits that are applicable to critical areas.
Critical Area Maps and Other Resources	<ul style="list-style-type: none"> Existing Chapter 90 text retained with edits.
Regulated Activities	<ul style="list-style-type: none"> New section. Lists general categories of activities and conditions that may be regulated under Chapter 90.
Permit Process	<ul style="list-style-type: none"> New section. Table with overall permit process for different types of activities and uses
Exemptions	<ul style="list-style-type: none"> Replaces existing Chapter 90 section for exceptions.
Permitted Activities Subject to Development Standards	<ul style="list-style-type: none"> Replaces existing Chapter 90 section for exceptions. These public or private activities are reviewed by the Planning Official (planning staff) and require critical area report and mitigation sequencing. These activities have less of an impact than Public Agency Exceptions or Wetland and Stream Modifications.
Public Agency and Public Utilities Exceptions	<ul style="list-style-type: none"> New section. These public activities are reviewed by the Planning Director under a Process I depending on the scope of the project. They require critical area report and mitigation sequencing.

Section	Summary of Topic Addressed
Public Agency and Public Utilities Programmatic Permits	<ul style="list-style-type: none"> • New section. Programmatic permits are for public projects that involve the same activities done year after year or done in different locations. These public activities are reviewed by the Planning Official (planning staff) or Planning Director under a Process I depending on the scope of the project. They require a critical area report and mitigation sequencing.
Wetlands and Associated Buffer Standards	<ul style="list-style-type: none"> • Existing Chapter 90 section is completed revised.(reflects Ecology guidance) • Includes Wetland Category and Rating, Critical Area Determination, Wetland Modification and related Buffer Impacts,
Streams and Associated Buffer Standards	<ul style="list-style-type: none"> • Existing Chapter 90 section is completed revised. • Includes Stream Classification, Critical Area Determination, Stream Modification and related Buffer Impacts, Daylighting of Stream, Reduction in Buffer Standards for Changing Course or Daylighting of Stream, Stream Channel Stabilization and Restoration, Culverts and Storm Water Outfalls on Private Property (reflects Ecology guidance).
Minor Lakes	<ul style="list-style-type: none"> • Existing Chapter 90 section is revised with minor edits. • Includes public and private moorage facilities and other park activities.
Wildlife Habitat Conservation Areas	<ul style="list-style-type: none"> • New section (reflects GMA requirement). • Wetlands and forested areas are subject to this section. Fish habitat is not subject to this section since the Stream section addresses requirements for buffers, protection of streams and seasonal restrictions for construction in streams. • Includes Location of Habitat Areas, Species and Habitat Criteria, Determination of Habitat Conservation Area, Modification to Habitat Conservation Areas, General Standards, Buffer Standards, Standards for Certain Priority Species, Critical Area Report, Mitigation and City Designation and Public Nomination Process for species or habitats of local importance.
Frequently Flooded Areas	<ul style="list-style-type: none"> • Existing Chapter 90 section is revised with one minor edit (reflects Ecology guidance and Endangered Species Act requirements).
GENERAL STANDARDS	<ul style="list-style-type: none"> •
Buffer Averaging	<ul style="list-style-type: none"> • Replaces part of existing wetland buffer and stream sections (reflect Ecology guidance).
Limited Buffer Modifications and Waivers	<ul style="list-style-type: none"> • New section. • Includes Limited Buffer Modification, including interrupted buffer waiver.
Increase in Buffer Width Standard	<ul style="list-style-type: none"> • New section (reflect Ecology guidance). • There are some very limited situation where buffer width may need to be increased.
Vegetative Buffer Standards	<ul style="list-style-type: none"> • New section. • Includes Vegetative Standards, Process, When Vegetative Standard Applies, Vegetative Buffer Plan, Installation of Buffer and Maintenance.
Trees in Critical Areas	<ul style="list-style-type: none"> • Section from Chapter 95 (Tree Management) moved to Chapter 90 and revised. Reflects regulations from Chapter 83 (shoreline regulations) concerning tree removal and replacement.
Structure Setback from Buffer	<ul style="list-style-type: none"> • Existing Chapter 90 section is extensively revised by adding specific, expanded list of what improvements are permitted in the structure setback.

Section	Summary of Topic Addressed
Critical Area Determination	<ul style="list-style-type: none"> Replaces part of existing wetland buffer and stream sections.
Critical Area Report	<ul style="list-style-type: none"> Replaces part of existing wetland buffer and stream sections. Includes list of requirements for report.
Mitigation - General	<ul style="list-style-type: none"> New section. Includes Mitigation Sequencing, Approaches to Mitigation, Timing of Mitigation, Mitigation Plan, Mitigation and Restoration Standards, Monitoring and Maintenance (reflects Ecology guidance).
Wetland Compensatory Mitigation	<ul style="list-style-type: none"> New section (reflect Ecology guidance). Table contains the required ratio of mitigation for wetland and buffer fill or other types of modifications.
Measures to Minimize Impacts to Critical Areas	<ul style="list-style-type: none"> New section (reflects Ecology guidance). Includes lights, noise, toxic runoff, use of pesticides, insecticides and fertilizers, storm water runoff, pets and human intrusions, and dust.
Monitoring and Maintenance	<ul style="list-style-type: none"> Replaces part of existing wetland buffer and stream sections. New is requirement of 10 year period for mitigation of forested and shrub wetlands (not many in Kirkland) which other cities require. All other mitigation is 5 year time period which is current requirement, except for partial vegetative buffers for minor additions and improvements which require a 2-year time-period. Includes specific list of requirements for program.
Financial Security for Performance, Monitoring and Maintenance	<ul style="list-style-type: none"> Revised section. Addresses submittal requirements reflecting current department policy. Adds ability of City to extend security time when site is not maintained.
Maximum Development Potential	<ul style="list-style-type: none"> Existing Chapter 90 section is revised to address issues. Clarifies that a subdivision or lot line adjustment cannot result in the need for reasonable use exception.
Dimensional Design Standards for Residential	<ul style="list-style-type: none"> New section. Allows reduction of internal yard setbacks and front yards to accommodate development with critical areas for residential.
Reasonable Use Exception	<ul style="list-style-type: none"> Existing Chapter 90 section is revised to address issues, including public comment. Reflects staff memos and Planning Commission discussions and direction for February – April meetings.
Non-Conformances	<ul style="list-style-type: none"> New section. Includes Maintenance and Repair of Nonconforming Structures, Expansion of Nonconforming Structures that Do Not Increase the Degree of Non-Conformance, Reconstruction of Existing Nonconforming Structures, and Expansion of Nonconforming Structures that Do Increase the Degree of Non-Conformance.
Critical Area Markers, Fencing and Signage	<ul style="list-style-type: none"> Replaces part of existing wetland buffer and stream sections.
Pesticides and Herbicides	<ul style="list-style-type: none"> New section. Reflects City and State requirements.
Structure Setbacks and Buffer Required for Prior Approval	<ul style="list-style-type: none"> Existing Chapter 90 section is revised to reflect pending date of new chapter and minor edits. This section addresses vesting for prior approval and construction,

Section	Summary of Topic Addressed
Code Enforcement	<ul style="list-style-type: none"> • New section. • Addresses submittal requirements and time period to complete violation.
Dedication of Critical Area and Buffer	<ul style="list-style-type: none"> • Existing Chapter 90 section is revised with minor edits.
Liability	<ul style="list-style-type: none"> • No change to existing Chapter 90 section.
Appeals	<ul style="list-style-type: none"> • Existing Chapter 90 section is revised with minor edits.
Lapse of Approval	<ul style="list-style-type: none"> • Minor edit to existing section.

B. Review Process

The preliminary draft of Chapter 90 contains a section towards the beginning with a table of the proposed permit process for each type of activity and use. The Houghton Community Council reviewed the permit approach as part of its discussion on May 23, 2016 of the draft Chapter 90. Here is a **summary comparing the permit processes** for the existing and proposed Chapter 90 KZC. An explanation of the abbreviations for each permit process is provided below the table.

Exemptions and Permits	Existing Chapter 90 Permit Process	Draft Chapter 90 Permit Process
Exempt Activities and Uses	No review	No review
Critical Area Determination	Planning Official (P.O.)	P.O.
Minor Improvement in portion of buffer	List of minor improvements: P.O.	P.O. for permitted activities with standards and public programmatic activities
Improvements in Building Setback from Buffer	P.O.	P.O.
Wetland Buffer Modification	-Type 1: Process IIA -Type 2: Process IIA -Type 3: P.O.	P.O. for buffer averaging and isolated buffer waiver
Stream Buffer Modification	-Type A: Process IIA -Type B: Process I -Type C: Process P.O.	P.O. for buffer averaging, isolated buffer waiver and daylighting stream
Wetland Modification	-Type 1: Process IIB* -Type 2: Process IIA -Type 3: P.O. <i>(*See footnote below)</i>	-Process I for modifications, public agency exceptions and public programmatic activities. -Unless permitted with standards, then P.O.
Stream Modification	Type A: Process I Type B: Process I Type C: P.O.	-Process I for modifications, public agency exceptions and public programmatic activities. -Unless permitted with standards, then P.O.

Stream Culvert	Process I	Process I
Stream Daylighting	Process I	P.O.
Stream Bulkhead (stream channel stabilization)	P. O.	Process I
Reasonable Use Exception	-Up to 3,000 sf of disturbance: Process I -More than 3,000 sf of disturbance: Process IIA	Process I
Totem Lake and Forbes Lake moorage facilities	Process I	Process I

- Process IIB = Hearing Examiner recommendation and City Council decision. Houghton Community Council disapproval jurisdiction.
- Process IIA = Hearing Examiner decision with appeal to City Council
- Process I = Planning Director decision with appeal to Hearing Examiner
- Planning Official (P.O.) = project planner

**Note: Type 1 wetlands do not exist outside of the shoreline jurisdiction (Lake Washington) for the Houghton area. Type I Wetlands inside the shoreline jurisdiction area are regulated under Chapter 83 KZC (shoreline regulations) and not Chapter 90 KZC. Thus, HCC would not review a Type 1 wetland modification proposal under Chapter 90 through a Process IIB.*

Those critical area permits that are currently approved by the City Council (Process IIB) with Houghton Community Council disapproval jurisdiction (*see footnote above*) and Hearing Examiner (Process IIA) under the existing Chapter 90 KZC are proposed to be reduced to the Planning Director (Process I – public notice provided and public comment accepted) because the decisions are **not policy in nature but technical in nature**. The technical issues to be considered in the decision are:

- to what extent the critical area is impacted;
- are the impacts the minimum necessary; and
- whether the proposed mitigation will offset the impacts.

The new requirements for mitigation sequencing, compensatory wetland mitigation, mitigation plans, and required measures to reduce impacts provide clear and substantive standards for mitigation.

The process for daylighting a stream is reduced from a Planning Director to a Planning Official to encourage taking a stream out of a culvert. The process for stabilizing a streambank is increased from a Planning Official to a Planning Director to ensure that the applicant has considered all options before requesting to change the bank of a stream channel.

IV. FOLLOW-UP FROM HOUGHTON COMMUNITY COUNCIL MEETING

The Houghton Community Council’s comments provided at its May 23, 2016, meeting are summarized below along with staff’s response at the meeting and in some cases subsequent research. The Planning Commission discussed the comments at its June 23, 2016 meeting and its direction is provided below.

A. Buffer Standard for Seasonal Stream with No Fish

1. Background

The Houghton Community Council expressed concern about the proposed 50 foot wide buffer for seasonal streams with no fish when some other cities have a narrower buffer width for that type of stream.

Staff's response at the meeting: Seasonal and perennial streams (also 50' width buffer) should have the same buffer width requirement based on their functions and values. Also, many jurisdictions require the same 50 feet buffer as being proposed. Overall the proposed buffer widths for the three stream types are comparable with other local jurisdictions.

2. Planning Commission Direction: *Retain the 50 foot wide buffer for seasonal streams with no fish (Type NS streams).*

B. Front Yard Setback Reduction

1. Background

The Houghton Community Council expressed concern about the proposal to allow reduction in the front yard setback from 20' to 10' for any site to provide flexibility in site design, and how it may impact arterials and collector streets.

Staff response at the meeting: A reduction in the front yard setback from 20' to 10' is currently allowed for reasonable use exceptions and will help offset site constraints of critical areas for non-reasonable use exception sites. The front yard reduction would be limited to situations where the garage is on the side or back of the house or a parking pad is located perpendicular to the garage. A parking pad of 18.5 feet in length is required which is usually in the front driveway of the house.

2. Planning Commission Direction: *Provide the allowance for a front yard reduction.*

C. Nonconforming Structures

At its May 23 meeting, the Houghton Community Council supported overall non-conformance provisions that provide flexibility but raised the following concerns:

- a. Requirement for Locational Analysis: The Houghton Community Council expressed concern about requiring location analysis for a proposed addition to a non-conforming house that would be located in a critical area buffer. Locating an addition for a new room or enlarged room has limitations given the floor plan of the house, utilities and other improvements. They requested that justification not be required as to why an addition in a critical area buffer must be located where it is proposed in relationship to the existing floor plan and not further way from the critical area.

Staff response: Staff indicated at the meeting that the Community Council's comment had merit and staff would consider it.

Staff contacted the City of Bellevue who has the provision to require a locational analysis and found out that in most cases the original location is approved. Based on the HCC comments, staff has subsequently **revised this provision** and recommended to the Planning Commission that the **requirement be eliminated**. Most homeowners will place additions where they are needed to function with the existing floor plan. The preliminary draft chapter reflects this change in approach.

Planning Commission Direction: *Do not require locational analysis for an addition in the critical area buffer for a non-conforming structure.*

- b. Size of Addition Anywhere in the Critical Area Buffer: The Houghton Community Council questioned not allowing a footprint of **1,000 square feet anywhere in the critical area buffer** as does King County.

Staff response at the meeting: Ecology does not support encroachments unless they are on the opposite side of the house from the critical area, but has accepted regulations that allow encroachments elsewhere in critical area buffers if they are minor in size and based on location. Most jurisdictions surveyed by staff do not permit any encroachment into the buffer.

The Planning Commission direction's is to allow some flexibility with a range from 250 sq. ft. to 1,000 sq. ft. encroachments depending on the location of the addition in the critical area buffer. Several other jurisdictions use the same range of allowable additions to minimize the impact to the buffer.

As a reminder, the provision for additions is based on the **footprint** of a house and not the total square footage of the addition. Adding a second or even third floor above the footprint could result in an addition of up to 3,000 square feet.

Planning Commission Direction: *Allow additions up to 250 sq. ft., 500 sq. ft. and 1000 sq. ft. depending on the location in the buffer.*

- c. Rebuilding Foundation of Non-Conforming Structure: The Houghton Community Council would prefer to allow a foundation of a nonconforming structure to be replaced in same location as reconstruction of the structure. Foundations sometimes need to be replacement after casualty damage to a structure.

Staff response at the meeting – A **damaged foundation** that must be removed and replaced should be relocated as far from the wetland or stream as possible taking into consideration the location of existing improvements and site constraints. It is a reasonable expectation to require bringing a nonconforming structure into conformance as much as possible with a complete rebuild of a foundation.

Current regulations would not allow a rebuild of causality damage unless a 50% valuation threshold is met so the Planning Commission's direction of allowing a complete rebuild in all casualty situations is a significant shift in favor of replacing non-conforming structures

Planning Commission Direction: *Require foundation replacement to be relocated as far as possible from the critical area.*

V. CITY COUNCIL MEETING OF JUNE 21, 2016

The City Council had a study session on June 21, 2016 to review the direction of the Planning Commission and comments from the Houghton Community Council. They indicated general agreement with the Planning Commission's direction, except for three areas.

First, several Council members wanted to extend the allowance for deviations to required yard setbacks for **reasonable use exceptions to commercial uses** similar to residential uses. Of concern are some commercial developments in the Totem Lake area next to wetlands. Second, one Council member was concerned about allowing certain **high impacting retail uses** to apply for a reasonable use exception because of the potential impact to the buffer and critical area. The Planning Commission's direction is to not allow the following retail uses to apply for reasonable use exceptions: gas stations, restaurants, taverns, car sales and service and drive through facilities. The Houghton area would not have reasonable use exception applications for commercial uses due to the lack of wetlands next to commercial areas.

Lastly, one Council member is concerned about allowing **additions into buffers for non-conforming structures** if the proposed regulations will allow greater encroachments into buffers than what is allowed under the current Chapter 90.

VI. PLANNING COMMISSION MEETING OF JUNE 23, 2016

The Planning Commission reviewed the first part of the preliminary draft Chapter 90 through the Critical Area Report section and then on July 28, 2016, the Planning Commission will review the remainder of the chapter. They had very few comments on the first part of the preliminary draft chapter other than about whether to allow **solid fences** along the edge of the buffer rather than requiring rail (open) fences.

The current code requires rail fences. The purpose of a fence along the edge of the buffer is to delineate the boundary of the buffer. The purpose of a rail fence is to allow wildlife habitat in and out of the buffer and view of the buffer for adjacent residents and tenants. Having an open view of the buffer encourages maintenance of the area and discourages walling off the buffer which can lead to people dumping debris into the buffer. However, solid fences provide privacy and more security.

VII. FOUR WETLAND CASE STUDIES

The Watershed Company analyzed four case studies of wetlands looking at properties with different wetland categories and habitat scores to analyze and illustrate the effects of the regulations, if any, on a development scenario for each study. The scenarios do not reflect specific development proposals but scenarios that could likely be proposed. The case studies looked at wetlands and their buffers around Juanita Bay, Forbes Lake and Totem Lake and in the Totem Lake Neighborhood. None of the studies look at wetlands in the Houghton area since the area has very few wetlands and those that exist are minor wetlands. See Attachment 2.

VIII. REMAINING CODE AMENDMENTS TO PREPARE

Before the public hearing on the draft Chapter 90, staff will prepare minor amendments to the following chapters to reflect the changes to Chapter 90.

- Chapter 5: Definitions (reflect Chapter 90 terms)
- Chapter 75: Historic Overlay (indicate that provisions in Chapter 90 cannot be varied)
- Chapter 95: Tree Management (delete provisions that address vegetation in critical areas – these have been moved to Chapter 90)
- Chapter 120: Variances (indicate that provisions in Chapter 90 cannot be varied)
- Chapter 125: Planned Unit Development (indicate that provisions in Chapter 90 cannot be varied, including increase in density)
- Chapter 162: Nonconformances (reflect Chapter 90 conformance provisions and make other needed amendments)
- Subdivision Ordinance in the KMC (make amendments to be consistent with the new Chapter 90)
- Kirkland Municipal Code (change section references that address Chapter 90)
- Other chapters as needed once a complete review of the codes has been done

IX. NEXT STEPS

- On July 28, 2016: Planning Commission will review the remainder of the draft Chapter 90 starting with the Mitigation section.
- Staff will:
 - Send the draft Chapter 90 to the Department of Commerce for the required 60-Day Review in advance of adoption consistent with GMA. Copies will also be sent to Department of Ecology, Department of Fish and Wildlife, the Muckleshoot Tribe and FEMA for their comments.
 - Complete the requirements of the State Environmental Policy Act by issuing a SEPA determination on the code amendments.
- If there is a quorum for both the Planning Commission and the Houghton Community Council, staff anticipates holding a joint public hearing on September 8, 2016, on the draft Chapter 90 KZC.

ATTACHMENTS:

1. Preliminary Draft Chapter 90 KZC
2. Four case studies of wetlands showing effect of proposed regulations on different wetland types and habitat scores using development scenarios

Chapter 90 – CRITICAL AREAS – WETLANDS, STREAMS, MINOR LAKES, FISH WILDLIFE HABITAT AREAS, AND FREQUENTLY FLOODED AREAS

Sections:

90.05 User Guide

The regulations in this chapter apply to activities, alterations, work, and conditions in or near any wetland, stream, minor lake, wildlife habitat area, or frequently flooded area. These regulations add to and in some cases supersede other City regulations. Anyone interested in conducting any development activity on or near one of these critical areas; wishing to participate in the City's decision on a proposed development on or near any of these areas; or wishing to have a determination made as to the presence of one of these areas on their property, should read these regulations.

For properties within jurisdiction of the Shoreline Management Act, the regulations in Chapter 83 KZC must be met. Chapter 83 KZC contains wetland, stream and flood hazard reduction regulations for properties located within its jurisdiction. However, regulations contained in this chapter that are not addressed in Chapter 83 KZC continue to apply, such as bond or performance security, dedication and liability.

90.10 Purpose

These regulations were prepared to comply with the Growth Management Act and implement the goals and policies of the City's Comprehensive Plan. The purpose of these regulations is to protect the environment, human life, and property. This purpose will be achieved by preserving the important ecological functions of wetlands, streams, minor lakes, fish and wildlife habitat, and frequently flooded areas using best available science. The designation, classification, and regulation of these critical areas are intended to assure their preservation and protection from loss or degradation, no net loss of ecological functions and to restrict incompatible land uses.

These critical areas perform a variety of valuable biological, chemical, and physical functions that benefit the City and its residents. The functions of these critical areas include, but are not limited to, the following:

1. Wetlands – Wetlands perform the following eight functions: 1) flood/storm water control, 2) base stream flow/groundwater support, 3) erosion/shoreline protection, 4) water quality improvement, 5) general habitat functions, 6) specific habitat functions, 7) cultural and socioeconomic values, and 8) natural biological support. Natural biological support refers to the ability to support diverse lifeforms, and is based on a wetland's vegetation structure and diversity, landscape-scale connectivity, surface water conditions, and organic accumulation and export potential. Wetland functions for flood and stormwater control, erosion protection, and water quality improvement are particularly valuable to protect infrastructure and limit the effects of development on water quality in the City's streams and lakes.

Wetland buffers serve to moderate runoff volume and flow rates; reduce sediment loads; remove waterborne contaminants such as excess nutrients, synthetic organic chemicals (e.g., pesticides, oils, and greases), and metals; provide shade for surface water temperature moderation; provide wildlife habitat; and deter harmful intrusion into wetlands. Wetlands are protected in part by buffers, which are upland areas adjacent to wetlands.

Buffers are vegetated areas next to wetlands that can protect them from or reduce the impacts of adjacent land uses. Buffers also provide terrestrial habitat for wetland-dependent species that need both aquatic and terrestrial habitats for their life-cycle. Buffers serve to moderate precipitation and stormwater inputs (hydrology maintenance), remove sediment, excess nutrients, and toxic substances (water quality improvement), influence microclimate, maintain adjacent habitat critical for wetland-dependent species, maintain habitat connectivity (wildlife habitat), and screen adjacent disturbances (disturbance barrier). The factors that influence the performance of a buffer include vegetative structure, percent slope, soils, and buffer width and length.

The primary purpose of wetland regulations is to achieve a goal of no net loss of wetland function, value, and acreage, which, where possible, includes enhancing and restoring wetlands and the associated buffers that are not covered under the City's Shoreline Master Program for larger waterbodies.

2. Streams – Streams and their associated buffers provide important fish and wildlife habitat and travel corridors; help maintain water quality; store and convey storm and flood water; recharge groundwater; and serve as areas for recreation, education, scientific study, and aesthetic appreciation. Streams are protected in part by buffers, which are adjacent upland areas that interact with streams.

Stream buffers serve an important role in maintaining stream function important for supporting diverse and productive fish population. These include water quality (i.e. sediment, nutrients, metals, pathogens, herbicides, and pharmaceuticals), water temperature and microclimate, bank stability, invertebrate communities, inputs of organic detritus, instream habitat complexity, including large woody debris, and habitat travel corridors.

The primary purpose of stream regulations is to avoid reducing stream and riparian corridor functions, and where possible, to enhance and restore streams and riparian areas.

3. Minor Lakes – Minor Lakes provide important fish and wildlife habitat; store and convey storm and flood water; recharge ground water; store ground water discharge; and serve as areas for recreation, education, scientific study, and aesthetic appreciation. Because the shallow perimeter of minor lakes often meets the definition of a wetland, many uses and activities in and around lakes are regulated under the wetland regulations.

The primary purpose of the minor lake regulations is to avoid impacts to lakes and contiguous stream and wetland areas, and where possible, to enhance and restore lakes.

4. Fish and Wildlife Habitat – Fish and wildlife habitat areas provide important nesting territory as well as spawning and protection areas for endangered, threatened, and sensitive species that have a primary association with that habitat area. The habitat areas help maintain long term viability of these species and contribute to the state's biodiversity. Preservation of the vegetation, faunal, and hydrologic characteristics of these habitat areas is critical to maintaining these species.

The primary purpose of fish and wildlife habitat area regulations is to protect habitats from impacts of adjacent urban uses by minimizing fragmentation of native habitat, controlling invasive

species, maintaining or providing habitat connectivity with vegetated corridors between habitat patches, preserving habitat features including native vegetative, snags and downed wood, and providing buffers of adequate width adjacent to the habitat areas.

5. Frequently Flooded Areas – Frequently flooded areas are areas of special flood hazard that help to store and convey storm and flood water; recharge ground water; provide important riparian habitat for fish and wildlife; protect the functions and values of floodplains and serve as areas for recreation, education, and scientific study. Development within these areas can be hazardous to those inhabiting such development, and to those living upstream and downstream. Flooding also can cause substantial damage to public and private property that results in significant costs to the public as well as to private individuals.

The primary purpose of frequently flooded areas regulations is to manage potential risks to public safety and damage to public and private property due to flooding, and to protect instream habitat areas. The City of Kirkland uses FEMA maps to determine the location of frequently flooded areas.

90.15 Applicability

1. General – These regulations apply to any property that contains any of the following:
 - a. Wetlands;
 - b. Streams;
 - c. Minor Lakes;
 - d. Fish and Wildlife Habitat Areas
 - e. Frequently Flooded Areas; and
 - f. Buffers required for the above.
2. Conflicting Provisions – The regulations in this chapter supersede any conflicting regulations in the Kirkland Zoning Code. For properties within jurisdiction of the Shoreline Management Act, the regulations in Chapter 83 KZC supersede any conflicting regulation in this chapter. If more than one regulation applies to the subject property, then the regulation that provides the greatest protection to critical areas shall apply.
3. Modifications to Provisions in this Chapter – The regulations in this chapter may not be modified using other provisions in this code, such as but not limited to historic overlay (Chapter KZC 75), variances (Chapter KZC 120), or planned unit developments (Chapter KZC 125), unless as specified in KZC.90.__.
4. Other Jurisdictions – Nothing in these regulations eliminates or otherwise affects the responsibility of the applicant or property owner to comply with all other applicable local, state, and federal regulations and permit requirements that may be required.
5. SEPA Compliance – Nothing in these regulations or the decisions made pursuant to these regulations affects the authority of the City to review, condition, and deny projects under the State Environmental Policy Act, Chapter 43.21C RCW.

90._ Critical Areas Maps and Other Resources

The City maintains general mapping of known critical areas. These maps and other available resources (such as topographic maps, soils maps, and air photos) are intended only as guides. They depict the approximate location and extent of known critical areas. Some critical areas depicted in these resources may no longer exist and critical areas not shown in these resources may occur. The provisions of this Chapter and the findings of a critical areas report and review of the report by the City take precedence over the City’s mapping. Property owners and project applicants are strongly advised to retain qualified critical area professionals to conduct site-specific studies for the presence of critical areas and related buffers.

90._ Regulated Activities

Regulated activities have a potential to adversely impact a critical area or its established buffer. The following activities shall be regulated by this chapter:

- a. Removal, excavation, grading or dredging of soil, sand, gravel, minerals, organic matter, or material of any kind;
- b. Dumping of, discharging of, or filling with any material.
- c. Draining, flooding, or disturbing the water level or water table;
- d. Driving pilings or placing obstructions;
- e. Exterior construction or reconstruction, or expansion of any structure;
- f. Demolition of any structure;
- g. Destruction or alteration of vegetation through clearing, pruning, topping, harvesting, shading, intentional burning, or planting of vegetation that would alter the character of a regulated critical area.
- h. Activities that result in significant changes of water temperature and physical or chemical characteristics of water sources to the critical area, including quantity and pollutants.
- i. Any other development activity.

90._ Permit Process

1. The regulated activities in this chapter shall be considered using the following permit processes:

Type of activity or use	Review Process	Section
Exemptions	Activities permitted outright, (reviewed with underlying development or land surface modification permit - no review fee)	KZC 90._
Permitted Activities	Planning Official Permit	KZC 90._
Public Agency and Public Utility Exception	Process I - Planning Director Permit	KZC 90._
Critical Area Determination	Planning Official Permit	KZC 90.
Wetland and Stream Modifications	Process I – Planning Director Permit	KZC 90._
Stream Daylighting	Planning Official Permit	KZC 90._

Stream Channel Stabilization	Process I – Planning Director Permit	KZC 90._
Wetland and Stream Buffer averaging	Planning Official Permit	KZC 90._
Moorage Facilities and Other Improvements on Totem Lake and Forbes Lake	Process I – Planning Director Permit	KZC 90._
Reasonable Use Exceptions	Process I – Planning Director Permit	KZC 90.
Interrupted Buffer	Planning Official Permit	KZC 90._
Nonconformance	Planning Official Permit	KZC 90._

2. If the development, use or activity that requires approval through Process I is part of a proposal that requires additional approval through Process IIA or Process IIB, the entire proposal will be decided upon using that other process.

90.20 Exemptions

The following activities have little or no environmental impact, are temporary in nature or are an emergency and are therefore exempt from the provisions of this chapter, unless otherwise determined by the Planning Official. All exempted activities shall use reasonable methods to avoid impacts to critical areas.

An exemption does not give permission to degrade a critical area or ignore risk from natural hazards. Any temporary damage to, or alteration of a critical area or buffer, shall be restored, rehabilitated, or replaced to prior condition or better at the responsible party’s expense. Revegetation shall occur during the wet season, but no later than 180 days since the damage or alteration of the critical area or buffer occurred. All other restoration or rehabilitation shall be completed within 60 days of the damage or alteration, unless otherwise approved by the Planning Official.

1. Structures. Normal and routine repair and maintenance of existing legally established, functioning structures, other than public streets and public utilities within critical area buffers. See KZC 90.____, Non-conformances.¹
2. Demolition. Removal of structures provided that all disturbed areas are restored.
3. Public Streets. Repair and maintenance and reconstruction of existing public streets, associated appurtenances, roads, bike lanes, and sidewalks.^{2, 5, 6}
4. Public Utilities. Repair and maintenance, replacement or new public utility structures and utility systems and their associated facilities, lines, pipes, mains, poles, equipment and appurtenances - both above and below ground, within existing improved rights of way or existing improved utility corridor. This provision does not include new electric facilities that exceed 55 KV and substations, and new or replacement of hazardous liquid pipelines that increase pipeline circumference.^{3, 5, 6}
5. Existing Non-Motorized Public Trails. Repair and maintenance of existing, improved non-motorized public trails, including the Cross Kirkland Corridor and Eastside Rail Corridor.^{1, 6}

6. Landscaping. Landscape maintenance of non-conforming lawns and gardens; including mowing, pruning, weeding, and planting; provided that such activities do not expand any further into critical areas or buffers.
7. HVAC Equipment. Addition of HVAC equipment with a footprint of less than nine square feet, provided that there is no feasible alternative location available, it does not expand the area of permanent disturbance, it is as far as possible from the critical area and includes noise minimization techniques.
8. Site investigative Work and Studies. Site investigative work and studies necessary for land use applications, including geotechnical tests, water quality studies, wildlife studies, and critical area investigations; provided, that any disturbance of the critical area or its buffer shall be the minimum necessary to carry out the work or studies. Use of any mechanized equipment requires prior approval of the Planning Official.
9. Public Restoration.⁶
 - a. Restoration of a critical area and its buffer on slopes of less than 30% and no land surface modification required through the removal of non-native invasive plant species listed in the King County Noxious Weed List and revegetation with appropriate native vegetation in the entire area cleared of invasive plants using the Vegetative Buffer Standards in KZC 90.____ as a guideline for type and density of plants. Replacement shall be at least at a 1:1 ratio;
 - b. Restoration work shall be restricted to hand removal. Hand removal equipment includes shovels, tillers, clippers, loppers, weed wrenches, and brush cutters and any hand held gas or electric equipment;
 - c. Machinery can be used if machinery can access the buffer from an abutting paved roadway without encroaching into the buffer; and
 - d. Citizen volunteers doing restoration must be under the direct supervision of City staff.
10. Private Restoration.⁶
 - a. Restoration of a critical area and its buffer on slopes of less than 30% and no land surface modification required through the removal of non-native invasive plant species listed in the King County Noxious Weed List and revegetation with appropriate native vegetation in the entire area cleared of invasive plants using the Vegetative Buffer Standards in KZC 90.____ as a guideline for type and density of plants. Replacement shall be at least at a 1:1 ratio;
 - b. A planting restoration plan must be submitted to the Planning Official for review of approval prior to any disturbance to the buffer. The plan must include the area to be restored, method of removal, a detailed native planting plan with a plant list and schedule for commencement and completion of the project;
 - c. Restoration work shall be restricted to hand removal. Hand removal equipment includes shovels, tillers, clippers, loppers, weed wrenches, and brush cutters and any hand held gas or electric equipment;
 - d. All removed plant material shall be taken away from the site; and plants that appear on the King County Noxious Weed List must be handled and disposed of according to a noxious weed control plan appropriate to that species.
11. Other. Educational activities, scientific research, and passive outdoor recreational activities such as bird watching, fishing, and hiking, not including trail building or clearing.
12. Emergency Activities. Emergency activities necessary to prevent an immediate threat to public health, safety, or welfare. Alterations shall be reported to the City within seven (7) days to provide evidence of threat or imminent danger. The City may require a permit to be obtained after-the-fact and require

the critical area and its buffer to be fully restored in accordance with a critical area report and mitigation/maintenance plan.⁴

Notes:

¹ Repair and maintenance shall not increase the previously approved structure footprint within a critical area or its buffer, and shall not include foundation replacement.

² Public street activities shall not expand the area of existing permanent disturbance, increase the impervious area in the right-of-way, or reduce flood storage capacity in the critical area or critical area buffer. Public Street activities in this provision also include expansion of pavement into previously disturbed impervious areas. See Plate ___.

³ Public utility activities shall not expand the area of existing permanent disturbance or increase the impervious area in the right-of-way or utility corridor (except utility poles), or reduce flood storage capacity in the critical area or critical area buffer. New or replaced overhead electric utilities and their associated facilities that will result in additional disturbance of the critical area or its buffer as a result of ongoing required maintenance shall not be exempt.

⁴ All restoration and mitigation shall occur within the timeframe established with the underlying permit, but in no case more than one year from the date of the emergency.

⁵ The construction drawings shall show the edge of the existing improved right-of-way or utility corridor, and the permanently disturbed area. The drawings shall also specify that all affected critical areas and buffers will be restored to their pre-project condition or better, including soil stabilization and revegetation, during or within 60 days of site disturbance.

⁶ All activities shall be undertaken using best management practices as determined by the Planning Official and adhere to the fish and wildlife seasonal restrictions on construction activities as determined by the Washington State Department of Fish and Wildlife pursuant to KZC 90.____.

90.22 Permitted Activities or Uses Subject to Development Standards

1. Permitted Activities and Uses. Certain activities and uses are permitted subject to the following approval and development standards. Those activities and uses not meeting the standards in this section may be proposed under KZC 90.____, for public agencies and KZC 90.____ or KZC 90.____ for private development.
2. Process. The Planning Official may approve a permitted activity or use. The general and specific standards in subsections 5 and 6 along with the mitigation plan shall be conditions of approval.
3. Decisional Criteria. the Planning Official may approve a permitted activity or use if it is determined that:
 - a. There is no practical alternative location with less adverse impact on the critical area or its buffer based on a critical area report and mitigation sequencing pursuant to KZC 90.____.
 - b. The mitigation plan pursuant to KZC 90.____ sufficiently mitigates impacts; and
 - c. The project plans meet the general and specific standards in subsections 5 and 6 below.
4. Critical Area Report. The applicant shall submit a critical area report pursuant to KZC 90.____.

5. General Standards. The list of permitted activities or uses in subsection 6 below shall meet the following standards:
- a. Meet the requirements of mitigation sequencing pursuant to KZC 90.____;
 - b. Implement a mitigation plan pursuant to KZC 90.____;
 - c. No adverse impact on water quality or conveyance or degradation of critical area functions and values;
 - d. Locate structures and improvements to minimize removal of significant trees;
 - e. Restore temporary disturbance areas associated with the work to pre-project conditions pursuant to a mitigation plan;
 - f. Specify in the construction drawings that all affected critical areas and buffers will be expeditiously restored to their pre-project condition or better; and
 - g. If located in a fish or wildlife habitat conservation area, meet requirements of KZC 90.____.
6. List of Permitted Activities and Uses. The following activities and uses may be permitted provided that the standards applicable to each activity or use and the general standards in subsection 5 above are met.
- A. Private, non-motorized trails, stream crossings, and benches.
- 1) The improvement shall be located only in the outer twenty-five percent (25%) of the buffer area. Exceptions are stream crossings, and trail access to Forbes Lake and Totem Lake which may require access through a buffer or wetland to get to the lake;
 - 2) Stream crossings are not permitted in Type F streams under this permit. See KZC 90.____ to proposed stream crossing of Type F stream;
 - 3) Trails shall be limited to pervious surfaces no more than three (3) feet in width. Raised boardwalks utilizing non-treated pilings may be acceptable;
 - 4) Stream crossings shall meet the standards for crossings in KZC 90.____ and Washington State Department of Fish and Wildlife's Water Crossing Guidelines;
 - 5) Buffers shall be expanded, where possible, equal to the width of the trail corridor and disturbed areas.
- B. Private and Public In-Stream Maintenance.
- 1.) Work limited to removing debris, sediment, invasive vegetation and replanting of streambank with native vegetation to improve in-stream fish habitat, fish passage and flow conveyance;
 - 2.) Work must be done by hand. Hand removal equipment may include shovels, tillers, clippers, loppers, weed wrenches, and brush cutters and any hand held gas or electric equipment;
 - 3.) Public work may include machinery if it can access the buffer from an abutting paved roadway without encroaching into the buffer; and
 - 4.) Work may not occur during Washington State Fish and Wildlife's seasonal restrictions on work in a fish bearing stream.
- C. Private repair and maintenance within critical areas or buffers not otherwise addressed in KZC 90. ____ for exemption; such as maintenance of culverts.
- 1) Work limited to removing impediments to improve flow conveyance;
 - 2) Work must be done by hand; and
 - 3) May not occur during Washington State Fish and Wildlife's seasonal restrictions on work in a fish bearing stream.

D. Public and Private Restoration.

- 1) Restoration of a critical area and its buffer on slopes of 30% or greater and/or land surface modification for the removal of non-native invasive plant species listed in the King County Noxious Weed List and revegetation with appropriate native vegetation in entire area cleared of invasive plants using the Vegetative Buffer Standards in KZC 90.____ as a guideline for type and density of plants. Replacement shall be at least at a 1:1 ratio.
- 2) For restoration on slopes 30% or greater, a geotechnical report is required along with an erosion control plan. A geotechnical report is not required for restoration work done on City property that is more than 150 feet from an adjacent building or from non-city property;
- 3) Other restoration, such as creating nest boxes, that are determined to improve protect or restore natural processes;
- 4) Removal of invasive plant species and other restoration work shall be restricted to work by hand, including use of shovels, tillers, clippers, loppers, weed wrenches, and brush cutters and any hand held gas or electric equipment;
- 5) For public restoration, machinery can be used if machinery can be stationed from an abutting paved roadway to do the work without driving into the buffer;
- 6) For public restoration, citizen volunteers doing restoration must be under the direct supervision of City staff; and
- 7) For private restoration, removed invasive plant material shall be taken off the site; and plants that appear on the King County Noxious Weed List must be handled and disposed of according to a noxious weed control plan appropriate to that species.

E. Public Agency and Public Utility Activities.

- 1) Non-motorized trails, stream crossings, benches, and wildlife-viewing structures, provided:
 - a) The structure shall be located only in the outer twenty-five percent (25%) of the buffer area, except for stream crossings and public access through wetlands connecting to Forbes Lake and Totem Lake;
 - b) Stream crossings are not permitted in Type F streams under this permit. See KZC 90.____ to proposed stream crossing of Type F stream;
 - c) Trails shall be limited to pervious surfaces no more than five (5) feet in width. Raised boardwalks utilizing non-treated pilings are acceptable; and
 - d) Vegetative buffers shall be provided where possible, equal to the width of any portion of the trail corridor that is disturbed using KZC 90.____ as a guideline.
- 2) Public Streets - Widening of existing public streets in critical area buffers, provided:
 - a) The facility shall only be located in the outer 25% of the buffer area; and
 - b) Any necessary culvert modification or extension is designed to meet the Washington Department of Fish and Wildlife's Water Crossing Guidelines.
- 3) Public Utilities:
 - a) New sewer and water lines in critical area buffers, provided they shall be located as far as possible from the critical area edge to allow for gravity flow.
 - b) New public utilities other than those addressed separately in this section in critical area buffers, such as gas and power, except not substation buildings, provided that:
 - (1) The facility shall be only located in the outer 25% of the buffer area; and

- (2) The facility is not a hazardous liquid or gas pipeline.
 - c) Drilling for utilities/utility corridor under a critical area, provided:
 - (1) Not permitted in a Category I Wetland;
 - (2) Entrance/exit portals must be located completely outside of the critical area buffer;
 - (3) Drilling does not interrupt the ground water connection to the wetland or percolation of surface water down through the soil column; and
 - (4) Specific studies by a hydrologist are required to determine whether the ground water connection to the critical area or percolation of surface water down through the soil column will be disturbed.
 - d) New stormwater outfalls and associated dissipation devices, such as flow spreaders and rock pads, within critical area buffers, provided:
 - (1) Discharge of stormwater outside of the buffer is not feasible as determined by the City, or;
 - (2) If property adjoining the buffer is greater than 15% slope, specific studies by a geotechnical engineer or engineering geologist demonstrate that discharge outside of the buffer will cause slope instability or excessive erosion, and therefore the discharge should be in the buffer, and
 - (3) The outfall is located as far as possible from the critical area.
- E. Improvements associated with the Cross Kirkland Corridor and Eastside Rail Corridor.
- 1) New, modified or relocated public non-motorized trails within the Cross Kirkland Corridor and Eastside Rail Corridor and connecting to either corridor approved under the City's Cross Kirkland Corridor Master Plan or as amended, provided that:
 - a) Porous materials such as permeable asphalt, porous concrete, mulch, woodchips or other organic surfaces or raised boardwalks utilizing non-treated pilings are used; and
 - b) Buffers shall be provided, where possible given existing conditions and improvements, equal to the width of any newly disturbed areas.
 - 2) Replacement or modification of existing facilities by a public utility in either corridor, provided the activity shall not increase the impervious area (except utility poles), expand into previously undisturbed areas, or remove flood storage capacity.
- F. Improvements Associated with Park Master Plan. Any new or modified park improvements approved under a park master plan approved by the City Council, provided that:
- a) Porous materials such as permeable asphalt, porous concrete, mulch, woodchips or other organic surfaces or raised boardwalks utilizing non-treated pilings are used; and
 - b) Buffers shall be provided, where possible given existing conditions and improvements, equal to the width of any newly disturbed areas.

90.25 Public Agency and Public Utility Exception

If strict application of this chapter would prohibit a development proposal by a public agency or public utility, the agency may apply for an exception pursuant to this section.

- 1. Process. A critical area exception for public agencies and public utilities shall be reviewed as a Process I permit, pursuant to KZC Chapter 145. The application shall include the City's critical area

determination pursuant to KZC 90.____ and a critical area report pursuant to KZC 90.____, including a restoration and mitigation plan, and any other related project documents.

2. Decisional Criteria. The Planning Director shall make a decision based on the following criteria:
 - a. There is no other practical alternative to the proposed development with less impact on the critical areas or buffer;
 - b. Strict application of this chapter would unreasonably restrict or prohibit the ability to provide public utilities, or public agency services to the public;
 - c. The proposal minimizes impacts to the critical area or buffer through mitigation sequencing, and type and location of mitigation, pursuant to KZC 90.____, including such installation measures as locating facilities in previously disturbed areas, boring rather than trenching, and use of pervious or other low impact materials; and
 - d. The proposal protects and/or enhances critical area and buffer functions and values, consistent with the best available science and with the objective of no net loss of critical area functions and values.

90.30 Programmatic Permit– Public Agency and Public Utility

1. General. A public programmatic permit may be issued for either a permitted activity subject to development standards or a public agency or public utility exception, if it meets the requirements of this section, as determined by the Planning Official. Exempted activities pursuant to KZC 90.____ do not require a programmatic permit.
2. Criteria for a Programmatic Permit. The activity shall:
 - a. Be repetitive and part of a maintenance program or other similar program;
 - b. Have the same or similar identifiable impacts, as determined by the City, each time the activity is repeated at all sites covered by the programmatic permit; and
 - c. Be suitable to having standard conditions that will apply to any and all sites.
3. Process.
 - a. For an activity that would otherwise be approved as a permitted activity subject to development standards, the Planning Official shall make the decision on the programmatic permit.
 - b. For an activity that would otherwise be approved as a public agency or public utility exception, the programmatic permit shall be reviewed pursuant to a Process I described in Chapter 145 KZC.
4. Required Conditions. The City shall uniformly apply conditions to each activity authorized under the programmatic permit at all locations covered by the permit. The City may require that the applicant develop and have uniformly applicable conditions as part of the programmatic permit application, subject to City approval. The City shall not issue a programmatic permit until applicable conditions are developed and approved by the City.
5. Inspections. Activities authorized under a programmatic permit shall be subject to inspection by the Planning Official pre-arranged in advance. The Planning Official may require that the applicant submit periodic status reports. The frequency, method and contents of the inspection notifications and reports shall be specified as conditions in the programmatic permit.
6. Revisions and Modifications to Permit. The Planning Official may subsequently require revisions, impose new conditions or otherwise modify the programmatic permit or withdraw the permit and

require that the applicant undergo review for a new permitted activity approval or new public agency and public utility exception, if the Planning Official determines that:

- a. The programmatic permit or activities authorized under the permit no longer comply with this chapter;
- b. The programmatic permit does not provide adequate regulation of the activity;
- c. The programmatic permit conditions or the manner in which the conditions are implemented are not adequate to protect against the impacts resulting from the activity; or
- d. A site requires site-specific regulation.

7. Other Agency Requirements. If an activity covered by a programmatic permit also requires other county, state and/or federal approvals, to the extent feasible, the City shall reference those conditions of other approvals in the programmatic permit.

90. WETLANDS

90. __ Wetlands and Associated Buffer Standards

Wetlands types and associated buffer standards are outlined below.

Table 90.__ - Wetlands and Associated Buffer Standards

Wetland Determination and Delineation	In accordance with the approved federal delineation manual and applicable regional supplements described in WAC 173-22-035. The Planning Official makes final determination.				
Wetland Rating	2014 Department of Ecology Washington State Wetland Rating System for Western Washington, as revised.				
Wetland Buffer Width Standard	Wetland Buffer Widths				
	Wetland Category	Buffer width based on habitat points			
		3-4 habitat pts.	5 habitat pts.	6-7 habitat pts.	8-9 habitat pts.
	Category I: Bogs and High Conservation Areas	190 feet	190 feet	190 feet	225 feet
	Category I: Others	75 feet	105 feet	165 feet	225 feet
	Category II	75 feet	105 feet	165 feet	225 feet
	Category III	60 feet	105 feet	165 feet	225 feet
Category IV	40 feet				
Structure Setback from Buffer	10 foot wide structure setback is required from upland edge of the entire buffer. Improvements listed in KZC 90.__ are permitted in the setback.				
Other Standards	<ul style="list-style-type: none"> • Increased buffer width may be required if wetland or its buffer contains or is adjacent to severe erosion area, habitat of certain species or frequently flooded area based on critical area report. See KZC 90.__. • All buffers must meet the vegetative buffer standards. See KZC 90.__. • Measures to minimize impact must be implemented. See KZC 90.__. • Buffer averaging is permitted for both the standard buffer and the alternative buffer if criteria are met. See KZC 90.__. • Fencing and signage are required along the entire upland edge of buffer both during construction and upon completion of the project. See KZC 90.__. • Wetlands and buffers shall be placed in recorded critical area easements or tracts for perpetual protection. See KZC 90.__. 				

	<ul style="list-style-type: none"> For mandatory restoration as a result of enforcement action, see KZC 90.____. For voluntary restoration, see KZC 90.____.
Alternative Buffer Standard	<ul style="list-style-type: none"> Applicant can choose to not meet the vegetative buffer standards and the mitigating measures by increasing the required buffer width by 33%.
Regulated Activities	<ul style="list-style-type: none"> Regulated activities and uses shall be prohibited within wetlands and associated buffers, except those exempted or permitted in KZC 90.____, __ and ____, or those approved under another City review process in this chapter.
Modification to Wetlands and Related Impacts to Buffers	<ul style="list-style-type: none"> Modification to a wetland requires a critical area permit pursuant to a Process I, Chapter 145 KZC, critical area report, mitigation sequencing, and compensatory mitigation plan. See KZC 90.____, __ and ____. Isolated Category IV wetlands less than 4,000 square feet and wetlands less than 1,000 square feet pursuant to KZC 90.____ are not required to meet mitigation sequencing, but mitigation is required. Buffer standard may not be modified or reduced, except as part of a wetland modification pursuant to a Process I, Chapter 145 KZC; or through buffer averaging or a waiver for an interrupted buffer approved by the Planning Official. See KZC 90.____ and ____. For Non-conformances, see KZC 90.____.

90.____ Wetland Category and Rating

1. Classification and Rating.

Wetlands shall be classified and rated according to the approved version of the Department of Ecology Washington State Wetland Rating System for Western Washington, as revised. The classifications are based on wetland categories referred to as Category I through Category IV.

2. Determination of Category and Rating. The category and rating shall be determined through a survey and field investigation by a qualified critical area professional approved by the City as part of a critical area determination process in KZC 90.____. The most current Washington State Department of Ecology rating system and procedures shall be used. Wetland rating categories shall not change due to illegal modification.

90.____ Wetland Determination

The Planning Official shall make the wetland determination if a wetland and/or a buffer exist on the subject property, and if so, its category, rating, boundaries and buffer width based on a required critical area report pursuant to KZC 90.____. In addition, the Planning Official shall determine whether the existing buffer vegetation meets the vegetative standards in KZC 90.____.

90. __ Wetland Modification

1. Modifications to Wetlands. Modifications to wetlands shall be prohibited, except as permitted as part of a wetland modification approved under this subsection or a reasonable use permit approved under KZC 90.____. The following modifications may be considered:
- a. Fill of a wetland
 - b. Removal and/or alternation of vegetation; and
 - c. Structures and improvements in a wetland.

2. Exception. The following limited types of wetlands are not required to meet mitigation sequencing pursuant KZC 90.___ and may be filled if the impacts are fully mitigated. The applicant shall submit a critical area report pursuant to KZC 90.___ verifying that the following criteria are met.

- a. Isolated Category IV wetlands less than 4,000 square feet that:
 - 1) Are not associated with streams or their buffers;
 - 2) Are not part of a wetland mosaic;
 - 3) Do not score 5 or more points for habitat function; and
 - 4) Do not contain designated federal or state species or their priority habitats or habitats and species of local importance identified in KZC 90.___.

The Planning Official may approve an application under this exception only if the applicant provides compensatory mitigation for both wetland and buffer loss pursuant to KZC 90.___. Impacts shall be mitigated through an in-lieu fee or mitigation bank program if a program is available pursuant to KZC 90.___.

It is the applicant's responsibility to insure compliance with meeting the U.S. Army Corps of Engineers' criteria for an isolated Category IV wetland.

- b. Wetlands less than 1,000 square feet that meet KZC 90.___ a. above are exempt from buffer requirements. The Planning Official may approve an application under this exception only if the applicant provides compensatory mitigation pursuant to KZC 90.___ for the wetland loss only but not the buffer loss.

3. Process. A modification to a wetland may be proposed through a critical area permit pursuant to a Process I, described in Chapter 145 KZC.

4. Decision Criteria. In addition to the criteria of a Process I, the Planning Director shall only approve a modification to a wetland and associated impact to the buffer along with the compensatory mitigation plan based on the wetland modification assessment, provided that:

- a. Mitigation sequencing requirements have been met. See KZC 90.___;
- b. Compensatory mitigation and mitigation plan requirements are approved. See KZC 90.___ and KZC 90.___;
- c. It will not adversely affect fish, wildlife, or their habitat, including habitat for endangered, threatened or sensitive species, or species of local significance. See KZC 90.___;
- d. It will not adversely affect water quality;
- e. It will not have an adverse effect on drainage and/or storm water detention capabilities either on-site or to the surrounding area;
- f. It will not lead to unstable geologic and soil conditions or create an erosion hazard;
- g. It will not have fill material that contains organic or inorganic material that would be detrimental to water quality or fish and wildlife habitat; and
- h. It will have all exposed areas stabilized with native vegetation normally associated with wetlands and/or buffers, as appropriate.

If the wetland modification is approved, the wetland compensatory mitigation plan, the additional requirements in subsections 7 and 8 below and any conditions of approval for the modification shall be made conditions of any land surface modification and/or building permit.

5. Appeals. Decisions on a wetland modification may be appealed pursuant to KZC 90.___.

6. Wetland Modification Assessment. As part of the application for a wetland modification, the applicant shall submit a wetland modification assessment and compensatory mitigation plan prepared by a qualified critical area professional approved by the City, and fund City review of this assessment. The assessment shall contain:
- a. The findings of the critical area report for the wetland determination and the City's critical area determination along with the survey of the wetland and/or the buffer on the subject property;
 - b. Description of the proposed modification to the wetland and impact to the buffer;
 - c. Analysis of mitigation sequencing for the proposal as required in KZC 90.____;
 - d. Evaluation of the effects of the proposed modification on the functions and values of the wetland and the buffer. The assessment shall look at impacts to water quality, storm water detention, erosion protection, functions of the wetland and wildlife habitat and frequently flooded areas and any other potential impact determined by the Planning Official;
 - e. A compensatory mitigation plan pursuant to KZC 90.____, including mitigation for lost or affected functions, type, location, and approach of compensation, timing of the mitigation, and a monitoring and maintenance plan as required in KZC 90.____ and KZC 90.____, and how the plan results in no net loss of wetland and buffer functions;
 - f. Assessment of the decisional criteria in subsection 4 above;
 - g. Any other information or studies determined necessary by the Planning Official.
7. Additional Requirements for Approved Wetland Modification.
- a. All work shall be carried out under the direct supervision of a qualified critical area professional approved by the City and paid for by the applicant during all phases of the project;
 - b. The requirements for fish and wildlife habitat conservation areas in KZC 90.____ and frequently flooded areas in KZC 90.____ shall be met;
 - c. If a proposed wetland modification will result in the creation or expansion of a wetland or its buffer on any property other than the subject property a statement signed by the owners of all affected properties, in a form approved by the City Attorney shall be submitted with the modification application and recorded in the King County Recorder's Office. The statement(s) shall consent to the critical area and/or buffer creation or increase on their property.
 - d. The mitigated wetland and buffer area shall be located in a recorded critical area tract or easement meeting the standards in KZC 90.____; and
 - e. Any required state and federal permits and authorizations shall be obtained prior to conducting site work.
8. Buffers for Mitigation Sites. The buffer for a wetland that is created, restored, or enhanced as on-site or off-site compensation within the city for an approved wetland modification shall be subject to the buffer of the highest wetland category applicable to the replaced wetland.
9. Compensatory Wetland Mitigation, See KZC 90.____ for requirements.

90. XX STREAMS

90. __Streams and Associated Buffer Standards

Stream classifications and associated buffers standards are outlined below.

Table 90. __Streams and Associated Buffer Standards

Stream Classification	In accordance with WAC 222-16-030, as amended. The Planning Official makes final determination.	
Stream Buffer Width Standard	Stream Buffer Widths	
	Stream Type	Buffer Width
	F (Fish bearing)	100 feet
	Np (Perennial non-fish bearing)	50 feet
	Ns (Seasonal non-fish bearing)	50 feet
Structure Setback from Buffer	10 foot wide structure setback is required from upland edge of the entire buffer. Improvements listed in KZC 90.__ are permitted within the setback.	
Other Standards	<ul style="list-style-type: none"> Increased buffer width may be required if the stream or its buffer contains or is adjacent to a severe erosion area, habitat of certain species or frequently flooded area based on critical area report. See KZC 90.__. All buffers must meet vegetative buffer standards. See KZC 90.__. Measures that minimize impacts must be implemented. See KZC 90 __. Buffer averaging is permitted if criteria are met. See KZC 90.__. The Planning Official makes decision. Fencing and signage are required along the entire upland edge of buffer both during construction and upon completion of a project. See KZC 90.__. For mandatory restoration as a result of enforcement action, see KZC 90.__. Voluntary restoration of streams and buffers or stream rehabilitation, see KZC 90.__. Streams and buffers shall be placed in recorded critical area easements or tracts for perpetual protection. See KZC 90.__. 	
Alternative Buffer Standard	<ul style="list-style-type: none"> Applicant can choose to not meet the vegetative buffer standards by increasing the standard buffer width by 33%. Buffer averaging is permitted if criteria found in KZC 90. __ are met and approved by the Planning Official. 	
Regulated Activities	<ul style="list-style-type: none"> Regulated activities shall be prohibited within streams and associated buffers, except those exempted or as permitted with development standards as found in KZC 90.__ and __, or those approved under another a City review process in this chapter. 	
Modifications to Stream and Related Impacts to Buffer	<ul style="list-style-type: none"> Modifications to stream and related impacts to buffers require a critical area permit pursuant to Process I, Chapter 145 KZC, a critical area report, mitigation sequencing and mitigation plan described in KZC 90.__ and __, and if criteria in KZC 90.__ are met. Stream modifications include stream crossing, relocation, channel stabilization and change in meandering course of a stream, and culverts. Daylighting of streams is encouraged. The Planning Official makes decision unless it is part of a critical area permit under a Process I. See KZC 90.__. Buffer standards may not be modified or reduced, except as part of a stream modification in KZC 90. __, pursuant to a Process I, or through buffer averaging, daylighting a stream and a waiver to an interrupted buffer all approved by the Planning Official. See KZC 90.__.nonconformances. 	

90. __ Stream Classification

Streams and watercourses shall be classified according to WAC 222-16-030, as amended. The classifications are as follows:

- Type F: Fish bearing
- Type Np: Perennial non-fish bearing
- Type Ns: Seasonal non-fish bearing

90. __ Stream Determination

The Planning Official shall make the determination if a stream and/or a buffer exist on the subject property, and if so, its classification and the boundary of the associated buffer based on a critical area report pursuant to KZC 90.__. In addition, the Planning Official shall determine whether the existing buffer vegetation meets the vegetative standards in KZC 90.__.

90. __ Stream Modifications

1. Stream Modification. The following stream modifications may be considered:
 - a. Stream crossings not permitted in KZC 90.__;
 - b. Culverts and bridges;
 - c. Change in meandering course of a stream to stop excessive erosion for the protection of buildings that cannot be achieved by stream stabilization; and
 - d. Relocation of a Type NS or NP stream.
2. Buffer Modification. A stream buffer may not be modified or otherwise reduced, except if part of an approved stream modification or as specified below:
 - a. Buffer averaging permitted pursuant to KZC 90.__;
 - b. Change to meandering course of a stream pursuant to KZC 90.__;
 - c. Daylighting of a stream pursuant to KZC 90.__; or
 - d. Interrupted buffer waiver permitted pursuant to KZC 90.__.
3. Process. A modification to a stream and the impacted buffer may be proposed through a critical area permit pursuant to Process I, described in Chapter 145 KZC.
4. Decision Criteria. In addition to criteria of Process I, the Planning Director shall only approve a modification to a stream and impact to the buffer along with the mitigation plan after considering the stream modification assessment for the proposed stream modification and the stream modification plan, provided that:
 - a. Mitigation sequencing requirements have been met. See KZC 90.__; and
 - b. The applicant has demonstrated where applicable, based on information provided by a civil engineer and a qualified critical area professional approved by the City, that:
 - 1) It will not have an adverse effect on drainage, storm water detention capabilities and base flood storage volume and function;
 - 2) No adverse effect water quality or frequently flood area will occur;
 - 3) No increase in velocity will occur upstream or downstream;
 - 4) No increase in sediment load will occur upstream or downstream;

- 5) Does not lead to unstable geologic and soil conditions and slope conditions or create an erosion hazard or contribute to scouring actions;
- 6) Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;
- 7) All exposed areas are stabilized with vegetation normally associated with native stream buffers, as appropriate;
- 8) It will not be detrimental to fish and wildlife habitat in KZC __, including fill material that contains organic or inorganic material;
- 9) Maximum amount of existing native trees and other native vegetation is retained;
- 10) For streams placed in culverts, fish passage will not be impaired and the Washington State Department of Fish and Wildlife's design criteria for road culverts for fish passage are met;
- 11) For change to create a meandering course for the stream, demonstrate that the change is the only feasible option to stop excessive erosion to protect buildings that cannot be achieved through streambank stabilization and will improve the overall functions and value of the stream;
- 12) For stream crossings, demonstrate that crossings shall have no adverse impact on in-stream habitat and flow conveyance;
- 13) For relocation of a Type Ns or Np stream, demonstrate that relocation would improve stream functions;
- 14) The stream modification plan is sufficient to mitigate identified impacts; and
- 15) A statement signed by each owner of all properties consenting to the modification if it results in creation or expansion of a stream or stream buffer on their properties.

If the stream modification is approved, the stream modification plan, the requirements of subsection 8 below, and any conditions of approval shall be made conditions of the land surface modification and/or building permit.

5. Appeals. Decisions on a stream modification may be appealed pursuant to KZC 90. __.
6. Stream Modification Assessment. As part of the application for a modification, the applicant shall submit a stream modification assessment prepared by a qualified critical area professional approved by the City, and fund the City's review of this assessment. The assessment shall contain:
 - a. The City's stream determination decision;
 - b. Findings of the critical area report for the classification of the stream if done as part of the report, vegetative buffer assessment, and a survey of the stream and its buffer;
 - c. Description of the proposed modification to the stream and impact to the buffer;
 - d. Analysis of mitigation sequencing in KZC 90. __;
 - e. Proposed mitigation as required in KZC 90. __;
 - f. Modeling of impacts to stream;
 - g. Evaluation of the effects of the proposed modification on the functions and values of the stream and the buffer, including on water quality and wildlife habitat;
 - h. Any change in stream bank erosion due to modification;
 - i. A stream modification plan as required in KZC 90. __;
 - j. Explanation of how the decisional criteria above in subsection 4 are met; and
 - k. Any other information or studies determined necessary by the Planning Official.

7. Stream Modification Plan. As part of the application for a modification, the applicant shall submit a stream modification plan prepared by a qualified critical area professional approved by the City. Also the applicant shall fund the City's peer review of this assessment. The plan shall contain:
- a. A topographic survey showing existing and proposed topography and improvements;
 - b. Schedule of the project for all work;
 - c. For a relocated stream channel and a new or replacement stream crossing or culvert, assessment that the stream channel, or crossing or culvert can accommodate flow and velocity of 100-year storm events;
 - d. Detailed vegetation plan for the stream channel if applicable and stream buffer vegetation meeting KZC 90.____. For changing the meandering of a stream course, see buffer reduction option in KZC 90.____;
 - e. Design for daylighting, changing the meandering course of the stream, relocating a stream or other modifications that achieves:
 - 1) Creation of natural meander patterns;
 - 2) Formation of gentle and stable side slopes, no steeper than two (2) feet horizontal to one (1) foot vertical, and the installation of both temporary and permanent erosion-control features (the use of native vegetation on stream banks shall be emphasized). The steepness of the slope of the stream may be modified given existing conditions;
 - 3) Native vegetation normally associated with streams, emphasizing native plants with high food and cover value for fish and wildlife and approved by the City;
 - 4) Restoration of water flow characteristics compatible with fish habitat areas;
 - f. Demonstration that flow and velocity of the stream after modification shall not be increased or decreased at the points where the stream enters and leaves the subject property, unless the change has been approved by the City to improve fish and wildlife habitat or to improve storm water management;
 - g. Written description of how the proposed modification of the stream will improve water quality, conveyance, fish and wildlife habitat, wetland recharge (if hydrologically connected to a wetland), and storm water detention capabilities of the stream;
 - h. Assessment of how the requirements for fish and wildlife habitat conservation areas in KZC 90.____ and frequently flooded areas in KZC 90.____ are met, if applicable;
 - i. Proposed protective measures that are needed, such as siltation prevention measures and scheduling the construction activity to avoid interference with wildlife and fisheries rearing, nesting or spawning activities;
 - j. Description of performance standards for post-installation, a monitoring and maintenance schedule based on the time period required in KZC 90.____ along with a financial security estimate for the entire compensatory mitigation project that meet the standards in KZC 90.____;
 - k. Address applicable requirements in subsection 8 below; and
 - l. List of all required state and federal permits and authorizations.
8. Additional Requirements for Stream Modification.
- a. All work shall be carried out under the direct supervision of a qualified critical area professional approved by the City and paid for by the applicant during all phases of the project;
 - b. Work must be done during the summer low flow and timed to avoid stream disturbance during periods when use of the stream is critical to fish consistent with the Department of Fish and Wildlife construction window; if applicable;
 - c. Prior to diverting water into a new stream channel for a relocated or daylighted stream:

- 1) A qualified critical area professional approved by the City shall inspect the completed new channel and issue a written report to the City stating that the new stream channel complies with the requirements of this section prior to diverting the stream;
- 2) Cost of the inspections shall be funded by the applicant.
- d. For stream crossings and culverts:
 - 1) Demonstrate that there is no other feasible alternative route for the crossing with less impact on the environment;
 - 2) Designed to meet Department of Fish and Wildlife standards;
 - 3) Crossings over Type 1 streams, only bridge structures, bottomless culverts or other appropriate methods shall be used that provide fisheries protection and fish passage;
 - 4) Crossing for all other streams, bridge or bottomless culvert is preferred over traditional pipe-style culvert. Where culverts are applicable, single barrels shall be used;
 - 5) Roads and associated crossings shall be perpendicular to the stream to the maximum extent feasible;
 - 6) Crossing and culverts shall be designed for free passage of water, wood and fish; and
 - 7) Record a perpetual maintenance agreement on a form approved by the City for continued maintenance of the stream crossing and culvert.
- e. If a proposed stream modification will result in the creation or expansion of a stream or its buffer on any property other than the subject property a statement signed by the owners of all affected properties, in a form approved by the City Attorney shall be submitted with the modification application and recorded in the King County Recorder's Office. The statement(s) shall consent to the critical area and/or buffer creation or increase on the other property;
- f. Streams and buffer areas shall be located in a recorded critical area tract or easement meeting the standards in KZC 90.____; and
- g. Any required state and federal permits and authorizations shall be obtained prior to conducting site work.

90. Daylighting of Streams

1. Daylighting. The City encourages opening up a stream that is located in a culvert to restore the stream to its prior condition. The purpose is to improve the values and function of the stream that include maintaining water quality, reducing storm and flooding water flow, and provide wildlife habitat.
2. Process. The Planning Official may approve removal of a stream from a culvert based on an approved critical areas report pursuant to KZC 90. ____ and an approved stream daylighting plan prepared by a qualified critical area professional approved by the City.
3. Stream Daylighting Plan. The plan shall include the following:
 - a. Detailed site plan of existing improvements and utilities in relationship to the daylighting, topography, daylighted stream course, hydrologic flow before and after daylighting and where the daylighted stream will connect once the culvert will be removed;
 - b. The requirements of the stream modification plan in KZC 90.____ where applicable as determined by the Planning Official and the additional stream modification requirements in KZC 90.____, as applicable;
 - c. Planting plan for the required stream buffer that meets KZC 90. ____, except as permitted to be reduced pursuant to KZC 90. ____;
 - d. List of all required state and federal permits and authorization, if applicable; and

- e. Any other information deemed necessary by the Planning Official.
4. Requirement to Daylight a Stream. The City may require a stream to be daylighted as part of a Process IIA pursuant to Chapter 150 KZC or IIB permit pursuant to Chapter 152 KZC if the required measure is proportionate to the scope and nature of the Process IIA or IIB permit.

90. ___ Buffer Reduction for Meandering or Daylighting of Stream

1. On-Site Buffer Reduction.

- a. A reduction to the required buffer standard may be approved as part of approval for:
 - 1) Changing the course to create a meandering stream if the modification improves in-stream habitat and flow conveyance; or
 - 2) Daylighting a stream;
- b. The buffer width reduction shall be the minimum necessary to accommodate existing improvements and/or site conditions; and
- c. For any reduction in the buffer, the required vegetative standards in KZC 90. ___ shall be increased proportionally to the extent feasible based on an appropriate planting density within the reduced buffer to mitigate the impact to the critical area.

2. Off-Site Buffer Waiver.

- a. The buffer standard requirements for adjacent properties shall not increase due to the deliberate change in the meandering course of the stream or daylighting of a stream. The City shall document the waiver to the required buffer standard in the City's permitting system for the adjacent properties due to the change in the critical area. The City will also record a document with King County Recorder Office at the request of any affected adjacent property owner; and
- b. There is no waiver to the existing buffer requirement prior to the change in the adjacent critical area.

90. ___ Stream Channel Stabilization.

- 1. When Permitted. Stream channel stabilization may be permitted if demonstrated to be necessary for:
 - a. Protecting existing legal structures and/or utilities that serve the structure(s), or public facilities or improvements, or unique natural resources determined by the City; where erosion results from the stream channel itself, rather than from unregulated stormwater flows to its banks; or
 - b. Providing the only feasible access to a property.
- 2. Stabilization Measures Options.
 - a. Avoidance measures are to be used before soft-bank stabilization or hard-bank stabilization measures that include vegetation enhancement, upland drainage control, protective walls or embankments placed outside of the stream and buffer.
 - b. Soft-bank stabilization measures may only be used if it is demonstrated that avoidance measures are not a feasible alternative due to site-specific soil, geologic, and/or hydrologic conditions, or location of existing primary structures, utilities or public facilities. These measures include bank enhancement, anchor trees, gravel placement, stepped back rockeries, vegetative plantings and similar measures that use natural materials engineered to preserve functions and values of the stream.
 - c. Hard-bank stabilization measures may only be used if it is demonstrated first that avoidance measures are not feasible and then that soft-bank measures are also not a feasible alternative due

to site-specific soil, geologic and/or hydrologic conditions. These measures include rock revetments, gabions, concrete groins, retaining walls, bulkheads and similar measures that present a vertical or nearly vertical interface with the water.

3. Process. Stream channel stabilization may be proposed pursuant to a Process I, described in Chapter 145 KZC.
4. Decision Criteria. In addition to criteria of Process I, the Planning Director shall only approve stream channel stabilization after considering the critical area report for the proposed stabilization and the stream channel stabilization plan, and if found that:
 - a. Findings of the critical area report of KZC 90 ___;
 - b. Mitigation sequencing found in KZC 90 __ has been met;
 - c. There is a demonstrated risk to legal primary structures and/or utilities due to erosion or slope failure and that stabilization is necessary to prevent damage to these improvements;
 - d. Stream channel stabilization plan will prevent stream bank erosion while minimizing impacts to the stream and the buffer; and
 - 1) For soft-bank stabilization and hard-bank measures, soft-bank measures must be used over avoidance measures, or that hard-bank measures must be used over soft-bank measures or avoidance measures based on the critical area report provided by a qualified critical area professional approved by the City;
 - 2) The ability of both permanent and temporary impacts to the stream can be mitigated.
 - e. There will be no adverse impact to water quality;
 - f. There will be no adverse impact to fish, wildlife, and their habitat;
 - g. There will be no increase in the velocity of stream flow, unless approved by the City to improve fish habitat;
 - h. There will be no decrease in flood storage volumes; and
 - i. The installation of the stabilization measure will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions.
5. Streambank Assessment. As part of the application for stream channel stabilization, the applicant shall submit a streambank assessment prepared by a qualified critical area professional approved by the City, and fund City's peer review of the assessment. The assessment shall contain:
 - a. Analysis of mitigation sequencing in KZC 90.____;
 - b. Analysis of proposed stream channel stabilization plan, why it is needed and the suitability of the stabilization proposed;
 - c. Level and extent of risk to a primary structure and/or utilities due to erosion or slope failure and the ability of the proposed measure to mitigate that risk;
 - d. Whether the level and extent of risk of damage from erosion is substantially more compared to the environmental impact of the proposed disturbance to the stream, including any continued impacts on functions and values over time;
 - e. Assessment of the proposed stream channel stabilization measure and how it is consistent with Washington Department of Fish and Wildlife's guidelines on streambank protection;
 - f. The ability of both permanent and temporary impacts to the stream and fish passage can be mitigated;
 - g. Explanation of how the decisional criteria above in subsection 4 above are met; and
 - h. Any other information or studies determined necessary by the Planning Official.

6. Stream Channel Stabilization Plan. The plan shall include the following:
- Detailed site plan of existing improvements and utilities in relationship to the stream, topography and soil conditions;
 - Proposed stabilization measure, including cross elevations, that is consistent with Washington Department of Fish and Wildlife's guidelines on streambank protection;
 - Timing of construction that avoids stream disturbance during periods when use of the stream is critical to resident or anadromous fish including salmonids; and
 - Work to be carried out under the direct supervision of a qualified critical area professional during all phases of the project.

90.XX MINOR LAKES - TOTEM LAKE AND FORBES LAKE

The majority, if not the entirety, of the perimeters of Totem Lake and Forbes Lake are wetlands. All activities in the shallow areas of the lakes relating to the wetland and their contiguous wetlands located above the high waterline are regulated pursuant to KZC 90.__ through 90.__.

Activities and uses waterward of the lakes' perimeter wetlands and outside of the wetland shall be regulated as follows:

- General Standards. As part of a permit or approval under this chapter, the City may require maintenance or rehabilitation of the lake in the vicinity of as part of improvement by removing material detrimental to the lake, such as inorganic debris, sediment, or non-native vegetation. Rehabilitation is required when a condition is detrimental to water quality or habitat.
- Moorage Facilities. Moorage facilities may be proposed to be constructed, expanded or replaced using the process and meeting the standards below.
 - Process. Moorage facilities may be proposed pursuant to a Process I, described in Chapter 145 KZC.
 - Decision Criteria. A new, expanded or replaced moorage structure may be approved if the standards in subsection c. below are met.
 - Standards.
 - Moorage structure shall not extend farther than 25 feet waterward of the high waterline;
 - Only one (1) moorage structure may be located on a subject property;
 - It is accessory to an allowed use on the subject property;
 - Moorage structure associated with a dwelling unit shall be for the exclusive use of the resident and guests of the associated dwelling unit. Structures shall not be leased, rented or sold;
 - Moorage structure shall not be treated with creosote or oil base or toxic substances;
 - Any existing in-water structures abandoned or in disrepair must be removed as part of a new permit;
 - Critical area report pursuant to KZC 90__ shall be prepared to assess impacts to wetlands and streams and any wildlife habitat area due to construction and use of the moorage structures. If any impacts are identified, a mitigation plan shall be prepared and implemented; and
 - For pedestrian access trails or boardwalks, see KZC 90.__.
- Repair of Moorage Facilities. Moorage facilities may be repaired as an exempted activity pursuant to KZC 90.__, but they may not be reconstructed or expanded under repair and maintenance.
- Viewing Platforms.

- a. Public viewing platforms in the lake associated with a public park may be approved by the Planning Official. The platform shall not be treated with creosote or oil base or toxic substances. If the platform would disturb a wetland for either construction or its location, a critical area report is required pursuant to KZC ____.
- b. Private viewing platforms are not permitted.

5. Public Park. Construction of a park shall be reviewed through a Park Master Plan process.

90.XX WILDLIFE HABITAT CONSERVATION AREAS

1. Location of Habitat Areas.

- a. Fish and wildlife habitat conservation areas can be found in wetlands, streams, large forested areas associated with critical areas, frequently flooded areas, and minor lakes.
- b. Fish habitat is protected through the provisions of KZC 90.____, Streams; therefore, further review of fish habitat under this section is not required.

2. Criteria. The habitat conservation areas are those that meet one or more of the following species and habitat criteria:

- a. State or federally designated endangered, threatened, and sensitive species that have a primary association with the habitat area.
- b. State priority habitats, and habitats with which State priority species have a primary association that are located in the City and thus are deemed to be Habitats and Species of Local Importance.

4. Determination of Habitat Conservation Area: Determination of a wildlife habitat conservation area will be made in the field by a qualified professional biologist approved by the City with experience preparing reports for the relevant type of habitat and based on the following maps and reports as part of a critical area report for a critical area determination in KZC 90.____.

- a. Department of Fish and Wildlife priority habitat and species maps;
- b. Federal and state information and maps related to species of concern; and
- c. Findings of the critical area report prepared by a qualified critical area professional approved by the City.

5. Modifications to Habitat Conservation Areas.

- a. Modification: Modification to habitat conservation areas may only be approved if the following requirements are met:
 - 1) Mitigation sequencing is followed under KZC 90.____ and a modification is determined to be necessary.
 - 2) A habitat management plan is prepared based on recommendations from the Washington State Department of Fish and Wildlife as part of a critical area report, prepared by a qualified professional biologist with experience preparing reports for the relevant type of habitat and approved by the City.
 - 3) The development standards in KZC 90.____ are met.
 - 4) Areas shall be protected through implementation of protection measures in accordance with a critical area report based on the management plan.
 - 5) The applicant shall fund the cost of the management plan, the critical area report and implementation of the management plan, including monitoring and maintenance.
 - 6) The management plan shall be implemented through the life of the use or activity.

- b. Process: Modification to habitat conservation areas shall be approved as part of a related permit or approval under this chapter.
6. General Standards for Habitat Conservation Areas. Activities and uses located in, and in some cases adjacent, to wildlife habitat conservation areas shall meet the following standards:
- a. Minimize or mitigate any potential adverse impacts based on best available science, including:
 - 1) Preservation of critically important vegetation and/or habitat features, such as vegetation, large trees, snags and downed wood;
 - 2) Limitation of access to the habitat area, including fencing to deter unauthorized access;
 - 3) Seasonal restriction of construction activities as determined by the Washington State Department of Fish and Wildlife;
 - 4) Establishment of a duration and timetable for periodic review of mitigation activities; and
 - 5) Requirement of a performance bond, when necessary, to ensure completion and success of proposed mitigation.
 - b. The introduction of any plant or wildlife not indigenous to the region shall be prohibited unless authorized by a state or federal permit or approval.
 - c. See KZC 90.___ for pesticide and herbicide use.
7. Buffer Standards for Habitat Conservation Areas. The City may require the establishment of buffer areas for activities and uses adjacent to habitat conservation areas to protect the habitat if indicated to be needed based on a critical area report.
- a. Required buffer widths shall reflect the sensitivity of the habitat and the type and intensity of activity proposed to be conducted nearby, and shall be consistent with the management recommendations issued by the Washington Department of Fish and Wildlife and U.S Department of Fish and Wildlife;
 - b. The City may require the buffer standards for wetland in KZC 90.___ or for stream in KZC 90.___ to be increased if needed to protect the habitat conservation areas. See KZC 90.___; and
 - c. Buffers shall consist of an undisturbed area of native vegetation or areas identified in a management plan for restoration to protect the integrity, functions, and values of the affected habitat.
8. Habitat Conservation Area Assessment. In addition to the critical area report requirements of KZC 90.___, the following information shall be provided:
- a. Evaluation. Evaluation of the presence or absence of potential wildlife habitat on the subject property or within the vicinity. A habitat assessment shall include the following information:
 - 1) Extent of wildlife habitat areas and required buffers or management areas based on the species;
 - 2) Existing habitat area acreage;
 - 3) Vegetative, faunal, and hydrologic characteristics;
 - 4) Identification of priority species, or endangered, threatened or sensitive species that have a primary association with habitat on or adjacent to the project area;
 - 5) Evaluation of potential project impacts to the use of the subject property by the species;
 - 6) A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the project area; and
 - 7) A detailed discussion of the direct and indirect potential impacts on habitat by the project, including potential impacts to water quality.

- b. Proposed Mitigation. If required, a mitigation plan consistent with KZC 90. __ and KZC 90. __. The mitigation plan shall include a written assessment and accompanying maps of the mitigation area, including the following information at a minimum:
- 1) Prohibition or limitation of development activities within the wildlife habitat conservation area;
 - 2) Establishment of a buffer around the wildlife habitat conservation area, if needed;
 - 3) Retention of certain vegetation or areas of vegetation critically important to the listed species;
 - 4) Limitation of access to the wildlife habitat conservation area and buffer, if applicable;
 - 5) Seasonal restrictions on construction activities on the subject property;
 - 6) Clustering of development on the subject property as permitted under this code; and
 - 7) Preservation or creation of a habitat area for the listed species.
- c. Habitat Management. When appropriate due to the type of habitat or species present or the project area conditions, the City may also require a habitat management plan to include:
- 1) A discussion of ongoing management practices that will protect habitat after the project site has been developed, including proposed monitoring and maintenance programs; and
 - 2) Consultation with the Washington State Department of Fish and Wildlife, affected tribes or other appropriate agency regarding the effectiveness of any proposed mitigating measures or programs, as appropriate.

9. Mitigation - Wildlife Habitat Conservation Areas.

- a. General. Mitigation for modification to habitat conservation areas shall achieve equivalent or greater biologic functions based on best available science and shall include mitigation for adverse impacts upstream or downstream of the development proposal site as appropriate or within the entire wetland.
- b. Restoration. Restoration shall be required as part of a development proposal or as required in an enforcement action pursuant to KZC 90. __ where impacts, either direct or indirect, to the habitat conservation area occur.
- c. Mitigation Plan. A mitigation plan shall be included as part of the critical area report, shall demonstrate that:
- 1) Habitat conservation area will not be further degraded by the restoration or mitigation activity;
 - 2) Mitigation will reliably improve wildlife habitat;
 - 3) Mitigation will result in no net loss and no significant adverse impact will occur to habitat functions; and
 - 4) On sites where nonnative vegetation was cleared, restoration shall include installation of native vegetation with a density equal to or greater than vegetative buffer standards in KZC 90. __ as guideline.
- d. Monitoring and Maintenance. Mitigation sites shall be monitored and maintained consistent with KZC 90. __.

10. Designation of Habitats or Species of Local Importance.

The City may designate additional habitat or species of local importance as an amendment to this chapter through a Process IV pursuant to Chapter 160 KZC.

90. XX FREQUENTLY FLOODED AREAS

No disturbance or, land surface modification may take place and no improvements or activities may be located in frequently flooded areas that are areas of special flood hazard, except as specifically provided

for in Chapter 21.56 KMC, Flood Damage Prevention. See Federal Emergency Management Agency (FEMA) for flood maps.

90.XX GENERAL STANDARDS

90.XX Buffer Averaging

1. Applicability. Buffer averaging may be applied to wetlands and stream buffers for both the standards and alternative buffers. An applicant who chooses to implement the alternative buffer standard pursuant to KZC.90__ may use buffer averaging.
2. Standards. Averaging of buffer widths may only be allowed if all of the following criteria, based on best available science, are met as demonstrated in a critical areas report:
 - a. The buffer width is not reduced below 75% of the required width in any location;
 - b. The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer and must be contiguous;
 - c. It will provide additional protection to the critical area and result in a net improvement of the critical area habitat, functions, and values; and
 - d. The critical area contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation, and the wetland or stream would benefit from a wider buffer in places and would not be adversely impacted by a narrower buffer in other places.
2. Process. The Planning Official makes the decision based on the critical areas report described in KZC 90.__.

90.XX Limited Buffer Modifications and Waivers

1. Limited Buffer Modifications. Buffers may not be modified or otherwise reduced, except as specified below. The modifications apply to both wetland and stream buffers.
 - a. As part of an approved wetland or stream modification pursuant to KZC 90.__ and KZC 90.__, the buffer edge shall be modified relative to the new edge of the modified critical area;
 - b. Buffer averaging permitted pursuant to KZC 90.__;
 - c. Daylighting of a stream pursuant to KZC 90.__;
 - d. Changing the meandering course of a stream pursuant to KZC 90.__; or
 - e. Interrupted buffer waiver pursuant to subsection 2 below.
2. Interrupted Buffer Waiver.
 - a. Where a legally established and improved public right-of-way, improved easement road or driveway, or existing building interrupts a portion of the critical area buffer from the portion of the buffer adjacent to the critical area, the Planning Official may waive the required critical area buffer in that portion of the buffer isolated from the critical area.
 - b. The Planning Official may waive the buffer requirement if the waiver request is found to meet the following criteria (see Plate __):
 - a. The existing improvements create a substantial barrier to the buffer functions that would benefit the critical area; and

- b. The interrupted buffer does not provide additional protection of the critical area from the proposed development; and
 - c. The interrupted buffer does not provide any significant biological or hydrological buffer functions relating to the portion of the buffer adjacent to the critical area.
- c. The Planning Official may require a critical area report pursuant to KZC 90.____ when professional expertise in critical areas is needed to make the determination.

90.XX Increase in Buffer Width Standard

1. Criteria to Require Increase in Buffer Width. The City shall determine if a buffer must be increased beyond the standards in this chapter based on best available science and the recommendation of a critical area report for a project. The increase in buffer width may be required when a larger buffer is necessary to protect critical area functions and values either on the subject property or on an adjacent property. This determination shall be based on one or more of the following criteria:
 - a. Severe Erosion Areas. If the critical area buffer abuts land that contains a slope with severe erosion, has minimal vegetative cover and is designated as hazardous in Chapter 85. KZC, and erosion control measures will not effectively prevent adverse impacts on the critical area based on a geotechnical study, a larger buffer shall be required.
 - b. Fish and Wildlife Habitat Conservation Areas. If the wetland or stream contains documented habitat for endangered, threatened, priority species or species of local importance, a larger buffer may be required to protect the habitat consistent with the management recommendations issued by the Washington Department of Fish and Wildlife or the United States Department of Fish and Wildlife; or
 - c. Frequently Flooded Areas. If a site contains a frequently flooded area and the frequently flooded area is wider than the buffer standard required for a wetland or stream, the buffer shall be increased to incorporate the entire frequently flooded area.
2. Process. The Planning Official shall make a determination if a buffer width must be increased beyond the standard buffer width based on a critical area report as part of the critical area determination in KZC 90.____.

90.XX Vegetative Buffer Standards

1. Vegetative Buffer Standard. A wetland or stream shall have a buffer that meets the standards in this subsection. The entire buffer shall meet the standard.
 - a. Native cover of at least 80% on average throughout the buffer area with two out of three of the following strata of native plant species composing of at least 20% areal cover:
 - 1) Multi-age forest canopy (combination of existing and new vegetation);
 - 2) Shrubs; and
 - 3) Woody groundcover (such as kinickinick, salal and sword fern) or unmowed herbaceous groundcover;
 - b. At least three native species each making up a minimum of 10% coverage (for diversity);
 - c. Less than 10% noxious weeds cover using King County weed list (but require removal of knotweed which is very invasive); and

- d. Removal of lawn (source of fertilizers, fecal coliform from pets and herbicides detrimental to wetlands and streams) and any illegal fill as determined by the City.

2. Additional Vegetative Standards.

- a. Existing healthy native vegetation may count towards meeting the requirements if the overall standard is met;
- b. The City may require amended soil if needed to provide a well-functioning buffer;
- c. The City may require supplemental mulch to meet the Planning and Building Department standards;
- d. Any existing improvements or structures in a buffer must be removed prior to revegetating the buffer;
- e. Temporary irrigating source must be available while the vegetation is being established and the source must be indicated on the planting plan;
- f. Installation shall be done by hand unless use of mechanical equipment is specifically authorized due to site conditions. By hand includes any hand held equipment that is either gas or electric powered; and
- g. Buffers shall not be mowed and animals may not be used to remove weeds;

3. Process. The Planning Official shall determine whether an existing buffer meets the standards in KZC 90.____ as part of the critical area determination based on information provided and reviewed in the critical area report.

4. When Vegetative Standard Applies.

- a. The required vegetative buffer standard shall be installed within the entire buffer for all new or expanded structures that require a building permit.
- b. Exceptions:
 - 1) New or expanded structures totaling less than 1,000 square feet in footprint on the subject property are not required to vegetate the entire buffer, but a portion of the buffer as follows:
 - a) The buffer shall be vegetated at a 1:1 ratio meeting the vegetated buffer standard at a proportional rate;
 - b) The vegetated buffer area shall be located abutting the critical area at a depth of 10 feet;
 - c) The location of the vegetation in the buffer abutting the critical area shall be nearest to and across from the new structure footprint and approved by the Planning Official; and
 - d) New or expanded structures on the subject property totally less than 50 square feet in footprint are exempt from vegetating the buffer.

5. Vegetative Buffer Plan. When a buffer does not meet the standards in KZC 90.____, a vegetative buffer restoration plan shall be submitted for approval as follows:

- a. For a permit or approval under this chapter that does not require a critical area modification pursuant KZC 90.____, KZC 90.____ or KZC 90.____:
 - 1) A vegetative buffer plan shall be submitted as part of a building permit or before commencement of an activity approved under this chapter that does not require a building permit;
 - 2) The vegetative buffer plan shall be prepared by a qualified critical area professional;
 - 3) The applicant shall submit funds to the City for peer review of the vegetative buffer plan; and
 - 4) The Planning Official shall approve the plan only if it meets the vegetative buffer standard in this section.

- b. For a permit or approval under this chapter that requires a critical area modification pursuant KZC 90.____ or KZC 90.____:
 - 1) A vegetative buffer plan shall be submitted as part of the required mitigation plan pursuant to KZC 90.____, KZC 90.____ and KZC 90.____;
 - 2) The vegetative buffer plan shall be prepared by a qualified critical area professional and the applicant shall submit funds to the City for peer review of the vegetative buffer plan;
 - 3) The vegetative buffer plan shall be approved as part of the Planning Official permit or Process I permit under this chapter, and then subsequently submitted as part of the building permit application or before commencement of the activity if a building permit is not required; and
 - 4) Any changes to the approved vegetative buffer plan must be approved by the Planning Official and may require review by the City’s consultant at the applicant’s expense.

5. Maintenance, Monitoring and Financial Security. Maintenance and monitoring plan and a financial security for the vegetative buffer shall be submitted prior to issuance of a building permit or before commencement of an activity pursuant to KZC 90.____ and KZC 90.____.

6. Protection of Vegetative Buffer. Buffers shall be placed in recorded critical area easements or tracts pursuant to KZC 90.____ and shall be maintained in perpetuity.

90.XX Trees in Critical Areas or Critical Area Buffer

- 1. Removal of Trees.
 - a. Only a nuisance or hazardous tree may be removed in a critical area or its buffer and only if approved in advance by the City unless tree removal is an emergency to prevent immediate damage to a structure. In case of an emergency, documentation to the City must be provided within seven days of removal that supports that the tree was a nuisance or hazardous.
 - b. If a tree in a critical area or its buffer meets the criteria of a nuisance or hazard based on this code at the determination of the Planning Official, then a snag tree shall be created;
 - c. If creation of a snag is not feasible, then the felled tree shall be left in place unless the Planning Official approves tree removal in writing; and
 - d. Any tree approved to be removed or created as a snag or felled must be replaced with one (1) native tree at a minimum height of (6) feet approved by the Planning Official.
- 2. Pruning of Trees. Pruning or topping of trees in critical areas or buffers is prohibited other than City approved creation of snags or felling of a tree for nuisance or hazard trees.

90.XX Structure Setback from Critical Area Buffer

Buildings and other structures shall be set back at least ten (10) feet from the edge of the wetland or stream buffer to ensure adequate width for construction staging, and maintenance and repair of primary buildings and accessory structures without disturbing the critical area buffer or critical area. This section does not apply to wetlands that are less than 1,000 square feet which do not have a buffer requirement and thus no building setback requirement.

The following improvements may extend into the structure setback, provided that they do not necessitate encroachment into the critical area buffer for maintenance.

Structure Setback	Improvement	Location within Setback:
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Ten (10) feet in width from edge of buffer	Chimneys, bay windows, greenhouse windows, eaves, cornices, awnings and canopies, and decks above the ground floor;	May extend no more than 18" into structure setback
	Uncovered improvements less than 18" above finished grade and railings less than four feet above finished grade;	May extend no more than five (5) feet into structure setback
	Uncovered play structures;	
	Rockeries and retaining walls that are not more than four feet above finished grade;	
	Uncovered improvements less than 4" above finished grade benches, walkways, paths and pedestrian bridges;	May extend no more than nine (9) feet into structure setback
	Garden sculpture, light fixtures, trellises and similar decorative structures;	
	Driveways and parking areas; including curbing	
	Stormwater conveyance that results in sheet flow such as rain gardens, and similar techniques;	
	Non-native landscaping	
	Solid wood or rail fence made of wood or metal perpendicular to the building setback at up to 6 feet in height above grade.	May extend to the critical area buffer
	Wood or metal rail fence parallel to the buffer at a height of 3 to 4 foot.	Along the edge of the buffer

90.XX ___ Critical Area Determination

1. Initial Determination. Either prior to or during review of a development application, the Planning Official shall make an initial assessment based on a site inspection and other information as to whether:
 - a. For wetlands, any portion of the subject property or surrounding area within 250 feet of the subject property meets the definition of a wetland. If this initial site inspection does not indicate the presence of a wetland on the subject property or within 250 feet of the subject property, no additional wetland assessment will be required.
 - b. A stream is present on any portion of the subject property or surrounding area within 125 feet of the subject property. If the site inspection does not indicate a stream on or within 125 feet of the subject property, no additional action will be required.
 - c. If the initial determination indicates that a wetland exists or may exist on the subject property or within 250 feet of the subject property and/or a stream exists on the subject property or within 125 feet of the subject property and/or, then the applicant shall have a critical area report prepared pursuant to KZC 90. ___ either by:

- 1) Funding a report prepared by the City or the City's consultant; or
 - 2) Submitting a report prepared by a qualified critical area professional approved by the City. In addition, fund peer review by City or the City's consultant of the critical area report.
- d. If the Planning Official is not able to determine the classification of a stream or is uncertain if a watercourse is classified as a stream, a critical area report shall include a recommendation on a stream determination if the site does contain a stream and if so, its classification. The Planning Official shall make the final determination based on the critical area report. If the critical area report determines that no stream exists in the subject property, no further action is need.
2. **Final Determination.** The Planning Official shall make a final determination based on a critical area and the supplemental critical area assessment. The determination shall be for any development permit application or other request for permission to proceed that would modify a site that includes a critical area or associated buffer, other than those exempted KZC 90.___. As part of the critical area determination, the Planning Official shall:
- a. Determine whether a critical area exists or likely exists on the property, and if so, require a critical area report.
 - b. If a critical area exists on the property, determine:
 - 1) The critical area boundaries, wetland category and rating and/or stream classification;
 - 2) The buffer width standards and location of the buffer for the critical area;
 - 3) Whether the required buffer meets the vegetative standards found in KZC 90.___. If not, what revisions need to be made to the buffer;
 - 4) Whether the subject property contains or is within the vicinity of a known habitat for species that are federally or state listed or of local importance pursuant to KZC 90. ___. If so, require and review a habitat management plan to determine necessary implementation actions;
 - 5) Whether the standard buffer width must be increased pursuant to KZC 90.___;
 - 6) Whether the development proposal is consistent with this chapter; and
 - 7) Whether any proposed modification to the critical area is necessary.
3. **Development Review.** The Planning Official's final determination under this chapter shall be used for review of any development permit or activity proposed on the subject property.
4. **Validity of Determination.** The critical area determination is valid for five (5) years from the date of the decision. However, the Planning Official may modify the final critical area determination whenever physical circumstances have markedly and demonstrably changed on the subject property or within 250 feet of the subject property for wetlands and 125 feet for streams as a result of natural processes or human activity.

90.XX __ Critical Area Report

1. **General.** An application for a development permit that includes a critical area and/or its buffer, except those exempted pursuant to KZC 90.___, shall provide a critical area report that uses the best available science to evaluate the proposal and all probable impacts and include the required supplemental wetland or stream critical area assessment pursuant to KZC 90.___ and KZC 90.___.
2. **Waiver.** The Planning Official may waive requiring specific information for the report if it is determined that:
 - a. The information is not needed to evaluate a critical area or requirement of this chapter.

- b. If the development proposal will affect only a part of the subject property, the Planning Official may limit the scope of the required report to include only that part of the site that would be affected by the development.
3. Report Format. The critical area report shall be in the form of a written document provided in electronic form. The City may establish specific administrative requirements for the format of the report.
4. Report Content – General. A critical area report shall evaluate the subject property and critical areas within 250 feet of the subject property for wetlands and 125 feet for known streams. A critical area report shall include the following information:
 - a. The name and contact information of the applicant; the name, qualifications, and contact information from the primary author(s) of the report; identification of all the local, state, and /or federal critical area related permit(s) required for the project; and a vicinity map for the project;
 - b. A statement specifying the accuracy of the report and all assumptions made and relied upon;
 - c. Documentation of any fieldwork performed on the site, including field data sheets for wetland delineation and rating system forms, stream classification, baseline hydrologic data;
 - d. A description of the methodologies used to conduct the wetland delineations and rating system forms, stream classification if done as part of the critical area report, and impact analyses including references;
 - e. Identification, characterization and boundaries of all critical area, and buffers on or adjacent to the subject property. For areas off site of the subject property, estimate conditions within 250 feet of the subject property boundaries for a wetland and 125 feet of a stream using the best available information;
 - f. A site plan of the project area, drawn to scale, with existing improvements and site features;
 - g. Project narrative describing the proposal; anticipated temporary and permanent impacts to critical area or its buffer and a survey, construction activities and sequencing of construction, and other relevant information;
 - h. A description of existing native, ornamental or invasive vegetation, fauna, and hydrologic characteristics found in the critical area and its buffer both on-site and on adjacent properties;
 - i. Assessment of existing vegetation in the required buffer and whether it meets the vegetative buffer standards found in KZC 90.___. If the vegetation in the buffer does not meet the vegetative standards, submit a detailed re-vegetation plan meeting KZC 90.___;
 - j. Assessment of any habitat for species that are federally or state listed or for species of local importance pursuant to KZC 90. ___ on the subject property or in the vicinity. Include a management plan for any habitat that meets KZC 90. ___ to address methods to protect and enhance on-site habitat and critical area functions;
 - k. When impacts are proposed to the critical area, the requirements of mitigation sequencing pursuant to KZC 90.___ must be met;
 - l. When impacts are proposed to the critical area, an assessment of mitigation and/or restoration plan meeting KZC 90.___ and monitoring and maintenance plan meeting KZC 90.___. Mitigation shall be designed to achieve no net loss of ecological function consistent with mitigation sequencing in KZC 90.___ for critical areas and compensatory mitigation for wetlands in KZC 90.___;
 - m. A professional survey as specified in KZC 90.___; and
 - n. Any other information deemed necessary by the Planning Official.
5. Report Content – Wetlands. In addition to the requirements for the General Report Content pursuant to KZC 90.___, the critical area report shall include:

- a. Identification of wetlands and delineation of their boundaries shall be in accordance with the current approved federal delineation manual and applicable regional supplements described in WAC 173-22-035, as amended. All determinations and delineations of wetlands shall be based on the entire extent of the wetland, irrespective of property lines, ownership patterns, existing improvements or features;
 - b. Wetland rating and category including the rationale for the proposed rating and the required buffer based on the regulations in this code;
 - c. Wetland rating form and all required figures;
 - d. Existing wetland acreage which may be approximated if the wetland extends onto adjacent properties;
 - e. Soil and substrate conditions;
 - f. A description of historical hydrologic, vegetative, habitat, topographic, and soil modifications, if any;
 - g. Description of the water sources entering and leaving the wetland and documentation of hydrologic regime (locations of inlet and outlet features, water depths throughout the wetland, evidence of recharge or discharge, evidence of water depths throughout the year – drift lines, algal layers, water marks, and sediment deposits); and
 - h. A completed Department of Ecology Wetland Field Data Form.
6. Report Content – Stream. In addition to the requirements for the General Report Content pursuant to KZC 90.__, the critical area report shall include the stream classification and rationale, based on WAC 222-16-030, as amended; if the Planning Official is unable to make an initial determination.
7. Professional Survey and Measuring Buffer Boundary.
- a. The survey shall be based on the King County Datum (NAVD 88 vertical, NAD 83/91 horizontal) and shall indicate the temporary or permanent benchmark used in the survey depicting:
 - 1) The wetland boundary on the subject property and an estimation for area within 250 of the subject property and its buffer, based on the determined wetland category and rating, and the buffer standards in this chapter; and/or
 - 2) The ordinary high water mark (OHWM) of any stream or the opening of a pipe where any stream enters or exits a pipe on the subject property or estimated within 125 feet of the subject property and its buffer based on the determined classification and the buffer standards in this chapter.
 - b. For wetlands, buffer widths shall be measured along the outer edge of the entire wetland.
 - c. For streams, buffer widths shall be measured outward in each direction on the horizontal plane from the OHWM or from the top of the bank if the OHWM cannot be identified. Where a stream enters or exits a pipe, the buffer shall be measured in all directions from the pipe opening (see Plates __ of Chapter 180 KZC).
8. Site and Construction Plans. For a site proposed to be developed, plans showing the following:
- a. Site plan-view cross-sectional drawings;

- b. Slope gradients, and existing and final grade elevations at two-foot intervals;
- c. Type and extent of all critical areas, and buffers on or adjacent to the subject property within 250 feet of any wetland and 125 feet of any stream;
- d. Location of springs, steeps, surface water runoff features, or other surface expressions of groundwater on or within 250 feet of a wetland and 125 feet of a stream of the subject property;
- e. Proposed development, including the location of existing and proposed structures, fill, grading clearing limits with dimensions indicating distances to the critical area, areas of proposed impacts to the critical areas and/or buffers (include square footage estimates), and storage of construction materials and equipment if available;
- f. A depiction of the proposed stormwater management facility and outlets for the project, including estimated areas of permanent and temporary intrusion into the critical area buffer;
- g. Other drawings to demonstrate construction techniques; and
- h. Any other information deemed necessary by the Planning Official.

90.XX Mitigation - General

1. General. If a modification is proposed to a critical area or buffer, the proposal must first be evaluated using mitigation sequencing.
2. Mitigation Sequencing. The intent of mitigation sequencing is evaluate and implement opportunities to avoid, minimize, eliminate or compensate for impacts to critical areas while still meeting the objectives of the project. When a modification to a critical area and buffer is proposed, the modification shall be avoided, minimized, or compensated for, as outlined by WAC 197-11-768, in the following order of preference:
 - a. Avoiding the impact altogether by not taking a certain action or parts of actions;
 - b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
 - c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
 - d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
 - e. Compensating for the impact by replacing or providing substitute resources or environments; and/or
 - f. Monitoring the impacts and compensation projects and taking appropriate corrective measures.
3. Responsible Party

Mitigation for lost or diminished critical area functions and values for either wetlands or streams shall use the following options:

- a. Third Party Responsible Mitigation – Mitigation Bank and In-lieu Fee Mitigation.
 - 1) Funds are collected from the applicant by the sponsoring agency, non-profit, private party or jurisdiction. The sponsor is responsible from that point forward for the completion and success of the mitigation. The applicant's fee is based on the project impact and includes all costs for the mitigation, including design, land acquisition, materials, construction, administration, monitoring, and stewardship.

- 2) Credits purchased by an applicant from a mitigation bank that is certified under State rules may be used at the discretion of the City to compensate for impacts when all of the following apply:
 - a) The City determines as part of the critical area permit that it would provide appropriate compensation for the proposed impacts;
 - b) Projects shall have debits associated with the proposed impacts calculated by the applicant's qualified critical area professional using the credit assessment method or appropriate method for the impact specified in the approved instrument for the program. The assessment shall be reviewed and approved by the City;
 - c) The proposed use of credits is consistent with the terms and conditions of the certified mitigation bank instrument; and
 - d) The statement of sale and a record of payment shall be provided to the City in advance of the authorized impacts.

- b. Applicant-Responsible Mitigation - The applicant is responsible for the implementation, monitoring and success of the mitigation pursuant to this Chapter.

4. Location of Mitigation.

- c. Preference. Preference shall be given to the location of the mitigation in the following order unless it can be demonstrated through a Wetland Compensatory Mitigation Plan that off-site in-kind mitigation is ecologically preferable:
 - 1) On-site in-kind
 - 2) Off-site in City in-kind
 - 3) Off-site within the Lake Washington/Cedar/Sammamish Watershed in-kind
- d. Off-Site Mitigation.
 - 1) When considering mitigation outside of the City, preference should be given to using alternative mitigation, such as a mitigation bank, or an in-lieu-fee program.
 - 2) Mitigation shall occur on-site except when:
 - a) There is no opportunity for on-site mitigation or on-site opportunities do not have a high likelihood of success due to development pressures, adjacent land uses, wildlife impacts, or on-site buffers or connectivity are inadequate;
 - b) Off-site mitigation has a greater likelihood of providing equal or improved critical area functions than the impacted critical area;
 - c) Off-site locations shall be in the same Water Resource Inventory (WRIA) 8 Lake Washington/Cedar/Sammamish Watershed as the impacted critical area; and
 - d) The off-site critical area mitigation will best meet formally established watershed goals for water quality, flood or conveyance, habitat, or other wetland functions have been established and strongly justify location of mitigation at another site.

5. Timing of Mitigation.

- a. On-Site Mitigation. For on-site mitigation, mitigation shall be completed immediately before or following disturbance and prior to use or occupancy or final inspection of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing fisheries, wildlife and flora. The Planning Official may allow flexibility with respect to seasonal timing of excavation or planting.

- b. Off-Site Mitigation. Documentation of the statement of sale and a record of payment shall be provided to the City in advance of the authorized impacts but no later than with the building permit.
 - c. Advance Mitigation. At the discretion of the City, mitigation for public agencies projects with impacts to critical areas or their buffers may be constructed in advance of the impacts if the mitigation is implemented according to federal rules, State policy on advance mitigation, and State water quality regulations.
6. General Mitigation Plan Standards.
- a. A mitigation plan shall be prepared by a qualified critical area professional, approved by the City that:
 - 1) Addresses the impacts to a critical area and buffer based on best available science; and
 - 2) Is designed to maintain and enhance ecological functions and values, and to prevent risk from hazards posed by the critical area;
 - b. The plan shall show how it meets the vegetative buffer standards and requirements in KZC 90.____ along with details on the size and type of each species of plants, number and spacing of the plants;
 - c. Stream buffer mitigation shall be at a ratio of 1:1;
 - d. Wetland and buffer mitigation shall meet the standards for Wetland Compensation Mitigation pursuant to KZC 90.____;
 - e. Plant materials must be native and suitable for Kirkland's conditions using the City of Kirkland Native Plant List, King County Native Plant List and other sources as a guide. Seed source must be as local as possible, and plants must be nursery propagated unless transplanted from on-site areas approved for disturbance. These requirements must be included in the mitigation plan specifications;
 - f. Plant materials may be supported with material (e.g. stakes, guy wires) only when necessary. Staking and ties shall be per International Society of Arboriculture standards. Where support is necessary, stakes, guy wires, or other measures must be removed as soon as the plant can support itself, usually after the first growing season;
 - g. Proposed erosion control measures shall be provided that meet the City's Surface Water Management regulations;
 - h. Mitigation shall be consistent with other requirements in this code, including site distance requirements at intersection pursuant to KZC 115.135.
 - i. Unless the site is not served by public or private water sources, all planted areas of mitigation projects shall have a temporary, above ground sprinkler system set to automatic timers. Temporary sprinkler systems shall be removed in the final year of monitoring once vegetation is well-established. When public or private water is not available, watering by truck or hand may be necessary.
7. Implementation of Mitigation Plan.
- a. Unless otherwise approved by the City, mitigation shall be:
 - 1) Installed prior to or with a building permit, depending on the measures, so that it is completed prior to final inspection, occupancy or commencement of the activity;
 - 2) Inspected and approved by the Planning Official prior to occupancy of a building or commencement of an activity approved under this chapter. The installation shall conform to the approved mitigation plans and permit approval.

- b. An as-built plan shall be provided to the City prior to inspection by the City.
- c. For mitigation approved using off-site mitigation pursuant to KZC 90.____, the applicant shall provide a copy of the executed agreement and proof of payment prior to issuance of a land surface modification or building permit. For advanced mitigation program pursuant to KZC 90.____, the applicant shall submit documentation of completion of the advance mitigation prior to issuance of a grading or building permit.
- d. For on-site mitigation to be completed after occupancy of a building or commencement of an activity, a performance financial security is required pursuant to KZC 90.____ along with a timeline commitment for completion.

90.____ Compensatory Wetland Mitigation

1. Compensatory Mitigation. Compensatory mitigation for modifications to wetlands and related impacts to the buffers shall be used for impacts that cannot be avoided or minimized and shall achieve equivalent or greater wetland functions. Approved modifications to a wetland and related impacts to the buffer require compensatory mitigation based on mitigation ratios pursuant to KZC 90.____ so that the goal of no net loss of wetland functions and value is achieved.

2. Compensatory Wetland Mitigation Ratios.

- a. Acreage Replacement Ratios.

The following ratios shall apply to creation or restoration that is in-kind, on-site, the same category, timed prior to or concurrent with alteration, and has a high probability of success. These ratios do not apply to remedial actions resulting from unauthorized alterations which require greater ratios. These ratios do not apply to the use of credits from a state-certified wetland mitigation bank or approved in-lieu fee program.

The first number specifies the acreage of replacement wetlands and the second number specifies the acreage of wetlands altered.

Table 90. Mitigation Ratios for Wetlands

Category of Wetland Impacted	Creation	Re-establishment-Rehabilitation Only	Creation and Rehabilitation	Creation and Enhancement	Enhancement Only
Category IV	1.5:1	3:1	1:1 C and 1:1 RH	1:1 C and 2:1 E	6:1
Category III	2:1	4:1	1:1 C and 2:1 RH	1:1 C and 4:1 E	8:1
Category II	3:1	6:1	1:1 C and 4:1 RH	1:1 C and 8:1 E	12:1
Category I: Forested	6:1	12:1	1:1 C and 10:1 RH	1:1 C and 20:1 E	24:1
Category I: based on total functions	4:1	8:1	1:1 C and 6:1 RH	1:1 C and 12:1 E	16:1

Category of Wetland Impacted	Creation	Re-establishment-Rehabilitation Only	Creation and Rehabilitation	Creation and Enhancement	Enhancement Only
Category -I: Bog	Not possible	6:1 RH of a bog 8:1	Not possible	Not possible	Case-by-case
Buffer (see comment in subsection b. below)	1:1	1:1	1:1	1:1	1:1

Legend: C = Creation, RH = Rehabilitation, E = Enhancement

- b. Buffer Enhancement Ratio. The City may require a buffer enhancement ratio of greater than 1:1 for exceptional 2nd growth forest or mitigation of an already functioning buffer based on the critical area report.
- c. Credit/Debit Method.

As an alternative to the mitigation ratios, the City may allow mitigation based on the "credit/debit" method developed by the Department of Ecology. This method may be appropriate where a wetland is not filled but is otherwise modified.

3. Mitigation for Lost Values and Affected Functions. Compensating for lost values and affected functions must be addressed in the compensatory mitigation plan of KZC 90.____ to achieve functional equivalency or improvement. The goal and preference shall be for the compensatory mitigation to provide in-kind wetland functions as those lost, except when:

- a. The filled/impacted wetland provides minimal functions as determined by a site-specific function assessment, and the proposed mitigation action(s) will provide equal or greater functions or will provide functions shown to be limiting within the city's watershed through a regional watershed plan; or
- b. Out-of-kind replacement will best meet formally identified watershed goals, such as replacement of historically diminished wetland types.

4. Preference of Compensation.

- a. Compensation shall occur in the following order of preference based on in-kind:
 - 1) Restoring wetlands on upland sites that were formerly wetlands. This action includes re-establishment and re-habitation;
 - 2) Creating/establishing wetlands on disturbed upland sites, such as those with vegetative cover consisting primarily of non-native species;
 - 3) Enhancing significantly degraded wetlands; or

- 4) Preserving/maintaining a wetland to remove threat or prevent decline, such as purchasing land. Preservation does not result in gain of wetland acres.

b. Location of compensatory mitigation shall occur in the order of preference established in KZC 90__.

4. Approaches to Compensatory Mitigation. Mitigation shall use one of the following options based on the preference described in KZC 90__.:
 - a. Applicant-responsible mitigation,
 - b. State and federally-approved wetland mitigation bank or
 - c. In-lieu fee mitigation and,
 - d. In some cases, advance mitigation as described in KZC 90__.

Where wetland mitigation bank or in-lieu fee mitigation are used, the credit-accounting method shall be determined based on the approved mitigation instrument.

5. Mitigation shall use one of the following options: applicant-responsible mitigation, wetland mitigation bank or in-lieu fee mitigation and, in some cases, advance mitigation as described in KZC 90__ based on the preference described in KZC 90__.
6. Compensatory Mitigation Plan. A compensatory mitigation plan shall be prepared by a qualified critical area professional approved by the City consistent with state guidelines and submitted with the wetland modification assessment of KZC 90__ for approval as part of the critical area permit using a Process I. The plan shall contain:
 - a. A topographic survey showing existing and proposed topography and improvements. Surveys should be of sufficient quality to determine 1-foot minimum contour intervals;
 - b. Schedule of the project for all work;
 - c. Description of the compensatory mitigation site, including location and vicinity map, rationale for selection and how it meets the required mitigation ratios of KZC 90__;
 - d. Description of proposed actions for compensation of wetland and buffer areas affected by the project, overall goals and targets of the proposed mitigation plan, and proposed mitigation timing. Documentation if the compensatory mitigation will be done through a mitigation banking or fee-in-lieu program pursuant to KZC 90__;
 - e. Construction protective measures that are necessary, such as siltation prevention measures and scheduling the construction activity to avoid interference with wildlife nesting activities;
 - f. Description of surface and subsurface hydrologic conditions, including an analysis of existing and proposed hydrologic regimes for enhanced, created or restored compensatory mitigation areas;
 - g. Description of performance standards for post-installation, a monitoring and maintenance schedule based on the time period required in KZC 90__ along with a financial security estimate for the entire compensatory mitigation project that meet the standards in KZC 90__;
 - h. Proof of title ownership for the wetlands and buffers, including the compensatory mitigation areas, when mitigation is done by the applicant, and
 - i. Identification of all local, state and/or federal wetland-related permits required for the project.

7. Timing of Compensatory Mitigation. See KZC 90__ for when an applicant must install the compensatory mitigation or document if a third party responsible mitigation is used to meet the mitigation requirement.

90.XX Measures to Minimize Impacts to Wetlands

The following measures must be incorporated into the design of a site containing a wetland and/or buffer. The Planning Official shall determine the applicability of each measure based on the uses and/or activities on the subject property. The City will maintain best management practice policies for implementing these measures.

Table 90. __ Measures to Minimize Impact to Wetlands and Associated Buffers

Disturbance	Required Measures to Minimize Impacts
Lights	- Shield exterior wall mounted and free standing lights that face the wetland or buffer so that they are down casted and directed away from critical area and associated buffer.
Noise	- Activities that generate noise, such as parking lots, drive thru facilities, generators, HVAC units shall be located away from the wetland or buffer to the maximum extent possible, or noise shall be minimized through use of design measures, insulation techniques or additional native vegetation. - Activities or uses that generate relatively continuous, potentially disruptive noise, such as certain heavy industrial shall provide an additional 10 feet in width of heavily vegetated buffer strip immediately adjacent to the outer wetland buffer that meets Section 95.42 KZC, Buffer Standard 1, but not including the fence.
Toxic runoff	- Route all new untreated runoff away from critical area while ensuring wetlands are not dewatered. - Establish covenants limiting use of pesticides within 150 feet of wetland. - Apply integrated pesticides management.
Stormwater runoff	- Retrofit stormwater detention and treatment for roads and existing adjacent development. - Prevent channelized flow from lawns that directly enters the wetland buffer. - Use low impact development techniques per the City’s standards.
Pets and human disturbance	- Install wood or metal rail fence and signage pursuant to KZC 90.__ along the edge of the buffer. - Place wetland and buffer in a separate conservation easement or tract pursuant to KZC 90.__.
Dust	- Use best management practices to control dust.

90.XX Monitoring and Maintenance

1. General. A monitoring and maintenance program shall be included for installing the required Vegetative Buffer Standards pursuant to KZC 90.__ or for wetland or stream modifications. The applicant or its successor shall fund the monitoring and maintenance to completion of the program as determined by the City.

2. Monitoring and Maintenance Program. Requirements for a monitoring and maintenance program for revegetation shall include the following, unless an alternative program is approved by the City. For all other mitigation measures, a monitoring and maintenance schedule shall be determined on a case by case basis:
- a. The goals and objectives of the monitoring and maintenance plan;
 - b. The performance standards by which the mitigation will be assessed. At a minimum, vegetation mitigation shall include the following performance standards:
 - 1) Year-1: 100 percent survival of installed vegetation through a combination of survival and replacement;
 - 2) Year-2: 80 percent survival of installed vegetation;
 - 3) Year-3: At least 50 percent vegetation coverage for installed vegetation;
 - 4) Year-5:
 - a. At least 80 percent native vegetation coverage on average throughout the mitigation area with two out of three of the following strata of native plant species comprising at least 20% areal cover;
 - (1) Trees;
 - (2) Shrubs; and
 - (3) Woody groundcover (such as kinickinick, salal and sword fern);
 - b. At least three native species each making up a minimum of 10 percent coverage;
 - 5) All years:
 - a. Less than 10 percent noxious weeds cover using King County weed list, except less than 20 percent cover of reed canarygrass where a pre-existing or proximate monoculture occurred; and
 - b. No infestation of knotweed at any time during the duration of the program period.
 - c. Monoculture stands of native vegetation, such as alder and cottonwood, shall not be included in the total cover calculation for how much plant material has survived in the first two years;
 - d. Contingency plan identifying a course of action, corrective measures and a timetable to be taken if monitoring indicates that the performance measures have not been met.
 - e. Once the vegetation or other mitigation plan is installed and inspected by the City, the applicant shall submit an as-built plan of the approved mitigation plan or revegetation of the buffer.
3. Duration and Schedule of Monitoring and Maintenance Program. Unless otherwise required by the Planning Official, the minimum duration of the program shall be as follows:
- a. The duration of monitoring and maintenance program shall be as follows
 - 1) Two (2) growing seasons when only a portion of the buffer is required to be vegetated. This applies to new structures of less than 1000 square feet of footprint pursuant to KZC 90.____ and for additions to non-conformances pursuant to KZC 90.____.
 - 2) Five (5) growing seasons for mitigation projects not including forested or shrub wetland creation, and revegetating a buffer to meet the buffer standards in KZC 90.____ when buffer averaging is proposed; and
 - 3) Ten (10) growing seasons for forested or shrub wetland creation.
 - b. A schedule for site visits for monitoring and maintenance is as follows:
 - 1) For two year program: two (2) site visits for each of the first two years. If not maintained, then the program shall be extended an additional growing season or more with two site visits per year;

- 2) For five (5) year program: two (2) site visits for each of the first two years and one site inspection every 12 months for subsequent years unless not maintained properly; and
 - 3) For ten (10) year program: visits in growing seasons 1, 2, 3, 5, 7 and 10 unless not maintained properly.
- c. The Planning Official may extend the duration of the program and the number of visits at the end of the established monitoring and maintenance period if the program requirements have not been met.
4. Maintenance Work. Prior to final inspection of the vegetation and any other mitigating measures required in this chapter, the applicant shall submit a copy of a signed contract to fund maintenance by a qualified maintenance company, approved by the City, with experience in maintaining critical area vegetation and other improvements for the life of the monitoring period.
 5. Options for Monitoring Work. The applicant may choose one of the following methods for who performs the monitoring work:
 - a. City Does Work. If the City will oversee the maintenance and perform the monitoring either by in-house staff or through a consultant, the monitoring fee will be based on an actual cost estimate of the work. The applicant shall submit a cash prepayment for all work to the City prior to final inspection.
 - b. Applicant's Consultant Does Work.
 - 1) If the City will not perform the monitoring, the applicant shall submit a signed contract to fund a qualified critical area professional, approved by the City, to monitor the maintenance and perform the monitoring over the life of the program. The cost of the work must be included in the performance security under KZC 90.__; and
 - 2) In addition, the applicant shall submit a cash prepayment with the building permit for the cost of the City to do peer review of the monitoring report prior to final inspection or occupancy.
 6. Financial Security. A financial security for performance, monitoring and maintenance is required pursuant to KCZ 90.__.

90.XX Financial Security for Performance, Maintenance and Monitoring

1. Performance or Maintenance Security Requirement.
 - a. A security required by the Planning Official shall be in the amount and form as the Planning Official deems necessary to assure that all work or actions are satisfactorily completed or maintained in accordance with the approved plans, specifications, and permit or approval requirements.
 - b. State agencies and local government bodies, including school districts, shall not be required to secure the performance or maintenance security. These public agencies are required to comply with all requirements, terms, and conditions of the permit or approval, and the Planning Official may enforce compliance by withholding certificates of occupancy or occupancy approval, by administrative enforcement action, or by any other legal means.
 - c. The security shall be conditioned on the work being completed or maintained in accordance with requirements, approvals, or permits; on the site being left or maintained in a safe condition; and

on the site and adjacent or surrounding areas being restored in the event of damages or other environmental degradation from development or maintenance activities conducted pursuant to the permit or approval

2. Submitted Documents.
 - a. The security shall be in the form of a:
 - 1) Surety bond obtained from companies registered as surety in the state or certified as acceptable sureties on federal bonds,
 - 2) Assignment of funds or account,
 - 3) Escrow agreement,
 - 4) Irrevocable letter of credit, or
 - 5) Other financial security device.
 - b. A completed security information form, security agreement and License to Enter Property document along with the required recording fee for that document shall be submitted. All forms shall be acceptable to and approved by the City.
3. When Submitted. A financial security for performance, monitoring and maintenance shall be submitted prior to issuance of a land surface modification or building permit for plantings, improvements and other mitigation measures required in this chapter. One security shall be submitted to cover performance, monitoring and maintenance unless otherwise approved by the City.
4. Determination of the Security Amount.
 - a. Determination of the security amount shall be done using the City's security value worksheet based on the approved plans, specifications, permit or approval requirements, and applicable regulations. Construction, maintenance and monitoring costs shall be based on the King County Critical Areas Mitigation Bond Quantity Worksheet;
 - b. The financial security shall be equal to or greater than 150 percent of the estimated cost of conformance to plans, specifications and permit or approval requirements of this chapter, including corrective work, compensation, enhancement, mitigation, monitoring, maintenance and restoration of critical areas; and
 - c. Actual security costs shall include all labor, materials, erosion control or general items, and sales tax associated with the required work. The security shall be sufficient to guarantee that all required improvements and measures will be completed in a timely manner and with sufficient funds in accordance with this chapter. The security shall cover all work or actions not satisfactorily completed or maintained that need to be corrected to comply with the approved plans.
5. Cash Deposit. A cash deposit for the cost of City administration of the security shall be submitted with the financial security as required in KZC 175.25.
6. Duration of Performance, Monitoring and Maintenance Security.
 - a. Duration of monitoring and maintenance security shall be consistent with the approved program pursuant to KZC 90.____;
 - b. The performance or maintenance security may be released upon written notification by the Planning Official, following final site inspection or when the Planning Official is satisfied that the work or activity complies with permits or approved requirement;
 - c. The Planning Official may require a security longer than KZC 90.____. for complex mitigation projects, such as creation of wetlands, daylighting of a stream or relocating a stream channel, or to extend the length of a security for projects where vegetation or other improvements have been poorly maintained over several years or for code enforcement actions; and

- d. No portion of the security may be released during the established monitoring and maintenance period, except as authorized in KZC 90.____ above, to cover potential catastrophic failure of the plantings and other improvements in the future.
7. Corrective Measures.
- a. If during the term of the performance or maintenance security, the Planning Official determines that conditions exist which do not conform with the plans, specification, approval or permit requirements, the Planning Official may issue a stop work order prohibiting any additional work or maintenance until the condition is correct.
 - b. The Planning Official may revoke the performance or maintenance security or a portion thereof, to correct conditions that are not in conformance with plans, specifications, approval or permit requirements
 - c. Where monitoring reveals a failure of mitigation or maintenance measures, the applicant shall be responsible for appropriate corrective action which, when approved, shall be subject to further monitoring. The Planning Official shall determine the additional monitoring requirements if needed.
8. Transfer of Security. In the event that a performance, monitoring and maintenance security is transferred to a subsequent property owner or management entity:
- a. An additional City administrative fee shall be charged for transferring a security to a subsequent owner;
 - b. The applicant and the subsequent owner must document the transfer authority of the security; and
 - c. A written agreement from the subsequent owner shall be submitted agreeing to the costs and other responsibilities of the maintenance and monitoring program.
9. Obligation. Any inability of a security device to fund the cost of the security shall not discharge the obligation of an applicant or violator to complete the required mitigation, maintenance, monitoring, or restoration.

90.XX Subdivisions and Maximum Development Potential

1. Subdivisions - The subdivision and/or short subdivision of land in a wetland, stream or related buffers is subject to the following criteria and subsections 2 through 4 below:
- a. Land that is located entirely within a wetland, stream or related buffer may not be subdivided.
 - b. Land that is located partially within a wetland, stream or related buffer may be subdivided if, as part of the short plat or subdivision application, the applicant demonstrates that each lot contains sufficient developable area to accommodate the allowed use(s) in that zone, including required vehicular access, parking, and stormwater management facilities, outside of the critical area and its buffer.
 - c. Land where an existing nonconforming structure is located within a critical area or buffer, and if subdivided would preclude relocating the structure outside of the critical area and buffer due to lack of sufficient developable area of at least 3,000 square feet while also meeting all other requirements of this chapter, may not be subdivided.

2. Calculating allowed Number of Dwelling Units. The maximum potential number of dwelling units for a site which contains a wetland, stream minor lake, or their buffers is reduced from the maximum potential number of dwelling units that otherwise are allowed in the underlying zone.

3. Maximum Development Potential Calculation.

- a. The maximum potential number of dwelling units shall be the buildable area in square feet divided by the minimum lot area per unit or the maximum units per acre as specified by Chapters 15 through 56 KZC, plus the area of the required critical area buffer in square feet divided by the minimum lot area per unit, the maximum units per acre, or as specified by Chapters 15 through 56 KZC, multiplied by the development factor derived from subsection (2) of this section as provided in the formula below:

$$\text{MAXIMUM DWELLING UNIT POTENTIAL} = (\text{BUILDABLE AREA/THE PRESCRIBED MINIMUM LOT AREA PER UNIT OR MAXIMUM UNITS PER ACRE}) + [(\text{BUFFER AREA/THE PRESCRIBED MINIMUM LOT AREA PER UNIT OR MAXIMUM UNITS PER ACRE}) \times (\text{DEVELOPMENT FACTOR})]$$

- b. For purposes of this subsection only, "buildable area" means the total area of the subject property minus critical areas and their buffers.
- c. A professional survey shall determine the area of critical areas and buffers on the subject property.
- d. For multifamily development, and single family development in RSA zones, if application of the maximum development potential formula results in a fraction, the number of permitted dwelling units shall be rounded up to the next whole number (unit) if the fraction of the whole number is at least 0.50.
- e. For single family development in low density zones other than the RSA zones, the number of permitted dwelling units shall be rounded down to the previous whole number (unit) regardless of the fraction of the whole number.
- f. For developments providing affordable housing units pursuant to Chapter 112 KZC, or cottage, carriage or two/three-unit homes pursuant to Chapter 113 KZC, or low impact development pursuant to Chapter 114 KZC, the maximum dwelling unit potential of this section establishes the base density allowed. The additional density or bonus units allowed by those chapters shall be in addition to the maximum dwelling unit potential.
- g. The provisions in KZC Section 125.30 for density under a Planned Unit Development cannot be applied to properties containing critical areas or buffers.
- h. The maximum development potential formula shall not be construed to preclude application of Chapter 22.28 KMC (lot size reduction, low impact development, small lot single family, and historic preservation) to potentially achieve an increased number of single family dwelling units for short plats and subdivisions.
- i. Lot size and/or density may be limited by or through other provisions of this code or other applicable law, and the application of the provisions of this chapter may result in the necessity for larger lot sizes or lower density due to inadequate buildable area.

3. Development Factor – The development factor, consisting of a “percent credit,” to be used in computing the maximum potential number of dwelling units for a site which contains a critical area buffer is derived from the following table:

Percentage of Site in Critical Area Buffer			Counted at
< 1	To	10%	100%
> 10	To	20%	90%
> 20	To	30%	80%
> 30	To	40%	70%
> 40	To	50%	60%
> 50	To	60%	50%
> 60	To	70%	40%
> 70	To	80%	30%
> 80	To	90%	20%
> 90	To	100%	10%

90.XX Dimensional Design Standards for Residential Uses

1. Reduced Dimensional Standards for Residential Uses. The following dimensional requirements may be reduced for the non-critical area of site to accommodate the constraints of the buildable area of the lot, provided that:
- a. The applicant must demonstrate that the reduction shall be the minimum necessary to allow avoidance of the critical area, critical area buffer and structure setback; and
 - b. The resulting development is compatible with other development or potential development in the immediate vicinity of the subject property in the same zone and with similar site constraints.

2. The standards are as follows:

Reduced Dimensional Standards for Residential Uses	
Minimum Required Yards	<ul style="list-style-type: none"> • 0’ for interior side and rear yards within the proposed development to encourage clustering between dwelling units • 10’ for front yards • 5’ for side and rear yards that abut properties that are not part of the proposed development
Minimum Parking Pad Dimensions ¹	<ul style="list-style-type: none"> • width - 8.5 feet per required stall • depth - 18.5 feet per required stall
Tandem Parking	<ul style="list-style-type: none"> • allowed where stalls are shared by the same dwelling unit

Notes:
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1. Any garage or other structure shall be set back a minimum of 18.5 feet from the property line to allow on-site parking on any driveway without blocking a sidewalk.

90.XX Reasonable Use Exception

1. Purpose. The purpose of the reasonable use exception is to:
 - a. Provide the City with a mechanism to approve limited use and disturbance of a critical area and critical area buffer when strict application of this chapter would deny all economically viable use of the property;
 - b. Establish guidelines and standards for the exercise of this authority adjusted to the specific conditions of each subject property; and
 - c. Protect public health, welfare and safety of the citizens of Kirkland.
2. Reasonable Use. Reasonable use is a legal concept that has been articulated by federal and state courts in regulatory takings cases. In a takings case, the decision-maker must balance the public benefit against the owner's interests by considering the nature of the harm the regulation is intended to prevent, the availability and effectiveness of alternative measures, and the economic loss borne by the owner. Public benefit factors include the seriousness of the harm to be prevented, the extent to which the land involved contributes to the harm, the degree to which the regulation solves the problem, and the feasibility of less oppressive solutions.
3. Reasonable Use Process. If the strict application of this chapter would preclude all reasonable use of the subject property, an owner of real property may apply for a reasonable use exception. The application shall be considered under Process I of KZC 145;
4. Submittal Requirements: As part of the reasonable use request, in addition to submitting an application, the applicant shall submit a critical area report pursuant to KZC 90.___, prepared by a qualified critical area professional and fund a review of this report by the City's consultant. The report shall include the following:
 - a. For a wetland, the additional report information requirements specified in KZC 90.___. For a stream, the additional report information requirements specified in KZC 90.____;
 - b. An analysis of whether any other reasonable use with less impact on the critical area and critical area buffer is possible;
 - c. Sensitive site design and construction staging of the proposal so that the development will have the least practicable impact on the critical area and critical area buffer;
 - d. A site plan showing:
 - 1) The critical area, critical area buffer and structure setback required by this chapter;
 - 2) The proposed area of disturbance both on and off the subject property pursuant to the disturbance area limitations of subsection 5.c below;
 - 3) The footprint of all proposed structures meeting the conditions of subsection 5 below, including:
 - a) buildings
 - b) garages and parking areas
 - c) driveways
 - d) paved surfaces, such as walking paths
 - e) patios, decks and similar structures

- e. A description of protective measures that will be undertaken such as siltation curtains, compost berms and other siltation prevention measures, and scheduling the construction activity to avoid interference with wildlife and fisheries rearing, nesting or spawning activities;
 - f. An analysis of the impact that the amount of development proposed would have on the critical area and the critical area buffer;
 - g. How the proposal minimizes to the greatest extent possible net loss of critical area functions;
 - h. How the proposal mitigates for impacts to the critical areas and buffers;
 - i. Whether the improvement is located away from the critical area and the critical area buffer to the greatest extent possible; and
 - j. Such other information or studies as the [Planning Official](#) may reasonably require.
5. Decisional Criteria: For purposes of this section, "site" means the area of disturbance on the subject property, on abutting property, and/or within the right of way. The City shall approve applications for reasonable use exceptions only if all of the following criteria are met:
- a. The following land uses may be proposed with a reasonable use exception:
 - 1) Residential zones - one (1) single family dwelling
 - 2) Commercial or Office zones:
 - a) An office use, except veterinary offices with outdoor facilities, and
 - b) A limited retail establishment, excluding restaurants and taverns, gas stations, vehicle or boat sales, service or repair, car washes, drive-thru, outdoor seating area and storage. In order to limit disturbance and impacts to the critical area and buffer, these uses shall at a minimum, meet the mitigation standards of KZC 90. , and shall:
 - (1) Locate parking on the opposite side of the building from the critical area and
 - (2) Limit hours of operation to between 8:00 a.m. and 11:00 p.m.
 - b. There is no feasible alternative to the proposed activities and uses on the subject property, including reduction in size, density or intensity, phasing of project implementation, change in timing of activities, revision of road and lot layout, and/or related site planning considerations that would allow a reasonable economic use with less adverse impacts to the critical area and buffer;
 - c. Unless the applicant can demonstrate unique circumstances related to the subject property, the amount of site area that will be disturbed by structure placement and all land alteration associated with the proposed development activity, including but not limited to land surface modification, utility installation, decks, driveways, paved areas, and landscaping, shall not exceed the following limits:
 - 1) If the subject property contains 6,000 square feet of area or less, no more than 50 percent of the site may be disturbed.
 - 2) If the subject property contains more than 6,000 square feet but less than 30,000 square feet, no more than 3,000 square feet may be disturbed.
 - 3) For properties containing 30,000 square feet or more, the maximum allowable site disturbance shall be between 3,000 square feet and 10 percent of the lot area, to be determined by the City on a case-by-case basis.

- 4) The amount of allowable disturbance shall be that which will have the least practicable impact on the critical area and the critical area buffer given the characteristics and context of the subject property, critical area, and buffer.
- 5) Public Improvements within the right-of-way required by KZC Chapter 110, (for example required curb, gutter and sidewalk improvements), are not counted in the maximum allowable area of site disturbance. The City shall allow or require modifications to the public improvement standards that minimize the impact to the critical area and buffer and any impacts associated with required public improvements shall be mitigated by the applicant.
- 6) The portion of a driveway, located within an improved right-of-way is not counted in the maximum allowable area of site disturbance. However, a driveway or any other private improvements located in an unimproved right-of-way shall be counted in the maximum allowable area of site disturbance.

The applicant shall pay for a qualified critical area professional, approved by the City, to help with the City's determination of the appropriate limit for disturbance;

- d. The proposal is compatible in design, scale and use with other legally established development in the immediate vicinity of the subject property in the same zone and with similar critical area site constraints;
 - e. The proposal utilizes to the maximum extent possible innovative construction, design, and development techniques, including pervious surfaces, which minimize to the greatest extent possible net loss of critical area functions and values;
 - f. The proposed development does not pose an unacceptable threat to the public health, safety, or welfare on or off the property;
 - g. The proposal meets the mitigation, maintenance, and monitoring requirements of this chapter;
 - h. The proposed development is on a lot meeting the criteria of KZC 115.80 Legal Building Site.
 - i. The inability to derive reasonable use is not the result of the applicant's actions or that of previous property owners, such as by subdividing property or altering lot lines pursuant to Chapter 22 KMC that results in an undevelopable condition; and
 - j. The granting of the exception will not confer on the applicant any special privilege that is denied by this chapter to other lands, buildings, or structures under similar circumstances.
6. Modifications and Conditions: The City shall include in the written decision any conditions and restrictions that the City determines are necessary to eliminate or minimize any undesirable effects of approving the proposal. To provide reasonable use of the subject property and reduce the impact on the critical area and critical area buffer, the Planning Director pursuant to a Process I under Chapter 145 KZC is authorized to approve the following modifications:
- a. Residential.
 - 1) Where the applicant demonstrates that the residential development cannot meet the City's code requirements without encroaching into the critical area:
 - a) The required front yard may be reduced by up to 50 percent provided that a minimum of 18.5 foot parking pad between the structure and the property line is required; and
 - b) The required side and rear yards may be reduced to five (5) feet.

- 2) Those portions of a driveway exceeding 30 feet in length may be exempt from the calculation of the 3,000 square feet of permitted site impact, provided that the driveway length is the minimum necessary to provide access to the building or dwelling unit.
- 3) The structure setback may be reduced to five (five) feet, provided that those improvements allowed in this area are limited to:
 - a) Chimneys, bay windows, greenhouse windows, eaves, cornices, awnings and canopies, and decks above the ground floor extending no more than 18" into structure setback;
 - b) Benches, walkways, paths and pedestrian bridges extending no more than four (4) feet into structure setback;
 - c) Garden sculpture, light fixtures, trellises and similar decorative structures extending no more than four (4) feet into structure setback; and
 - d) Non-native landscaping.
- 4) The garage width requirements of Section 115.43.3.b for detached dwelling units in low density zones may be waived.
- 5) The maximum height of structures may be increased up to five (5) feet if needed to reduce the percent of slope of a driveway to a structure based on existing grade. The applicant must demonstrate that the additional height is needed and no other option is available.

b. Commercial.

Where the applicant demonstrates that the commercial development cannot meet the City's code requirements without encroaching into the critical area:

- 1) The required front yard may be reduced by up to 50%
- 2) The structure setback may be reduced by five (five) feet, provided that those improvements allowed in this area are limited to:
 - a) Chimneys, bay windows, eaves, cornices, awnings and canopies;
 - b) Benches, walkways, paths and pedestrian bridges extending no more than four (4) feet into structure setback;
 - c) Light fixtures, trellises and similar decorative structures extending no more than four (4) feet into structure setback; and
 - d) Non-native landscaping.
- 3) The maximum height of structures may be increased up to five (5) feet if needed to reduce the percent of slope of a driveway to a structure based on existing grade. The applicant must demonstrate that the additional height is needed and no other option is available.

7. Lapse of Approval.

- a. The reasonable use exception approval expires and is void if the applicant fails to file a complete building permit application within five (5) years of the final decision granting or approving the exception; provided, however, that in the event judicial review is initiated per KZC 145.110, the running of the five (5) years is tolled for any period of time during which a court order in said judicial review proceeding prohibits the required development activity, use of land, or other actions. "Final decision" means the final decision of the Planning Director; and

- b. The applicant must substantially complete construction for the development activity, use of land, or other actions approved under this chapter and complete the applicable conditions listed on the notice of decision within seven (7) years after the final approval on the matter, or the decision becomes void.

8. Complete Compliance Required.

- a. General. Except as specified in subsection 8.b of this section, the applicant must comply with all aspects, including conditions and restrictions, of an approval granted under this chapter in order to construct the improvements authorized by the approval.
- b. Exception: Subsequent Modification. The Planning Official may approve a subsequent modification to a specific use and site plan that has been approved through the reasonable use exception, provided the change meets the standards of this chapter. Otherwise, the applicant is required to apply for and obtain approval through Process I for a new reasonable use exception.

90.XX Nonconformances

1. General Requirements.

- a. Any structures or improvements that are nonconforming as a result of the regulations in this chapter shall be regulated pursuant to the following provisions in this rather than the provisions of Chapter 162 KZC. However, these provisions do not apply to nonconforming uses, except for nonconforming detached dwelling unit pursuant to KZC 162.35.12 and continued uses pursuant to KZC 90.162.55.
- b. Any disturbance to the critical area buffer during construction shall be the minimum necessary and all disturbed areas shall be restored;
- c. Any existing vegetation removed in the buffer as part of the disturbance shall be replaced with native vegetation at a 1:1 ratio;
- d. Lawn and non-native landscaped areas shall not be expanded in the buffer area;
- e. The limits of disturbance and a replanting plan, if applicable, shall be submitted as part of the building permit application.

2. Normal and Routine Maintenance and Repair of Nonconforming Structure.

- a. A legal nonconforming structure may be maintained and repaired within the scope of normal and routine, provided that the work does not increase the previous approved structure footprint or extend an exterior wall. See KZC 90.___ for exemptions.
- b. Multifamily structures in multifamily zones that are nonconforming for density may not increase the density as part of the work on the structure. See KZC 90.162.35.12.
- c. This provision does not include reconstruction of a nonconforming structure or replacement of exterior bearing walls; and

3. Expansion of Nonconforming Structure that does not Increase the Degree of Nonconformance. Except as disallowed under KZC 90.___2.b, an expansion of a nonconforming structure is permitted if the addition is outside of the critical area, critical area buffer, and structure setback (see Plate___). No disturbance of the critical area or buffer is permitted during construction.

4. Reconstruction of Existing Nonconforming Structures.

- a. Detached Dwelling Units.

- 1) An existing legally nonconforming building or detached garage, may be reconstructed as repair or due to casualty damage such as a fire, provided that there is no expansion of the existing footprint, including decks, no increase in the nonconformity in any way, and reconstruction is built on the existing foundation (see Plate__).
- 2) If the foundation must be replaced due to casualty damage, the new foundation must be located outside of the critical area, its buffer and the building setback to the greatest extent possible given other required yards and existing improvements.
- 3) Additional upper floors may be added provided that they do not encroach into the critical area, its buffer or the building setback any more than the existing nonconforming structure.

b. All Other Uses:

- 1) An existing legally nonconforming structure may be reconstructed as repair or due to a casualty damage such as a fire, provided that there is no expansion of the existing footprint, including decks, no increase in the nonconformity in any way, and reconstruction is built on the existing foundation; and
- 2) However, if the cost of the repair exceeds 50 percent of the assessed or appraised value of that improvement, whichever is greater, the structure and improvements shall be brought into conformance.

- c. In case of casualty damage, a complete building permit application to rebuild the nonconforming structure must be submitted within 24 months of the date of the damage or the nonconformance shall be considered to be terminated and shall not be replaced in its prior nonconforming location. In addition, documentation showing the location and dimensions of the damaged primary structure and/or garage and cause of the damage shall be submitted to the City for review and confirmation.

5. Expansion of Nonconforming Building that Increases the Nonconformance.

An existing, legally established nonconforming building may be expanded into a critical area buffer or the building setback under the following standards and limitations:

a. General Standards for Any Expansion.

- 1) Expansion is only permitted for those structures that have not received City approval for a buffer modification allowed under the previous code or not received approval for a reasonable use permit.
- 2) No expansion shall be located in a critical area and no disturbance shall occur in a critical area as part of construction.
- 3) No expansion is permitted in a critical area buffer for a Category I Bogs and wetlands of high conservation value pursuant to KZC 90.__.
- 4) No expansion is permitted in a critical area buffer that is a fish and wildlife conservation area without an approved and management plan pursuant to KZC 90.__.
- 5) Upper floor additions are permitted above the new ground floor footprint addition, but may not encroach farther towards the critical area buffer and building setback beyond the new footprint.
- 6) Existing carports and covered decks may be enclosed provided that the new exterior walls do not extend beyond the exterior foundation or corner supports.
- 7) Any commercial parking required for the addition shall not be located in the critical area.

- 8) A critical area report and a survey pursuant to KZC 90.____ are required if the wetland has not been rated and delineated pursuant to KZC 90.____ within the past five (5) years or the stream has not been classified or delineated pursuant to KZC 90. ____.
 - 9) Any disturbance to the critical area buffer during construction must be the minimum necessary and all disturbed areas shall be revegetated with native vegetation using the buffer vegetative standards in KZC 90.____ as a guideline. Lawn or other non-native ornamental vegetation areas shall not be extended beyond the existing area.
 - 10) Compensatory mitigation through buffer restoration at a ratio of 1:1 shall be provided based on the total square foot of the building footprint addition. The buffer revegetation shall be located in the buffer along the edge of the critical area at 10 feet in depth and across from the expansion area. The buffer vegetative standards pursuant to KZC 90.____ shall be proportionately met for the mitigation area. The mitigation is in addition to revegetation of the disturbed area.
 - 11) A replanting plan, prepared by a qualified critical area professional approved by the City, shall be submitted for approval as part of the building permit. Prior to occupancy, replanting of any disturbed area and the mitigation planting shall be installed and inspected by the City.
 - 12) A performance and two-year maintenance and monitoring security shall be submitted with the building permit pursuant to KZC 90.____ for the replanting and mitigation plan.
 - 13) Fencing and signage are required along the entire upland edge of buffer during construction. Upon completion of the project, fencing and signage must be installed if the subject property does not already contain a fence and/or signage meeting the standards in KZC 90. ____.
 - 14) Critical areas and buffers shall be placed in recorded on property titles as critical area easements or tracts for perpetual protection. See KZC 90.____.
 - 15) All costs shall be at the expense of the applicant.
- b. Expansion into Critical Area Buffer on Side of the Building Opposite of Critical Area. The footprint of an existing building may be expanded into the critical area buffer on the side of the dwelling unit opposite of the critical area buffer up to a maximum of 1,000 square feet. The existing building must be between the addition and the critical area (see Plate ____).
- c. Expansion into Structure Setback.
- 1) The footprint of an existing building may be expanded into the structure setback up to a maximum of 500 square feet (see Plate ____); and
 - 2) If an addition is located at the edge of the buffer, the portion of the buffer next to the side of the addition abutting the buffer is considered a structure setback. Necessary maintenance and repair of the addition is permitted in this portion of the structure setback. However, no improvements pursuant to KZC 90.____ are permitted in this portion of the structure setback.
- d. Expansion into Critical Area Buffer No Closer than the Building.
- 1) The footprint of an existing building may be expanded into the critical area buffer, but no closer than the edge of the existing building nearest to the critical area at up to maximum of 500 square feet (see Plate ____); and
 - 2) The minimum buffer width for the addition shall be 60% of the required buffer width standard pursuant to KZC 90. ____ and KZC 90.____.
- e. Expansion into Critical Area Buffer between the Building and the Critical Area Buffer.
- 1) The footprint of a building may be expanded into the critical area buffer between the building and the critical area buffer up to maximum of 250 square feet (see Plate ____); and
 - 2) The minimum buffer width for the addition shall be 60% of the required buffer width standard pursuant to KZC 90. ____ KZC 90.____.

90.XX Critical Area Markers, Fencing and Signage

1. Survey Stakes. Permanent survey stakes delineating the boundary of the critical area buffer shall be set, using iron or concrete markers as established by current survey standards.
2. Construction Fencing. Prior to commencement of any grading or other development activities on the subject property, a 6-foot-high construction chain link fence must be installed along the entire edge of the buffer. The fence may not be located in the critical area buffer. The Planning Official shall inspect the fence prior to commencement of any work. The fence must remain in place until completion of the project and not removed at any time other than as authorized by the Planning Official.
3. Permanent Fencing. Upon completion of the project, a permanent 3- to 4-foot-high wood or metal rail fence must be installed along the entire edge of the buffer. The fence may not be located in the critical area buffer. The Planning Official shall inspect the fence prior to final inspection or occupancy. The fence must be maintained and remain in perpetuity.
4. Permanent Signage. Upon completion of the project, permanent signage shall be attached to the fence stating that the protected critical area and buffer must not be disturbed other than necessary for maintenance of vegetation. The signs must be maintained and remain in perpetuity. Signage shall meet the administrative standards of the Planning and Building Department for design, number and location. The Planning Official shall inspect the signage prior to final inspection or occupancy.

90.XX Pesticide and Herbicide Use

Application of pesticides, herbicides, or fertilizers and irrigation practices for residential, commercial and institutional uses shall follow the Best Management Practices (BMP) for landscaping activities and vegetation management in the King County Stormwater Pollution Prevention Manual, as amended. These practices include:

1. Never apply pesticides and fertilizers if it is raining or about to rain;
2. Do not apply pesticides within 100 feet of surface waters, such as lakes, ponds, wetlands, streams and stormwater conveyance ditches unless approved and permitted by the Washington State Department of Ecology;
3. Determine the proper fertilizer application for the types of soil and vegetation involved. Follow manufacturers' recommendations and label directions; and
4. Clean up after spills immediately;
5. Use mulch or other erosion control measures when soils are exposed for more than one week during the dry season or two days during the rainy season;
6. Ensure sprinkler systems do not spray beyond vegetated areas resulting in the excess water discharging into the storm drain system;
7. Use of hazardous substances, pesticides and fertilizers in a critical area containing a habitat conservation area must follow state and City standards.

90.XX Structure Setbacks and Buffers Required by Prior Approvals

1. If prior to February 1, 2017, (date of potential adoption) the City approved a variance, planned unit development, rezone, or zoning permit through Processes I, II, IIA, or IIB, as described in Chapters 120, 125, 130, 145, 150, and 152 ZC, respectively, and/or a subdivision or short subdivision for the

subject property with established structure setbacks or buffers on the subject property from a stream or wetland, those setbacks or buffers shall apply only to the initial building permits issued under those zoning permit approvals on the subject property.

2. All provisions of this chapter which do not directly conflict with the previously imposed structure setback or buffer requirements shall fully apply to the subject property.
3. Subsequent building permits and any improvement or disturbance not requiring a permit must meet the provisions of this chapter.
4. Developments approved under prior critical area modification, buffer reduction or buffer averaging permits or reasonable use exceptions prior to February 1, 2017, (date of potential adoption) must apply for new permits under this chapter if any exterior change to the property is proposed that would encroach into the critical area or buffer based on the standards in this chapter.

90. XX Code Enforcement

1. General Standards. A correction plan required for code enforcement shall meet the provisions of this chapter, including the vegetative buffer standards pursuant to KZC 90. ___.
2. Enforcement for Critical Area Violations.
 - a. Unauthorized development activity, use, land surface modification or other disturbances to critical area or buffer shall cease immediately. All disturbances shall be rectified and restored;
 - b. A correction plan must be submitted to the City within 30 calendar days of the enforcement notice from the City in conformance with this chapter;
 - c. The Planning Official may require a critical area report, funded by the property owner, for a delineation and rating of disturbed wetland or determination of the boundary of a disturbed critical area buffer and a survey depending on the extent and nature of the disturbance. The critical area report shall also make recommendations on a restoration plan;
 - d. The Planning Official shall review and approve the correction plan based on the regulations in this chapter and inspect the restoration after installation;
 - e. A monitoring and maintenance plan shall be submitted for approval by the Planning Official pursuant to KZC 90. ___;
 - f. A performance and maintenance/monitoring financial security shall be required for restoration. The security shall be in a form and amount determined by the Planning Official. See KZC 90. ___.
 - g. The correction work shall be completed within 60 calendar days from the date of the enforcement notice, unless otherwise specifically approved by the Planning Official;
 - h. The requirements for a critical area dedication must be met pursuant to KZC 90. ___;
 - i. For repeat violators, the City is authorized to require monitoring and maintenance to extend beyond the inspections schedule pursuant to KZC 90. ___ and funded by the violator; and
 - j. Violations shall be subject to the City's code enforcement procedures and penalties under Chapter 1.12 KMC.

90.XX Dedication of Critical Area and Buffer

1. Dedication.
 - a. The applicant shall dedicate development rights, air space, or grant a greenbelt protection or space easement or tract to the City to protect critical areas and their buffers, including the fish and wildlife conservation area. The dedication shall be on the property title;

- b. Land survey information shall be provided by the applicant for this purpose in a format approved by the Planning Official; and
 - c. The applicant shall record the dedication with the King County Recorder's Office as part of a subdivision recording or prior to issuance of a final inspection or occupancy for all other developments.
2. Critical Area Boundaries Subject to Change. Critical area categories, ratings, classifications and boundaries are subject to change due to amendments to this chapter and/or physical changes to the subject property or vicinity. Subsequent development on a subject property may require a change in the boundary of critical area tract or easement.
3. Removal or Modification of Dedication.
- a. The Planning Director may authorize removal or modification to a recorded critical area dedication, provided that removal or modification does not conflict with any requirement of this chapter or prior approval;
 - b. The applicant shall submit a request in writing along with documentation as to why the dedication should be removed or modified and how the change is consistent with this chapter, along with any required review fee; and
 - c. If the removal or modification is approved, the applicant shall record a document with King County Recorder's Office revising the dedication.

90.XX LIABILITY

Prior to issuance of a land surface modification permit or a building permit, whichever is issued first, the applicant shall enter into an agreement with the City that runs with the property, in a form acceptable to the City Attorney, indemnifying the City from any claims, actions, liability and damages to sensitive areas arising out of development activity on the subject property. The applicant shall record this agreement with the King County Recorder's Office.

90.XX APPEALS

Any decision made by the Planning Official or Planning Director pursuant to this chapter may be appealed using, except as stated below, the applicable appeal provisions of Chapter 145 KZC. If a proposed development activity requires approval through Process IIA or IIB (as described in Chapters 150 and 152 KZC, respectively), any appeal of a classification, determination, or decision will be heard as part of that other process.

90.170 LASPE OF APPROVAL

Planning Official and Planning Director's decisions authorized by this chapter shall be subject to the lapse of approval provisions of KZC 145.115.

Proposed Critical Areas Update –Case Studies

Prepared by The Watershed Company

June 13, 2016

INTRODUCTION

The following four case studies have been developed to inform the City’s review and discussion of the proposed updated critical areas regulations. **These case studies represent theoretical developments.** In the tables below each project has been evaluated under the existing and proposed provisions to provide a comparison and understanding of the outcomes of proposed regulatory changes.

CASE STUDY 1: EXPANSION OF NON-CONFORMING RESIDENTIAL USE

<p>Project Overview</p> <p>The applicant would like to repair and expand the primary residential structure marked with a star. The primary structure is located 20 feet from the mapped edge of the Juanita Bay wetlands, and it is entirely within both the existing and proposed buffers.</p> <p>Although Juanita Bay Wetlands are themselves within shoreline jurisdiction, the wetland buffers are regulated under the CAO.</p>																	
<p>Distinguishing Wetland Characteristics</p> <p>Water quality improvement potential is moderate because there is extensive development and degraded water quality in the basin, but there is also limited water retention capability. Flood control structures and low water retention potentially limit functions associated with flooding and erosion.</p> <p>The potential to provide wildlife habitat is extremely high, based on the complex physical structure (e.g., forested, scrub-shrub, aquatic bed, etc.) and variety of hydrologic regimes (e.g., permanently flooded, seasonally flooded, etc.). At the landscape-scale, habitat is limited by surrounding development.</p>	<table border="1"> <thead> <tr> <th data-bbox="821 1167 935 1230"></th> <th data-bbox="935 1167 1243 1230">Existing</th> <th data-bbox="1243 1167 1429 1230">Proposed</th> </tr> </thead> <tbody> <tr> <td data-bbox="821 1230 935 1293">Wetland Rating</td> <td data-bbox="935 1230 1243 1293">Type 1</td> <td data-bbox="1243 1230 1429 1293">Category 2, Habitat Score 7</td> </tr> <tr> <td data-bbox="821 1293 935 1356">Standard Buffer</td> <td data-bbox="935 1293 1243 1356">100 feet</td> <td data-bbox="1243 1293 1429 1356">165 feet</td> </tr> <tr> <td data-bbox="821 1356 935 1902">Code Requirements</td> <td data-bbox="935 1356 1243 1902">The structure is nonconforming as to the current buffer requirements. As a legally established, nonconforming structure, the applicant could repair and maintain the existing structure [KZC 90.20(6)]. However, reconstruction is not permitted, except in the case of extensive casualty damage [KZC 163.30]. An expansion is not possible because a buffer width can only be reduced by one-third through a reduction process, which is not enough to allow an expansion.</td> <td data-bbox="1243 1356 1429 1902">As a legally established, nonconforming use, the applicant can rebuild on the existing foundation. The applicant would have the following options for expanding the structure: 1) up to 1,000 square feet on the southern side of the house, away from the wetland; 2) up to 500 square feet on the side of the house, but no closer to the wetland than the existing structure; or 3) up to 250 square feet toward the wetland, subject to the minimum setback from the wetland that will be established. Mitigation for buffer impacts would be required.</td> </tr> <tr> <td data-bbox="821 1902 935 1967">Discussion</td> <td colspan="2" data-bbox="935 1902 1429 1967">The proposed changes would allow reconstruction of the primary structure on the same footprint and provide options to add an addition in the buffer.</td> </tr> </tbody> </table>			Existing	Proposed	Wetland Rating	Type 1	Category 2, Habitat Score 7	Standard Buffer	100 feet	165 feet	Code Requirements	The structure is nonconforming as to the current buffer requirements. As a legally established, nonconforming structure, the applicant could repair and maintain the existing structure [KZC 90.20(6)]. However, reconstruction is not permitted, except in the case of extensive casualty damage [KZC 163.30]. An expansion is not possible because a buffer width can only be reduced by one-third through a reduction process, which is not enough to allow an expansion.	As a legally established, nonconforming use, the applicant can rebuild on the existing foundation. The applicant would have the following options for expanding the structure: 1) up to 1,000 square feet on the southern side of the house, away from the wetland; 2) up to 500 square feet on the side of the house, but no closer to the wetland than the existing structure; or 3) up to 250 square feet toward the wetland, subject to the minimum setback from the wetland that will be established. Mitigation for buffer impacts would be required.	Discussion	The proposed changes would allow reconstruction of the primary structure on the same footprint and provide options to add an addition in the buffer.	
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Discussion	The proposed changes would allow reconstruction of the primary structure on the same footprint and provide options to add an addition in the buffer.																

CASE STUDY 1: CONTINUED

Juanita Bay Wetlands, facing northwest. Note diversity of plant communities that provide a wide variety of habitat niches.



Photo 1 (Source: Google Earth)

Juanita Bay Wetlands, facing north. Note interspersed habitat communities.



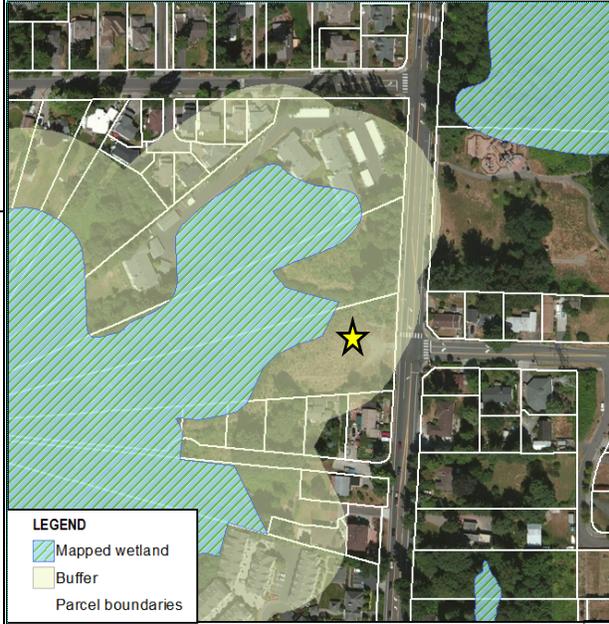
Photo 2 (Source: Google Earth)

Aerial photograph of Juanita Bay Wetlands. Note extensive surround development, which limits habitat connectivity.



Photo 3 (Source: King County iMAP)

CASE STUDY 2: NEW RESIDENTIAL USE

<p>Project Overview</p> <p>The applicant would like to develop an undeveloped residential parcel along Forbes Lake. All but 400 square feet of the parcel is within the proposed wetland buffer.</p>		
<p>Distinguishing Wetland Characteristics</p> <p>Water quality improvement potential is moderate due to the presence of organic soils and extensive development and water quality degradation in the basin. Low seasonal water level variations limit value associated with controlling flooding and erosion, although the potential is high, due to intensive development of the basin.</p> <p>The potential to provide wildlife habitat is extremely high, based on the complex physical structure (e.g., forested, scrub-shrub, aquatic bed, etc.) and variety of hydrologic regimes (e.g., permanently flooded, seasonally flooded, etc.). On the landscape-scale, habitat is limited by surrounding development.</p>		
	<p>Existing</p>	<p>Proposed</p>
<p>Wetland Rating</p>	<p>Type 1</p>	<p>Category 3, Habitat Score 7</p>
<p>Standard Buffer</p>	<p>100 feet</p>	<p>165 feet</p>
<p>Code Requirements</p>	<p>Approximately 12,000 square feet falls outside of the current 100-foot-wide buffer. This may yield enough room for construction of a new residence. However, if additional area were necessary, utilization of the existing buffer reduction mechanism could be used to reduce the standard buffer from 100-feet to a minimum of 66.6-feet [KZC 90.60(2)(a)(2)]. Reduction of the buffer would require enhancement of the remaining reduced buffer. Approval for the buffer reduction would be granted by the City’s Hearing Examiner.</p>	<p>Under proposed buffer standards, nearly the entire parcel would be encumbered. Buffer reduction is not allowed under proposed provisions. Therefore, the new residence would fall under the City’s reasonable use exception (RUE) provision. RUE would allow a disturbance area of up to 8,500 square feet, depending on the size of the property, through a Planning Director decision. Mitigation sequencing would be required.</p>
<p>Discussion</p>	<p>The wider proposed buffer encumbers this lot, meaning that new development would fall under an RUE. A new residential use is allowed under either scenario; however, the RUE would limit the area of disturbance. The RUE process would be simplified from a Hearing Examiner decision to a Planning Director decision. The area of disturbance allowed under an RUE would depend on lot size, with more disturbance allowed on larger lots.</p>	

CASE STUDY 2: CONTINUED

Forbes Lake, facing southeast. Note diversity of plant communities and flooding regimes.



Photo 1

Beaver lodge on Forbes Lake, a reflection of habitat function and variable hydrologic regimes.



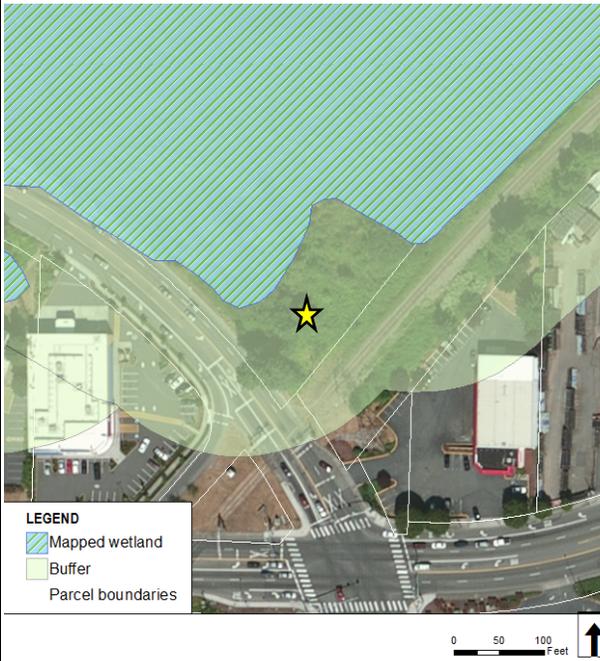
Photo 2

Aerial photograph of Forbes Lake Wetland. Note extensive development in the surrounding landscape.



Photo 3 (Source: King County iMAP)

CASE STUDY 3: NEW OVERPASS STRUCTURE

<p>Project Overview</p> <p>The City would like to construct a new elevated pedestrian walkway in the area marked with a star. The proposed location is 25 feet from the mapped edge of the Totem Lake wetlands, and entirely within both the existing and proposed buffers.</p>		
<p>Distinguishing Wetland Characteristics</p> <p>Totem Lake provides moderate to high levels of water quality functions and very high levels of function related to flooding and erosion, due to its ability to retain stormwater flows and seasonal fluctuations; its large size relative to its contributing basin; and the intense development of the basin.</p> <p>The potential to provide wildlife habitat is moderate, based on physical structure (scrub-shrub, emergent, and aquatic bed) and variety of special habitat features (e.g., snags, woody debris, amphibian egg-laying structures, etc.). On the landscape-scale, habitat is limited by surrounding development.</p>		
	<p>Existing</p>	<p>Proposed</p>
<p>Wetland Rating</p>	<p>Type 1</p>	<p>Category 2, Habitat Score 6</p>
<p>Standard Buffer</p>	<p>100 feet</p>	<p>165 feet</p>
<p>Code Requirements</p>	<p>The proposed work area is nearly entirely encumbered by the standard buffer under existing provisions. The buffer could be reduced from 100-feet to a minimum of 66.6-feet, although this would likely not result in the ability to place the entire structure outside the buffer and associated setback.</p> <p>Any proposed impacts within the wetland itself would require City Council approval. In addition, no more than 5 percent of the total wetland area on the property could be impacted.</p>	<p>The proposed work would require demonstration of mitigation sequencing to avoid, minimize and/or mitigate while still meeting the objective of the project. Approval would be administrative if work is done in the outer 1/4 of the buffer or a Planning Director decision for work in the remainder of the buffer.</p>
<p>Discussion</p>	<p>The existing provisions do not allow this type of improvement in the inner 2/3rds of the buffer. Under the proposed provisions, the project could be approved administratively or through the Planning Director process with mitigation.</p>	

CASE STUDY 3: CONTINUED

Totem Lake facing east. Note diversity and interspersed of different vegetation communities and hydrologic regimes.



Photo 1

Totem Lake facing south. Close proximity of commercial development increased the potential for improving water quality and reducing flooding and erosion; however, it creates habitat fragmentation that hinders wildlife passage.



Photo 2

Aerial photograph of Totem Lake. Note the intense, commercial development in the surrounding landscape.



Photo 3 (Source: King County iMAP)

CASE STUDY 4: COMMERCIAL EXPANSION

ATTACHMENT 2

<p>Project Overview</p> <p>The applicant would like to expand the existing parking and roadway for a commercial property into the critical area buffer. Existing development is entirely outside of the wetland and wetland buffer.</p>		
<p>Distinguishing Wetland Characteristics</p> <p>Slope-type wetlands, such as this have limited ability to perform water quality and hydrologic functions since they cannot retain water for long periods. The limited ability to perform these functions is exacerbated with a lack of dense, low-lying vegetation that can slow water velocities and trap sediments and pollutants.</p> <p>This wetland provides very low habitat function, due to a lack of structural complexity, special habitat features, species diversity, and complete isolation from other habitat areas.</p>		
	<p>Existing</p>	<p>Proposed</p>
<p>Wetland Rating</p>	<p>Type 3</p>	<p>Category 4, Habitat Score 3</p>
<p>Standard Buffer</p>	<p>50 feet</p>	<p>40 feet</p>
<p>Code Requirements</p>	<p>Because the wetland is larger than 1,000 SF, wetland buffers apply. If necessary, a portion of the buffer could be reduced from 50-feet to a minimum of 33-feet. This could occur through buffer averaging or buffer reduction. Averaging would require an equivalent expansion of the buffer elsewhere and vegetation enhancement, whereas reduction would require that the remaining reduced buffer be enhanced. Avoidance and minimization efforts would not need to be demonstrated as part of a buffer modification. Approval for averaging or reduction would be obtained administratively.</p>	<p>Because the wetland is larger than 1,000 SF, wetland buffers apply. Under the proposed changes, the required buffer width would be 10 feet less than the current code. The applicant would need to work through mitigation sequencing. This may include identifying opportunities to reposition or reconfigure parking areas (avoidance), employing LID techniques (minimization), and mitigating for unavoidable impacts. The applicant could propose buffer averaging to reduce the width to a minimum of 75% of the standard buffer (30 feet wide), but must widen the buffer in other areas so that the total area before the reduction is provided and it is enhanced to meet vegetation standard. The permit process is administrative.</p>
<p>Discussion</p>	<p>In some cases such as this example of a lower quality wetland, the proposed regulations will result in a reduction in the standard buffer width and minimal change in how the site could be developed. Mitigation sequencing is an important proposed requirement to ensure that impacts to critical areas and their buffers are avoided and minimized to the greatest extent feasible.</p>	

CASE STUDY 4: CONTINUED

Totem Lake Mall Wetland, facing east. Note lack of dense groundcover that can reduce stormwater velocities and trap sediments and pollutants.



Photo 1

Totem Lake Mall Wetland, facing northeast. Note moderately steep gradient and preponderance of invasive vegetation (e.g., English holly and Himalayan blackberry).



Photo 2

Aerial photograph of wetland. Note the complete isolation from other habitat areas by high-intensity land uses.



Photo 3 (Source: King County iMAP)