CITY OF KIRKLAND
123 Fifth Avenue, Kirkland, WA 98033 425.587.3000
www.ci.kirkland.wa.us

MEMORANDUM

To: Houghton Community Council

From: Stacy Clauson, Contract Planner
Teresa Swan, Senior Planner
Paul Stewart, Deputy Director of Planning

Date: May 13, 2009

Subject: Kirkland's Shoreline Master Program Update (SMP)
File No. ZON06-00017

TABLE OF CONTENTS

Section	Topic	Page #
I.	Recommendation	1-2
II	Introduction	2-3
III.	Planning Commission Recommended Changes	3-9
IV.	Shoreline Use Standards	9-13
V.	Shoreline Modifications	13-19
VI.	General Regulations	19-21
VII.	Authority and Purpose	21
VIII.	Administration	21-22
IX.	Restoration Plan	22-23
X.	Cumulative Impact Analysis	23-24
XI.	Next Steps and Review Process	24
XII.	Public Comments	24
XIII.	Attachments	24-25

I. RECOMMENDATION

- Overview key recommended changes from the Planning Commission meeting on April 23, 2009 (see Section III starting on page 3). This includes an overview of feedback from meetings with shoreline property owner's focus group, as well as

changes made in response to suggestions raised at these meetings (see Section III starting on page 3).

- Review and provide feedback on shoreline use standards for specific shoreline uses (see Section IV starting on page 9). This is a continuation of the review that was started on March 23, 2009.
- Review and provide feedback on shoreline modification standards (see Section V starting on page 13). T his is a continuation of the review that was started on March 23, 2009.
- Review and provide feedback on shoreline nonconformance provisions (see Section VI on page 19).
- Review and provide feedback on authority and purpose provisions (see Section VII on page 21).
- Review and provide feedback on shoreline administration provisions (see Section VIII on page 21).
- Review and provide feedback on the draft Restoration Plan (see Section IX on page 22).
- Review and provide feedback on the Cumulative Impact Analysis (see Section X on page 23).
- Overview next steps and review process (see Section XI on page 24).

II. INTRODUCTION

An overview of the status of review of the different Sections of the Shoreline Master Program is provided in Attachment 1. This table provides a synopsis of the different components of the SMP and what areas have been completed and what is left to be reviewed by the Houghton Community Council.

At the March 23rd meeting, the Houghton Community Council began review of shoreline development standards, including shoreline setbacks and lot coverage for the Residential M/H, Urban Mixed, and Urban Conservancy environments. Information in response to Council comments on these issues is provided in Section III below.

Houghton Community Council review is now needed on sections that have yet to be discussed , including shoreline uses and some of the shoreline modification provisions. These were originally included in the March 23, 2009 packet, but were not discussed by the Council. Review is also needed of changes that have been recommended by the Planning Commission in response to on-going discussions with a group representing shoreline property owners. Since the March 23, 2009 meeting, the Planning Commission and property owners have met at a public meeting and had an open dialogue about concerns and potential suggestions for changes to the proposed Shoreline Master Program. Several of the key issues that came out of this meeting as well as Planning Commission direction for changes are summarized in Section IV below.

Further, review is needed on the Restoration Plan, another key component of the Shoreline Master Program. Finally, a preliminary draft of the Cumulative Impact Analysis has been

included to serve as an overview of the proposed regulations as well as an analysis of the regulations under the principles of no net loss.

For the May 20th meeting, staff would recommend reviewing the following:

1. Revisions to key regulations based on the Planning Commission's direction (see Section III starting on page 3).
2. Shoreline use standards (see Section IV starting on page 9).
3. Shoreline modification regulations (see Section V starting on page 13).
4. Shoreline nonconformance draft standards (see Section VI on page 19).
5. Shoreline authority and purpose (see Section VII on page 21).
6. Shoreline administration procedures (see Section VIII on page 21).
7. Draft Restoration Plan (see Section IX on page 22).
8. Draft Cumulative Impact Analysis (see Section X on page 23).

III. PLANNING COMMISSION RECOMMENDED CHANGES

In follow-up to the workshop that was held on February 28th, on April 9th the Planning Commission held a focus group meeting with shoreline property owner's who agreed to participate in a small group session to discuss concerns and issues on the update to the Shoreline Master Program. The purpose of the meeting was to get a better understanding of the issues unique to living next to Lake Washington and to identify approaches for policies and regulations that provide an appropriate balance between the protection of ecological functions and the use and enjoyment of property. (Note: An additional subsequent meeting was held with property owners within the Shoreline Residential – L environment to focus on issues of particular concern to this group not within the HCC jurisdictional area).

At the meeting, the Planning Commission and shoreline property owners discussed a number of topics, including no net loss, the status of the science, nonconformances, shoreline stabilization, and piers. The following is an overview of the discussion on several of the key issues, as well as the Planning Commission direction for changes to be made in response to these provisions.

1. No Net Loss.

a. Shoreline property owner feedback.

The shoreline property owners shared their impressions that the **existing rules were sufficient in achieving no net loss**. This was based on their view of many projects that have taken place along the shoreline where improvements have been made, such as to new piers which replaced earlier piers and used improved materials.

b. Staff response:

i. Staff concurs that many of the examples cited by the property owners were improvements to existing conditions. It should be noted that the improvements that were mentioned (such as the use of grating on a deck, fewer pilings, pilings made of steel, etc.) are not provisions that came out of the implementation of the current City regulations. These were standards imposed by the state and federal agencies that also have review authority over in-water or overwater structures.

The City's current regulations have been in place for over 30 years, and have not been revised to reflect the improved design and material selections that have been incorporated into pier and shoreline stabilization design over the last several years. As part of the City's obligations under the new SMP Guidelines, we **need to amend and update our regulations so that our local standards also address development and include these or similar provisions to ensure that the local SMP meets the obligations of *no net loss*, as well as other standards addressed in the State Guidelines**.

An initial evaluation of the SMP and the adequacy of provisions within it to meet obligation of no net loss is contained in Attachment 6 (Draft Cumulative Impact Analysis). Please note that this is an initial draft that will likely continue to be amended if changes are made to the provisions.

2. Science.

a. Shoreline property owner feedback:

i. There were continuing **questions about the soundness of the science** on which many of the regulations are based.

b. Staff response:

i. Staff has previously responded to this issue and wants to reiterate its position on this issue. The State Guidelines state that SMPs should "At a minimum, make use of and, where applicable, incorporate all available scientific information, aerial photography, inventory data, technical assistance materials, manuals and services from reliable sources of science. Local governments should also contact relevant state agencies, universities, affected Indian tribes, port districts and private parties for available information." The Guidelines also direct governments to "Recognize and take into account state agencies' policies, programs, and recommendations in developing use regulations." Please see provisions in WAC 173-26-201(2)(a) for more information: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-26-201

The **City is utilizing the available scientific information and agency recommendations** developed by scientists in state and federal government and from the University of Washington. It is certainly true

that our knowledge of issues continues to evolve as additional scientific studies are completed and findings are shared and vetted among peers in the scientific community – this is the nature of scientific research.

However, that does not relieve the City of the **obligation to use the scientific information that is available** and has resulted in an understanding by the scientific community that shoreline modifications, such as piers and bulkheads, have adverse affects on ecological functions and shoreline processes, as well as on sensitive fish species.

It is also important to note that staff has focused on studies related to Chinook salmon as these fish species is a good indicator of ecological functions. Ultimately, though, the SMP Update is interested in ensuring that shoreline ecological functions and processes are protected system-wide.

Finally, the SMP contains **no requirement for the City to initiate scientific research in support of its SMP**. This was one area of concern that was negotiated when the State Guidelines were approved in their final form in 2003.

ii. Staff has forwarded the letter submitted by Mr. Sandaas to those involved in scientific research, including representatives from NOAA Fisheries, The Fish and Wildlife Service, WRIA 8 and the University of Washington.

3. Nonconformance provisions (see Section 83.510 of Attachment 2).

a. Shoreline property owner feedback:

i. There were concerns expressed that **additions or redevelopment to nonconforming development could not occur without mitigation**.

ii. There were concerns about the **lack of clarity** in the provisions – how would this affect maintenance, modifications, or remodels?

b. Planning Commission Direction:

i. The Planning Commission completed an initial review of the draft nonconformance provisions at their April 23rd meeting. The draft regulations respond to some of the concerns about the lack of clarity by providing specific provisions addressing nonconformances. A more complete overview of the provisions is contained in Section VI below. In geneal, it should be noted that the provisions contain:

1. **Authority and ability to remodel existing structures or repair damage;**
2. **Broad allowance for replacement of structures damaged by fire or other casualty;**
3. **Provisions allowing replacement of existing nonconforming structures on constrained lots; and**
4. **Provisions for minor additions to nonconforming structures**.

4. Regulatory flexibility.

At the meeting, staff raised several questions about whether shoreline property owners would be interested in exploring changes to other provisions (e.g. front yard setbacks) as a result of increases in the shoreline setback. The goal of these changes would be to provide greater flexibility than current regulations as a result of an increased shoreline setback.

a. Planning Commission Direction:

i. The Planning Commmission expressed interest in evaluating potential changes, depending upon the final resolution of proposed shoreline setbacks. Most of the changes being explored would pertain to areas outside of Houghton. However, there are two provisions that staff is exploring amending or deleting that would apply within the Hougton area. **Staff would like to get feedback from the Houghton Community Council on the following issues**:

1. Staff would like to explore **eliminating the north property line requirement in the WD I and WD III zones** which requires a structure to be setback from the north property line by 1-1/2 times the height of the primary structure above average building elevation minus 10 feet. There are a **number of problems with this existing requirement**, as follows:
   a. This requirement results in a stepped building form which would create a view corridor; as such, it is **redundant to the view corridor requirements**, which require 30% of the site to be retained as a view corridor.
   b. This provision can also impose **additional constraints** on a property if the view corridor is imposed on the south property line, if that property line has the better view advantage.
   c. There have been a **number of variances** requested to this provision, due to a number of narrow lots. For instance, with a residence that is 25 feet in height, the building form would need to be stepped back by 27.5 feet from the north property line under these requirements. On a 60 foot wide lot, this would leave only 22.5 feet of building width, after the 10 foot wide south property line was applied.

2. Staff would like to **evaluate whether the current provision in the WD I and WD III zones that permits the front yard to be reduced one foot for each one foot of this yard that is developed as a public use area could be expanded to also allow the front yard to be reduced in circumstances where the shoreline setback is increased over existing built conditions**. This would provide relief for property owners who

setback farther from the shoreline. The current minimum front required yard in these zones is 30 feet.

Staff would recommend that the Houghton Community Council discuss the proposed revisions to the north property line and front required yards and provide a recommendation to the Planning Commission on these proposed changes.

5. **Shoreline Stabilization (see Section 83.290 of Attachment 2).**
   a. Shoreline property owner feedback:
      i. There were continuing **concerns expressed about the feasibility of softer approaches** along Kirkland's shoreline.
      ii. There were also concerns about the **lack of clarity in the regulations**. Terminology used relied upon a lot of discretion and there was a desire expressed for more predictability in the requirements.
      iii. There was desire expressed for **improvements to be located waterward of the ordinary high water mark**, so that property owners did not need to convert yard area to beach area as part of a softer alternative. A concept drawing of this idea is provided on page 2 of Attachment 15.

   b. Staff comments:
      i. **Softer approaches are not required to be used if they are demonstrated to not be feasible**. However, the requirement for analysis of softer approaches must be included in the updated SMP. The shoreline stabilization provisions contained in WAC 173-26-231(3)(a) (http://apps.leg.wa.gov/WAC/default.aspx?cite=173-26-231) contain specific standards addressing replacement bulkheads or similar stabilization structures, requiring use of alternative shoreline protection measures, such as soft approaches, unless these measures are demonstrated not to be sufficient to protect primary structures, dwellings, and businesses.

      ii. Staff concurs that language should be clear and will review and **recommend changes to address any issues of clarity** and recommends that the Houghton Community Council identify specific areas of concern where changes can be made.

      iii. Under the current federal regulatory framework, **there are limitations as to the extent to which improvements located landward of the ordinary high water mark will be permitted** within the lake.

      Under the federal Programmatic Biological Evaluation (PBE) issued for shoreline protection alternatives in Lake Washington, gravel beach fill is permitted to be placed in front of the existing bulkhead (covering the rip rap), to a slope of 1V:4H or flatter, but the fill needs to occur at or below

the 21.85 foot elevation (the ordinary high water level for the Lake). Under this PBE, more than 2 cubic yards of gravel fill per lineal foot at or below the 21.85 foot elevation requires review by the Corps of Engineers.

The draft regulations do address placement of materials waterward of the bulkhead, consistent with the approaches noted in the PBE. Also, it was noted that property owners might find the proposed setback reductions more viable, if they included options which allowed property owners to still incorporate a bulkhead, with fill material in front of the bulkhead or the bulkhead setback from the ordinary high water mark. These options are proposed to be included in the standards (see Section 7 below).

6. **Piers (see Section 83.280 of Attachment 2).**
   a. Shoreline property owner feedback:
      i. There were concerns that the **new standards inappropriately include standards similar to RGP-3 standards**.
      ii. There were concerns expressed about proposed standards for **replacement piers**.

   b. Staff response:
      i. The **current approach allows the applicant to pursue one of two options relating to replacement piers**: Track 1 replacement piers that comply with standards based on RGP 3 standards (RGP 3 is not specifically referred to in the draft regulations) may be quickly approved.

      For Track 2, if the applicant obtains both state and federal approval for an alternate pier design, the City would also allow that replacement pier without requirements for additional study. However, because of Ecology's ongoing emphasis on providing dimensional standards, this second track includes some "backstops" (such as maximum alternate pier width) that enable reasonable quantitative calculation of cumulative impacts under a possible "worst-case" scenario.

   c. Planning Commission Direction: The Planning Commission has reviewed this issue and has not recommending any changes at this time.

7. **Other Changes.** In addition to the issues raised by shoreline property owners, the Planning Commission has reviewed and recommended changes to the following key provisions:
   - **Shoreline Vegetation (see Section 83.370 of Attachment 2).**
     - The Planning Commission recommended using an approach that was similar to the current approach toward tree retention, where **up to two trees on a property can be removed on a yearly basis**. The Planning Commission did recommend that **replanting** be completed as a standard for tree removal, in order ensure that there is no net loss of ecological functions.

- The Planning Commission recommended changes to the **alternative planting provisions** to provide better clarity on when replanting requirements may be modified.

- **Shoreline setback reductions (see Section 83.360 of Attachment 2).**
  - The Planning Commission recommended that additional reduction measures be provided, including:
    a. A reduction mechanism that would address **retention of existing natural shoreline conditions** (e.g. sites without shoreline stabilization structures).
    b. A reduction mechanism that would address **shifting the bulkhead landward and/or sloping the bulkhead landward** to provide some dissipation of wave energy and increase the quality or quantity of nearshore shallow-water habitat.
    c. A reduction mechanism that would address **increasing shallow-water habitat.**

For the above items, staff would recommend that the Houghton Community Council discuss the issues raised during the shoreline property owner's focus group meeting and provide comments to the Planning Commission. Staff would also recommend that the Council consider the other changes recommended by the Planning Commission and provide comments on these provisions.

IV. SHORELINE USE STANDARDS

1. Shoreline Development Standards. These standards (see Section 83.360 and 83.370) were initially reviewed by the Houghton Community Council at their March 23, 2009 meeting. The Houghton Community Council did express concerns with some of the provisions, including new shoreline setbacks and shoreline vegetation standards, summarized as follows:

- Shoreline setbacks. Members expressed general **concerns about the proposed increase in shoreline setbacks** that are proposed, particularly concerns about the increase in impacts to shoreline property owners. The Houghton Community Council has requested additional analysis on the extent of nonconformances that the proposed setbacks might create.

  Staff Response: Staff has worked with the GIS Department to prepare some general overview maps depicting approximation of new setback standards. A copy of this map is included as Attachment 7. (Note: Actual setbacks may vary depending upon more accurate survey information detailing lot depth).

  In addition, revisions to the nonconformance provisions have been made since this material was last brought to you for the March 23, 2009 meeting. In the proposed nonconformance provisions, several sections have been included to provide for additional flexibility for additions to or replacement of nonconforming structures.

- Shoreline setback reductions. The Houghton Community Council indicated that **additional reductions** should be evaluated for inclusion, including an incentive for planting trees.

  Staff Response: As noted above, these draft provisions have been revised to include additional setback reduction options. Please see Section 83.360.

- Shoreline vegetation. The Houghton Community Council continued to express **concerns about vegetation standards** proposed in the draft regulations. The Houghton Community Council indicated that the approach taken in the draft regulations is too overbearing.

  Staff Response: The riparian vegetation standard is a key provision contained in the new regulations to offset impacts to shoreline ecological functions from redevelopment of greater intensity or impact (e.g. development located closer to the shoreline with corresponding light, noise, and water quality impacts or development with increased lot coverage on the property, etc.). To provide for greater flexibility, provisions are included which allow for a deviation from the standard riparian vegetation standard, with submittal and approval of an alternative mitigation standard that will provide equivalent functional benefits as the standard vegetation component. See Section 83.360 for more information.

  In addition, as noted above, the Planning Commission has recommended changes to the tree retention requirements, retaining standards that are similar to current provisions allowing up to two trees to be removed from a property within a year. The Planning Commission has recommended a replanting requirement in order to ensure that there is no net loss in ecological functions. Please see Section 83.370.

For the above items, staff would recommend that the the Houghton Community Council discuss the issues and determine whether the Council has any additional comments to transmit to the Planning Commission.

2. <u>Other Shoreline Use Standards</u>

The draft regulations in Attachment 2 contain provisions that will be applied to specific uses. Provided below is a summary of each issue, input from the public (if any), options to consider (if there are different policy options), together with a staff recommendation, if needed.

1. **Residential Uses** (see Section 83.200 in Attachment 2)**.**

<u>Key Issues:</u> None.

<u>Background</u>: The State Guidelines addressing residential uses are contained in WAC 173-26-241(3)(j) and focus on assuring no net loss of shoreline ecological functions will result from residential development, including include specific regulations for setbacks and buffer areas, density, shoreline armoring, and vegetation conservation requirements.

<u>Proposed Regulations</u>: See Attachment 2

2. **Commercial Uses** (see Section 83.210 in Attachment 2)**.**

Key Issues: New standards for **float plane** landing and mooring facilities.

Background: The State Guidelines addressing commercial uses are contained in WAC 173-26-241(3)(d) and focus on:

- Giving preference to water-dependent commercial uses over non-water-dependent commercial uses; and second, giving preference to water-related and water enjoyment commercial uses over non-water-oriented commercial uses.

- Requiring that public access and ecological restoration be considered as potential mitigation of impacts to shoreline resources and values for all water-related or water-dependent commercial development unless such improvements are demonstrated to be infeasible or inappropriate.
- Assuring that commercial development will not result in a net loss of shoreline ecological functions or have significant adverse impact to other shoreline uses, resources and values provided for in 90.58.020 RCW such as navigation, recreation and public access.

Proposed Regulations: See Attachment 2.

3. **Industrial Uses** (see Section 83.220 in Attachment 2).

Key Issues: None.

Background: The State Guidelines addressing industrial uses are contained in WAC 173-26-241(3)(f) and focus on:

- Giving preference to water-dependent industrial uses over non-water-dependent industrial uses; and second, giving preference to water-related industrial uses over non-water-oriented industrial uses.
- Assuring that industrial development will be located, designed, or constructed in a manner that assures no net loss of shoreline ecological functions and such that it does not have significant adverse impacts to other shoreline resources and values.
- Incorporating public access as mitigation for impacts to shoreline resources and values unless public access cannot be provided in a manner that does not result in significant interference with operations or hazards to life or property.

Proposed Regulations: See Attachment 2.

4. **Recreational Uses** (see Section 83.230 in Attachment 2)**.**

Key Issues: New standards for **tour boat facilities** and **boat launches**.

Background: The State Guidelines addressing recreational uses are contained in WAC 173-26-241(3)(i) and focus on:

- Assuring that shoreline recreational development is given priority and is primarily related to access to, enjoyment and use of the water and shorelines of the State.
- Assuring that the facilities are located, designed and operated in a manner consistent with the purpose of the environment designation in which they are located and such that no net loss of shoreline ecological functions or ecosystem-wide processes results.

Proposed Regulations: See Attachment 2.

5. Transportation Facilities (see Section 83.240 in Attachment 2)**.**

Key Issues: New standards for **water taxis** and **passenger only ferry terminals**. New standard regarding the Section and placement of **street tree** to address protection of public views from the adjacent rights-of-way.

Background: The Guidelines addressing transportation facilities are contained in WAC 173-26-241(3)(k) and focus on:

- Planning, locating, and designing proposed transportation and parking facilities where routes will have the least possible adverse effect on unique or fragile shoreline features, will not result in a net loss of shoreline ecological functions or adversely impact existing or planned water-dependent uses. Where other options are available and feasible, new roads or road expansions should not be built within shoreline jurisdiction.

Proposed Regulations: See Attachment 2. Regarding street trees, the proposed regulations address tree selection and placement and note that street trees shall be selected and located so that they do not impair public views of the lake from properties east of the roadway.

The Houghton Community Council had a discussion last year about protecting private views. However, in the past the City Council has taken the policy position that private views are not to be protected. The Comprehensive Plan reflects this policy decision in the Community Character Element Policy CC-4.5 and the Transportation Element Policy T-6.3 in which it is stated that public views are protected, but not private views.

6. Utilities (see Section 83.250 in Attachment 2)**.**

Key Issues: None.

Background: The Guidelines addressing utilities are contained in WAC 173-26-241(3)(l) and focus on:

- Ensuring that utility facilities are designed and located to assure no net loss shoreline ecological functions, preserve the natural landscape, and minimize conflicts with present and planned land and shoreline uses while meeting the needs of future populations in areas planned to accommodate growth.

- Limiting utility production and processing facilities, such as power plants and sewage treatment plants, or parts of those facilities that are non-water-oriented.
- Limiting transmission facilities for the conveyance of services, such as power lines, cables, and pipelines, to outside of the shoreline area where feasible.
- Locating utilities in existing rights of way and corridors whenever possible.
- Limiting development of pipelines and cables on tidelands.

Proposed Regulations: See Attachment 2.

7. **Land Division** (see Section 83.260 in Attachment 2)**.**

Key Issues: New standards for land division added to SMP.

Background: The State Guidelines addressing land division are contained in WAC 173-26-241(3)(i) and focus on:

- Providing standards for the creation of new residential lots through land division that accomplish the following:
  - Public access is provided where it could not be required without the division of land.
  - Plats and subdivisions must be designed, configured and developed in a manner that assures that no net loss of ecological functions results from the plat or subdivision at full build-out of all lots.
  - Prevent the need for new shoreline stabilization or flood hazard reduction measures that would cause significant impacts to other properties or public improvements or a net loss of shoreline ecological functions.

Proposed Regulations: See Attachment 2.

Houghton Community Council: Does the Houghton Community Council have any questions on the draft use standards contained in Attachment 2 or comments to transmit to the Planning Commission?

V. SHORELINE MODIFICATIONS

The regulations in Attachment 2 contain provisions that will apply to typical structures and activities that modify the shoreline environment. Provided below is a summary of the key issues, input from the public or Planning Commission (if any), options to consider (if there are different policy options), together with a staff recommendation, if needed.

1. **Piers, Docks, Floats and Boatlifts** (see Section 83.280 in Attachment 2)**.**

Key Issues: Dimensional standards for new piers. Standards for replacement piers. Standards for repair activities.

Background: The State Guidelines addressing piers are contained in WAC 173-26-241(3)(b) and focus on assuring no net loss of shoreline ecological functions, as well as the following:

i. **Allowed** only for:

   1. **Water dependent use (including single-family docks)**
   2. **Public access**

ii. Permitted only when the applicant has demonstrated that a specific **need** exists to support the intended water-dependent use (except single-family)

iii. **Minimum size** necessary to meet the needs of the proposed water-dependent use

iv. New residential development of two or more dwellings to provide **joint use** or community dock facilities, when feasible, rather than allow individual docks for each residence

v. Piers and docks shall be designed and constructed to **avoid or, if that is not possible, to minimize and mitigate the impacts to ecological functions.**

vi. Master programs should require that structures be made of **materials** that have been approved by applicable state agencies.

(Note: Please see your February 23rd packet for more background information).

Houghton Community Council Input**:**

i. The Houghton Community Council recommended that for new piers, **additional pier area** be provided to enable property owners with shallow water depth to exceed the area limitations imposed by the RGP-3 standards.

   Staff Response: The proposed draft provides greater flexibility in area, if additional area is needed to reach a greater water depth (see Attachment 2, Section 83.280).

ii. The Houghton Community Council recommended that the maximum **walkway width standard** for new piers be increased to 5 feet.

   Staff Response: Staff has recommended the 4-foot walkway standard for new piers in order to:
   - Respond to State Guideline direction to minimize the size of structures.
   - Be consistent with RGP-3 provisions which require a 4-foot maximum walkway width.

   Planning Commission Direction: The Planning Commission has reviewed the feedback from the Houghton Community Council and is recommending that the 4-foot standard be used. Please note that this standard would only apply to new piers (of which there is capacity for only approximately 25 additional piers within the City) and extensions of existing piers (only the portion to be extended). Replacement piers would have the option of negotiating with federal and state

agencies for an alternative pier size which, if approved, would be accepted by the City.

iii. The Houghton Community Council requested visual studies to better evaluate the potential visual impacts of multiple boatlift canopies that could be installed at piers designed for multiple residences.

Staff Response: Please see Attachment 3 which provides some **visual examples** of boat lift canopies.

Planning Commission Direction: The proposed regulations for piers serving attached and stacked dwelling units allow up to 10% of the units to have a boatlift canopy, with a minimum of 2 boatlifts allowed for smaller complexes. Boatlift canopies would not be permitted for commercial or public piers or marinas.

iv. The Houghton Community Council expressed concerns about the **thresholds proposed for distinguishing between pier replacement and pier repair activities** (60% of pilings or 60% of substructure modified over a 5-year time frame would be considered as replacement rather than repair).

Staff Response: Please see proposed language in Attachment 2, Section 83.280. These provisions can be difficult to establish. This provision is intended to ensure that improvements occurring over a several year span be considered cumulatively and improvements made, where possible.

Public Input**:** The City has received significant public input on pier regulations. Staff recommends reviewing previous public comments. Generally, there have been concerns expressed that the regulations be flexible to provide property owners with options to pursue alternative designs that may be approved by other federal and state agencies who, along with the City, review proposals for piers. In addition, there have comments that the regulations should allow property owners to replace their existing piers with piers of the same area and dimensions.

Proposed Regulations: See Attachment 2, Section 83.280.

Houghton Community Council: Does the Houghton Community Council have any questions on the draft pier standards contained in Attachment 2 or comments to transmit to the Planning Commission?

2. Marinas (see Section 83.290 in Attachment 2)**.**

Key Issues: **Dimensional standards** for marinas.

Background: The State Guidelines addressing breakwaters, jetties and groins are contained in WAC 173-26-241(3)(c) and focus on assuring no net loss of shoreline ecological functions, as well as the following:

(i) Location at suitable sites, considering environmental conditions, shoreline configuration, access, and neighboring uses.

(ii) Compliance with health, safety, and welfare requirements.

(iii) Including regulations to avoid, or if that is not possible, to mitigate aesthetic impacts.

(iv) Provisions for public access in new marinas.

(v) Regulations to limit the impacts to shoreline resources from boaters living in their vessels (live-aboard).

(vi) Regulations that assure that the development of boating facilities, and associated and accessory uses, will not result in a net loss of shoreline ecological functions or other significant adverse impacts.

(vii) Regulations to protect the rights of navigation.

(viii) Regulations restricting vessels from extended mooring on waters of the state except as allowed by applicable state regulations and unless a lease or permission is obtained from the state and impacts to navigation and public access are mitigated.

Many of the standards contained in the proposed regulations are found in the City's existing SMP, with the exception of dimensional standards proposed for piers associated with marinas. In order to prepare the standards proposed, staff evaluated a recently approved extension of a marina within Kirkland to determine the width of walkways and fingers – the proposed standards are consistent with this previously approved project.

Proposed Regulations: See Attachment 2.

Houghton Community Council: Does the Houghton Community Council have any questions on the draft marina standards contained in Attachment 2 or comments to transmit to the Planning Commission?

3. **Shoreline Stabilization** (see Section 83.300 in Attachment 2)**. (Note: These draft regulations were reviewed by the Houghton Community Council at your February 23rd meeting).**

Proposed Regulations: See Attachment 2.

Houghton Community Council Input**:** The Houghton Community Council recommended that the requirement for trees to be included in the mitigation planting standard be eliminated (see Attachment 2, Section 83.280).

Staff Response: While staff understands the concerns about trees and the potential for impacts to view issues, the tree standard has been recommended for several reasons, as follows:

- This provision only applies to new or expanded piers, but does not apply to replacement piers. This is because new or expanded piers introduce new

impacts that need to be mitigated for. Due to the developed nature of Kirkland's shoreline, it is anticipated that most requests will be to replace existing piers.

- Mitigation planting plans required under the RGP-3 standard include a standard that at least two native trees and three willow plants be included in the planting plan. Under this standard, planting density and spacing should be commensurate with spacing recommended for each individual species.

- The provisions include an allowance for submittal of an alternative plan that can be negotiated with state and federal agencies. If this alternative plan were not to include trees, the City would accept it under these provisions.

- Trees provide ecological functions that shrubs and groundcover alone do not perform, including providing perch habitat for birds, more effective shoreline stabilization through their root systems, temperature moderation in some circumstances, as well a source of large woody debris input into the lake. Trees can also provide more effective screening between upland light and activity disturbances and the lake.

Planning Commission Direction: The Planning Commission has reviewed this provision and the feedback from the Houghton Community Council and has not recommended a change at this time.

Houghton Community Council: Does the Houghton Community Council have any questions on the draft shoreline stabilization standards contained in Attachment 2 or comments to transmit to the Planning Commission?

4. Breakwaters/jetties/groins (see Section 83.310 in Attachment 2)**.**

Key Issues: None.

Background: The State Guidelines addressing breakwaters, jetties and groins are contained in WAC 173-26-231(3)(d) and focus on assuring no net loss of shoreline ecological functions. The Guidelines and the proposed regulations limit the shoreline environments in which these types of structures may be approved, and prohibit them from use for any other purpose than protection of "water-dependent uses, public access, shoreline stabilization, or other specific public purpose." Most of the standards contained in the proposed regulations are found in the City's existing SMP.

Proposed Regulations: See Attachment 2.

5. Dredging and dredge materials disposal (see Section 83.320 in Attachment 2)**.**

Key Issues: **Slightly more restrictive standards for dredging**. Proposed regulations do not allow dredging to accommodate new uses, just to maintain existing uses or implement a restoration project.

Background: The State Guidelines addressing dredging and dredge material disposal are contained in WAC 173-26-231(3)(f) and focus on assuring no net loss of shoreline ecological functions. Dredging projects have the potential for the following impacts:

- re-suspend contaminants that may be contained in the soil
- disturb substrates that have established aquatic vegetation
- disturb or harm invertebrates and fish that may be present in the substrate, and
- may cause short-term but acute turbidity problems

Accordingly, dredging is allowed only for specific purposes, such as maintenance of existing navigation channels, restoration, maintenance of existing boat moorage (both public and private), and maintenance of other water-dependent or public uses. To establish that the dredging is implemented to minimize impacts and is the minimum extent necessary, the proposed regulations include a requirement for submittal of a detailed plan and may require special studies to assess contaminant levels in the material to be disturbed. Placement of dredged materials into the lake is tightly controlled.

Proposed Regulations: See Attachment 2.

6. Land Surface Modification (see Section 83.330 in Attachment 2)**.**

Key Issues: More restrictive standards for land surface modification activities on upland property.

Background: The State Guidelines do not specifically address land surface modification, but do focus on the use of clearing and grading regulations as one of the techniques that should be used as part of shoreline vegetation management.

Proposed Regulations: The proposed regulations focus on **limiting potential impacts from land surface modification within the shoreline setback** area by narrowly scoping the permitted land surface modifications activities in this area (see Attachment 2). This is similar to current provisions contained in the SMP, which limit land surface modification within the high waterline yard to 1) improvements by a public agency to public safety, recreation, or access, 2) part of a development and to improve access to a pier, dock or beach, 3) necessary to provide public pedestrian access or a public use area, 4) necessary for the structural safety of a structure, 5) restoration of shoreline as a result of erosion (see Attachment 9). Under the current standards, vegetation removal within the shoreline setback was not regulated by the City. The new provisions propose additional standards that would limit removal of native vegetation or vegetation installed as part of an enhancement plan. The new standards also address potential erosion and drainage impacts.

7. Fill (see Section 83.340 in Attachment 2)**.**

Key Issues: None.

Background: The State Guidelines addressing fill are contained in WAC 173-26-231(3)(c) and focus on assuring no net loss of shoreline ecological functions. Circumstances in

which fill are allowed are limited to those fills associated with water-dependent or public access uses, to accommodate certain transportation corridors, and for restoration. These regulations actually expand the circumstances where fill may be allowed, accommodating fills for soft shoreline stabilization or restoration purposes.

Proposed Regulations: See Attachment 2.

Public Input: A number of citizens and those with interest in Kirkland's shoreline have requested that the existing SMP be revised to allow private fills that would enable alternative shoreline stabilization or restoration. At least one citizen was precluded from implementing a restoration project as a result of provisions in the existing SMP. State and federal agencies with jurisdiction on Lake Washington have been approving and encouraging these types of fills for several years as a means to improve ecological functions.

8. Shoreline habitat and natural systems enhancement projects (see Section 83.350 in Attachment 2)**.**

Key Issues: None.

Background: This is a new SMP Section, and is addressed in the State Guidelines under WAC 173-26-231(3)(g). This Section is designed to provide a clear and simple path for permitting and approval of projects specifically intended for the primary purpose of "establishing, restoring, or enhancing habitat for priority species in shorelines." A number of enhancement actions are covered under this Section, including native vegetation establishment, removal of non-native vegetation, conversion of hard structural shoreline stabilization to soft shoreline stabilization, implementation of projects identified in the Restoration Plan that will be prepared as part of this SMP, and implementation of any projects identified in the WRIA 8 documents. Many of these projects may qualify for a Shoreline Exemption while others will require a Shoreline Substantial Development permit.

Proposed Regulations: See Attachment 2.

Public Input: Respondents to the survey indicated that a preferred method for the City to encourage restoration is to reduce review time – processing restoration projects as Exemptions or Substantial Developments will help enable this. Prior to creation of this Section, some projects might have required a CUP because of fill activity that might have been proposed landward of the ordinary high water mark. This Section enables these projects to be reviewed as enhancement of the shoreline.

Houghton Community Council: Does the Houghton Community Council have any questions on the remaining draft shoreline modification standards contained in Attachment 2 or comments to transmit to the Planning Commission?

VI. GENERAL REGULATIONS

General regulations were previously reviewed by the Houghton Community Council, with the exception of nonconformances, which are addressed as follows:

Nonconformances (see Attachment 2, Section 83.520).

Background: The State Guidelines do not provide significant guidance on non-conformances. The Guidelines do provide the following: In some circumstances existing uses and properties may become non-conforming with regard to the regulations and master programs should include provisions to **address these situations in a manner consistent with achievement of the policy of the act and consistent with constitutional and other legal limitations.**

WAC 173-27-080 contains a list of other standard nonconformance provisions. The City can rely on these provisions or it can craft its own to more specifically address unique situations within the City. The City has proposed to craft its own standards in a number of instances.

Proposed Regulations: See Attachment 2.

Key Issues:

- Staff is proposing to **modify the standard provisions for damaged improvements** that are contained within WAC 173-27-080 in order to allow for reconstruction to occur when the entire structure is damaged, rather than the lower 75% threshold that is used in WAC 173-27-080. Under the proposed approach, applicants would be able to replace their structure, even if it were fully (100%) damaged; this is a more permissive standard than is currently contained in the WACs and is proposed to respond to property owner concerns about the lack of predictability and how nonconformance provisions would apply to these types of situations. (Note: This differs from provisions contained in the Zoning Ordinance, which require compliance if damage exceeds 50 percent of the assessed or appraised value of the improvement, whichever is greater). Additional standards are provided for nonconforming overwater structures, which require that the nonconformance be minimized where feasible, while not reducing the number of units to be rebuilt on the property.

- Staff is proposing s**pecial provisions for nonconforming setbacks that would permit minor additions in the shoreline setback to existing nonconforming structures located in the shoreline setback.** As a general rule, nonconforming development may be continued provided that it is not enlarged, intensified, increased or altered in any way which increases its nonconformity. The special provisions included would expand the opportunity for applicant's to enlarge structures that otherwise would not conform to shoreline setback standards, in exchange for shoreline restoration. (Note: The conceptual approaches do not include all nonconformance provisions that would apply, such as lot coverage, height and encroachment into other yards, just a special nonconformance provision that is proposed to address minor additions to existing nonconforming structures in the shoreline setback).

- Staff has proposed that **non-conforming uses** be allowed to **convert to another type of non-conforming use** through a conditional use permit. It is

not anticipated that the City will have a large number of nonconformances. The standards noted in WAC 173-27-080 do allow for conversion of nonconforming uses and a similar proposal is included within the proposed regulations. This differs from the existing SMP, which includes the following provision: A nonconforming use shall not be changed to another nonconforming use, regardless of the conforming or nonconforming status of the building or structure in which it is housed.

- Staff has proposed that for existing sites that do not have developed **waterfront access trails**, installation of those trails are required when change on the property exceed 50% of the replacement value of the structure.

- Staff has proposed species provisions for constrained lots that would allow replacement of an structure in its existing location, with no increases in structure footprint.

For proposed nonconformance regulations, staff would recommend that the Houghton Community Council review the draft regulations and provide comments to the Planning Comission.

VII. AUTHORITY AND PURPOSE

Background: These provisions address issues such as **authority, applicability, and purpose and intent as well as address how these regulations are administered with other codes and ordinances**. One important note is that the Shoreline Management Act identifies certain shorelines as **"shorelines of statewide significance"** and raises their status by setting use priorities and requiring "optimum implementation" of the act's policy. Lake Washington is a shoreline of statewide significance. As a result, WAC 173-26-251 describes methods to provide for the priorities listed in RCW 90.58.020 and to achieve "optimum implementation" as called for in RCW 90.58.090(4).

Proposed Regulations: See Section 83.10-.70 in Attachment 2.

Key Issues: None.

Staff would recommend that the Houghton Community Council review the draft Authority and Purpose provisions and provide comments to the Planning Comission.

VIII. ADMINISTRATIVE PROVISIONS

Background: The Shoreline Management Act's provisions are intended to provide for the management of all development and uses within its jurisdiction, whether or not a shoreline permit is required. As a result, Kirkland has the authority and responsibility to enforce master program regulations on all uses and development in the shoreline area.

In addition, all master programs shall include standards for reviewing conditional use permits and variances which conform to chapter 173-27 WAC.

Proposed Regulations: See Attachment 4.

Key Issues: None.

Staff would recommend that the Houghton Community Council review the draft Administrative Provisions and provide comments to the Planning Comission.

IX. RESTORATION PLAN

Background: Master programs are required to include goals, policies and actions for **restoration of impaired shoreline ecological functions**. These provisions should be **designed to achieve overall improvements in shoreline ecological functions over time**, when compared to the shoreline conditions inventoried as part of the Final Shoreline Inventory and Analysis. As noted in the State Guidelines, local governments should "make real and meaningful use of established or funded non-regulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or non-regulatory programs..."

As opposed to the shoreline regulations component of the SMP, the Restoration Plan is a **non-regulatory effort** to see and understand opportunities to enhance degraded shoreline areas and systems**. The purpose of restoration planning is to prioritize goals and establish policies which facilitate and coordinate existing and potential non-regulatory policies and programs.**

The Restoration Plan should consider and address the following subjects:

1. **Identify degraded areas**, impaired ecological functions, and sites with potential for ecological restoration;
2. Establish overall **goals and priorities** for restoration of degraded areas and impaired ecological functions;
3. Identify **existing and ongoing projects and programs** that are currently being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), which are designed to contribute to local restoration goals;
4. Identify **additional projects and programs needed** to achieve local restoration goals, as well as implementation strategies including identifying prospective funding sources for those projects and programs;
5. Identify **timelines and benchmarks for implementing restoration projects** and programs and achieving local restoration goals; and

6. Provide for **mechanisms or strategies to ensure that restoration projects and programs will be implemented** according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

   Proposed Plan: Attachment 5 contains a draft Restoration Plan that responds to these requirements.

Staff would recommend that the Houghton Community Council review the draft Restoration Plan and provide comments to the Planning Comission.

X. CUMULATIVE IMPACT ANALYSIS (DRAFT)

Background: Master programs are required to contain policies and regulations that assure at minimum, **no net loss of ecological functions** necessary to sustain shoreline natural resources. To achieve this standard while accommodating appropriate and necessary shoreline uses and development, master programs need to establish and apply:

- Environment designations with appropriate use and development standards, and
- Provisions to address the impacts of specific common shoreline uses, development activities and modification actions, and
- Provisions for the protection of critical areas within the shoreline, and
- Provisions for mitigation measures and methods to address unanticipated impacts.

In order to evaluate whether Kirkland's shoreline master program has met the no net loss standard, the City must evaluate and consider the cumulative impacts of reasonably foreseeable future development on shoreline ecological functions. The evaluation of cumulative impacts must consider:

- **Current circumstances** affecting the shorelines and relevant natural processes;
- **Reasonably foreseeable future development** and use of the shoreline; and
- **Beneficial effects** of any established regulatory programs under other local, state, and federal laws.

Additional information on the principles of no net loss and the cumulative impact analysis can be found in http://apps.leg.wa.gov/WAC/default.aspx?cite=173-26-186 and http://apps.leg.wa.gov/WAC/default.aspx?cite=173-26-201

Proposed Cumulative Impact Analysis: Attachment 6 contains a rough draft cumulative impact analysis that examines these issues. The concepts within the Cumulative Impact Analysis will continue to be further refined and amended as needed, but the draft begins to outline the basic approach that is proposed to be used for evaluating potential impacts to ecological functions caused by different anticipated development activities, as well as mechanisms to minimize or mitigate for these potential impacts. Staff would recommend that the Houghton Community Council review the general format of the draft and identify specific areas where you may have questions or would recommend additional analysis or evaluation.

Staff would recommend that the Houghton Community Council review the draft Cumulative Impact Analysis and provide comments to the Planning Comission.

XI. NEXT STEPS AND REVIEW PROCESS FOR UPDATE

Staff has been working with the HCC and Planning Commission on the SMP over the past 3 years. The study sessions on the draft SMP will occur over the next couple of months as we work through the remaining issues as well as the Restoration Plan and Cumalative Impact Analysis. An open house is tentatively scheduled in early July with public hearings before the HCC scheduled in late July and recommendations from the Community Council and Commission targeted for August. The City Council is scheduled to review the proposed SMP at their study session on September 15, 2009.

Following the study session the City Council would adopt a "resolution of intent" to adopt the SMP that would then be transmitted to the Department of Ecology along with all of the SMP documents and the required checklist that identifies how the SMP meets the guidelines established by the legislature. These steps are outlined in WAC 173-26-100 through 173-100-120.

The Washington Department of Ecology (DOE) must approve all master programs before they become effective. Following submittal of the master program, DOE determines if the submittal is complete and if it is not, they identify the deficiencies that need to be addressed. If it is deemed complete, DOE has a 30-day comment period and may conduct their own public hearing during that comment period.

Following the comment period, DOE would then request a response from the city on the comments. After receiving the response, DOE makes written findings and conclusions in reaching its determination of consistency with the statutes and applicable guidelines. If approved, then the SMP is effective. If not approved, DOE provides required and recommended changes for the city to consider and adopt as appropriate. The city can then amend the SMP based on Ecology's comments or submit an alternative proposal. DOE can either deny the alternative proposal or at the request of the city, start anew with the review and approval process. The master program takes effect when it is approved or adopted by rule by the Department of Ecology.

Even though the draft of the SMP will likely be submitted to the DOE this year, it will take several months for the process to be completed.

XII. PUBLIC COMMENTS

A. Public Comments. This memo includes 13 written comment letters (see Attachments 8-20).

XIII. ATTACHMENTS

1. Overview of review status

2. Draft SMP Regulations
3. Visual representation of boatlift canopies
4. Draft SMP Administrative Provisions
5. Draft Restoration Plan
6. Preliminary Draft Cumulative Impact Analysis (in progress)
7. Setback Analysis Maps for Residential – M/H and UM Environments (see large paper copy)
8. Letter from Allen Schwartz dated March 25, 2009
9. Letter from Dave Douglas dated March 26, 009
10. Letter from Allen Schwartz dated April 1, 2009
11. Letter from Dave Douglas dated April 2, 2009
12. Letter from Dave Douglas dated April 3, 2009
13. Letter from Bob Style dated April 4, 2009
14. Letter from Allen Schwartz dated April 11, 2009
15. Drawings submitted by Jim Tosti, dated April 9, 2009
16. Letter from Bob Style dated April 9, 2009
17. Letter from Bob Stle dated April 15, 2009-05-11
18. Letter from Dave Douglas dated April 20, 2009
19. Letter from Dave Douglas dated April 27, 2009
20. Letter from Dave Douglas dated May 4, 2009
21. Existing Setback Conditions Map for Residential – M/H and UM Environments (see large paper copy)

cc: File No. ZON06-00017, Sub-file #1

Summary of Houghton Community Council Review of Shoreline Master Program

Element of SMP	Date Reviewed	Status
Shoreline Inventory and Characterization		
Shoreline Inventory	2006	Done
Shoreline Characterization	2006	Done
Shoreline Use Analysis		Still pending.
Shoreling Goals and Policies		
Shoreline Goals and Policies	2008	Preliminary Review Done. Need to consider changes as a result of regulation development.
Shoreline Regulations		
Authority and Purpose		
Authority		Still pending.
Applicability		Still pending.
Purpose and Intent		Still pending.
Relationship to other codes and ordinances		Still pending.
Interpretation		Still pending.
Liberal Construction		Still pending.
Severability		Still pending.
Definitions		
Definitions	11/24/2008	Preliminary Review Done. Need to consider changes as a result of regulation development.
Shoreline Environment Designations and Shorelines of Statewide Significance		
Shoreline Jurisdiction and Official Shoreline Map	11/24/2008	Done
Natural	11/24/2008	Done
Urban Conservancy	11/24/2008	Done
Residential - L	11/24/2008	Done
Residential – M/H	11/24/2008	Done
Urban Mixed	11/24/2008	Done
Aquatic	11/24/2008	Done
Uses and Activities in Shoreline Environment		
User Guide	11/24/2008	Done
Shoreline Environments, Permitted Uses and Activities Chart	11/24/2008	Done
Use Specific Regulations		
Shoreline Development Standards	3/23/3009	Preliminary Review Done.
Residential Development		Still pending.
Commercial Uses.		Still pending.

Element of SMP	Date Reviewed	Status
Industrial Uses		Still pending.
Recreational Development		Still pending.
Institutional and Religious Uses		Still pending.
Transportation Facilities		Still pending.
Utilities		Still pending.
Shoreline Modification Regulations		
Piers, Docks, Floats and Boatlifts	2/23/2009	Concepts evaluated.
Marinas		Still pending.
Shoreline stabilization	2/23/2009	Preliminary Review Done.
Breakwaters, jetties, rock weirs, groins		Still pending.
Dredging and dredge material disposal		Still pending.
Land Surface Modification		Still pending.
Landfill		Still pending.
Shoreline habitat and natural systems enhancement projects		Still pending.
General Regulations		
Shoreline Setbacks		Still pending.
Shoreline Vegetation Management		Still pending.
View Corridors	11/24/2008	Preliminary Review Done.
Public Access	11/24/2008	Preliminary Review Done.
Standards for In-Water Activity	11/24/2008	Preliminary Review Done.
Miscellaneous Standards	11/24/2008	Preliminary Review Done.
Parking	11/24/2008	Preliminary Review Done.
Signage	11/24/2008	Preliminary Review Done.
Lighting	11/24/2008	Preliminary Review Done.
Water Quality, Stormwater and Nonpoint Pollution	11/24/2008	Preliminary Review Done.
Critical Areas – General Standards	11/24/2008	Preliminary Review Done.
Wetlands	11/24/2008	Preliminary Review Done.
Streams	11/24/2008	Preliminary Review Done.
Geologically Hazardous Areas	11/24/2008	Preliminary Review Done.
Flood Hazard Reduction	11/24/2008	Preliminary Review Done.
Archaeological and Historic Resources	11/24/2008	Preliminary Review Done.
Nonconformances		
Nonconformances	1/8/09	Still pending.
Shoreline Restoration		Still pending.

Element of SMP	Date Reviewed	Status
Shoreline Administration and Procedures		
General		Still pending.
Procedures		Still pending.
Cumulative Impact Analysis		
Cumulative Impact Analysis		Still pending.
Restoration Plan		
Restoration Plan		Still pending.

LCOG: H:\Templates\WordXP\Normal.dot
Last Saved: Wednesday, May 13, 2009

Chapter 83 – SHORELINE MANAGEMENT

Sections:

Authority and Purpose

83.10 Authority
83.20 Applicability
83.30 Purpose and Intent
83.40 Relationship to other codes and ordinances
83.50 Interpretation
83.60 Liberal Construction
83.70 Severability

Definitions

83.80 Definitions

Shoreline Environment Designations and Shorelines of Statewide Significance

83.90 Shoreline Jurisdiction and Official Shoreline Map
83.100 Natural
83.110 Urban Conservancy
83.120 Residential - L
83.130 Residential – M/H
83.140 Urban Mixed
83.150 Aquatic

Uses and Activities in Shoreline Environment

83.160 User Guide
83.170 Shoreline Environments, Permitted Uses and Activities Chart

Use Specific Regulations

83.180 Shoreline Development Standards
83.190 General Use Standards
83.200 Residential Development
83.210 Commercial Uses.
~~83.220 Industrial Uses~~
83.230 Recreational Development
83.240 Transportation Facilities
83.250 Utilities
83.260 Land Division

Shoreline Modification Regulations

83.270 General
83.280 Piers, Docks, Floats and Boatlifts
83.290 Marinas
83.300 Shoreline stabilization
83.310 Breakwaters, jetties, rock weirs, groins
83.320 Dredging and dredge material disposal
83.330 Land Surface Modification
83.340 Landfill

83.350 Shoreline habitat and natural systems enhancement projects

General Regulations

83.360 Shoreline Setbacks
83.370 Shoreline Vegetation Management
83.380 View Corridors
83.390 Public Access
83.400 Standards for In-Water Activity
83.410 Miscellaneous Standards
83.420 Parking
83.430 Signage
83.440 Lighting
83.450 Water Quality, Stormwater and Nonpoint Pollution
83.460 Critical Areas – General Standards
83.470 Wetlands
83.480 Streams
83.490 Geologically Hazardous Areas
83.500 Flood Hazard Reduction
83.510 Archaeological and Historic Resources
83.520 Nonconformances

Authority and Purpose

83.10 Authority

1. This chapter is adopted as the shoreline master program for the city. It is adopted under the authority of RCW Chapter 90.58 and WAC Chapter 173-26.

83.20 Applicability

1. Shoreline Jurisdiction
   a. The provisions of this Chapter shall apply to all shoreline of the state, all shorelines of statewide significance, and shorelands.
   b. Lake Washington, its underlying land, associated wetlands, together with those lands extending landward 200 feet from the ordinary high water mark shall be within shoreline jurisdiction.
   c. Shoreline jurisdiction does not include buffer areas for wetlands or streams that occur within shoreline jurisdiction, except those buffers contained within lands extending landward 200 feet from the ordinary high water mark of Lake Washington.
2. Designation – The waters of Lake Washington and shorelands associated with Lake Washington are designated as shorelines of statewide significance.

83.30 Purpose and Intent - The Kirkland Shoreline Master Program has the following purposes:

1. Enable current and future generations to enjoy an attractive, healthy and safe waterfront.
2. Protect the quality of water and shoreline natural resources to preserve fish and wildlife and their habitats.
3. Protect the City's investments as well as those of property owners along and near the shoreline.
4. Efficiently achieve the SMP mandates of the State.
5. In interpreting the provisions of this Chapter, preference shall be given in the following order to uses that:
   a. Recognize and protect the statewide interest over local interest;
   b. Preserve the natural character of the shoreline;
   c. Result in long term over short term benefit;
   d. Protect the resources and ecology of the shoreline;
   e. Increase public access to publicly owned areas of the shorelines;
   f. Increase recreational opportunities for the public in the shoreline;
   g. Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

83.40 Relationship to other codes and ordinances

1. The shoreline regulations contained in this chapter shall apply as an overlay and in addition to zoning, land use regulations, development regulations, and other regulations established by the City.
2. In the event of any conflict between these regulations and any other regulations of the City, the regulations that provide greater protection of the shoreline natural environment and aquatic habitat shall prevail.
3. Shoreline Master Program policies establish intent for the shoreline regulations.

83.50 Interpretation

1. General – The Planning Director may issue interpretations of any provisions of this Chapter as necessary to administer the shoreline master program policies and regulations. The Director shall base his/her interpretations on:

   a. The defined or common meaning of the words of the provision; and

   b. The general purpose of the provision as expressed in the provision; and

   c. The logical or likely meaning of the provision viewed in relation to the Washington State Shoreline Management Act (SMA), including the purpose and intent as expressed in chapter 90.58 RCW and the applicable guidelines as contained in WAC 173-26, as well as the Shoreline Chapter of the Comprehensive Plan.

   Any formal written interpretations of shoreline policies or regulations shall be submitted to the Department of Ecology for review.

2. Effect – An interpretation of this code will be enforced as if it is part of this code.

3. Availability – All interpretations of this code, filed sequentially, are available for public inspection and copying in the Planning Department during regular business hours. The Planning Official shall also make appropriate references in this code to these interpretations.

83.60 Liberal Construction

1. As provided for in RCW 90.58.900, the Act is exempted from the rule of strict construction; the Act and this Program shall therefore be liberally construed to give full effect to the purposes, goals, objectives, and policies for which the Act and this Program were enacted and adopted, respectively.

83.70 Severability

1. The standards, procedures, and requirements of the code are the minimum necessary to promote the health, safety, and welfare of the residents of Kirkland. The City is free to adopt more rigorous or different standards, procedures, and requirements whenever this becomes necessary. If the provisions of this code conflict one with another, or if a provision of this code conflicts with the provision of another ordinance of the City, the most restrictive provision or the provision imposing the highest standard prevails.

2. The Act and this Program adopted pursuant thereto comprise the basic state and City law regulating use of shorelines. In the event provisions of this Program conflict with other applicable county policies or regulations, the more restrictive shall prevail. Should any section or provision of this Program be declared invalid, such decision shall not affect the validity of this Program as a whole.

Definitions

83.80 Definitions

Refer to the definitions in this Chapter for terms that are specific to the Shoreline Master Program as well as the definitions contained in Chapter 5 KZC.

Act: The Washington State Shoreline Management Act, chapter 90.58 RCW.

Agriculture: Agricultural uses and practices including, but not limited to: Producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded; allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities, provided that the replacement facility is no closer to the shoreline than the original facility; and maintaining agricultural lands under production or cultivation

Aquaculture: The cultivation of fish, shellfish, and/or other aquatic animals or plants, including the incidental preparation of these products for human use.

Aquatic: Those areas waterward of the ordinary high water mark.

Appurtenance: Uses typically associated with single family residences, such as decks, driveways, utilities, fences, grading which does not exceed five hundred cubic yards and which does not involve placement of fill in any wetland or waterward of the ordinary high water mark, and accessory structures such as a tool shed, greenhouse, private garage, or accessory dwelling unit. An appurtenance is necessarily connected to the use and enjoyment of a single-family residence and is located landward of the ordinary high water mark and the perimeter of a wetland.

Average Parcel Depth – The average of the distance from the high waterline to the street providing direct access to the subject property as measured along the side property lines or the extension of those lines where the water frontage of the subject property ends, the center of the high waterline of the subject property and the quarter points of the high waterline of the subject property. At the northern terminus of the 5th Ave West private access easement, the average parcel depth shall be measured from the high waterline to the public pedestrian access easement providing access to Waverly Beach Park.

Average parcel width: The average of the distance from the north to the south property lines as measured along the ordinary high water mark and the front property line, or along the east and west property lines if the parcel does not abut Lake Washington.

Bioengineering: Project designs or construction methods which use live woody vegetation or a combination of live woody vegetation and specially developed natural or synthetic materials to establish a complex root grid within the existing bank which is resistant to erosion, provides bank stability, and maintains a healthy riparian environment with habitat features important to fish life. Use of wood structures or limited use of clean angular rock may be allowable to provide stability for establishment of the vegetation.

Boat: Any contrivance used or capable or being used as a means of transportation on water, except for cribs or piles, shinglebolts, booms or logs, rafts of logs, and rafts of lumber.

Boat house: An overwater structure designed for the storage of boats, but not including boat lift canopies.

Boat Launch: Graded slopes, slabs, pads, planks, or rails used for launching boats by means of a trailer, hand, or mechanical device.

Boat Lift: Lifts for motorized boats, kayaks, canoes and jet skis. Includes floating lifts, which are designed to not contact the substrate of the Lake; ground-based lifts, which are designed to be in contact with or supported by the substrate of the Lake; and suspended lifts, which are designed to be affixed to the existing overwater structure with no parts contacting the substrate.

Breakwater: Protective structures which are normally built offshore to provide protection from wave action.

Buffer – The area immediately adjacent to wetlands and streams that protects these sensitive areas and provides essential habitat elements for fish and/or wildlife.

Buffer Setback – A setback distance of 10 feet from a designated or modified wetland or stream buffer within which no buildings or other structures may be constructed, except as provided in KZC 83.90.3(b) and 83.95.3(b). The buffer setback serves to protect the wetland or stream buffer during development activities, use, and routine maintenance occurring adjacent to these resources.

Bulkhead: A vertical or nearly vertical erosion protection structure placed parallel to the shoreline consisting of concrete, timber, steel, rock, or other permanent material not readily subject to erosion.

Canopy: A cover installed as a component of a boat lift.

Class A Streams – Streams that are used by salmonids. Class A streams generally correlate with Type F streams as defined in WAC 222-16-030.

Class B Streams – Perennial streams (during years of normal precipitation) that are not used by salmonids. Class B streams generally correlate with Type F streams (if used by non-salmonids or they contain fish habitat) or Type Np streams (if they are perennial and do not contain fish habitat) as defined in WAC 222-16-030.

Class C Streams – Seasonal or ephemeral streams (during years of normal precipitation) not used by salmonids. Class C streams generally correlate with Type F streams (if used by non-salmonid fish or they contain fish habitat) or Type Ns streams (if they are seasonal and do not contain fish habitat) as defined in WAC 222-16-030.

Concession Stand: A permanent or semi-permanent structure for the sale and consumption of food and beverages and water-related products such as sunscreen, sunglasses, and other similar products. A concession stand may include outdoor seating areas. Indoor seating and associated circulation areas shall not exceed more than 10 percent of the gross floor area of the use, and it must be demonstrated to the City that the floor plan is designed to preclude the seating area from being expanded.

Conditional Uses: A use, development, or substantial development which is classified as a conditional use in section 83.165 or which is not classified within the SMP. Those activities identified as conditional uses or not classified in this Master Program must be treated according to the review criteria established in WAC 173-27-160.

Critical Areas – Critical areas include the following areas and ecosystems: (a) wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas (streams); (d) frequently flooded areas; and (e) geologically hazardous areas. Kirkland does not contain any critical aquifer recharge areas. Critical areas may also be referred to as sensitive areas.

Development: A use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel, or minerals; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters overlying lands subject to RCW 90.58 at any state of water level.

Dock: A structure that floats on the surface of the water, without piling supports, but which is attached to land. Typically used for boat moorage, swimming, public access, and other activities that require access to deep water.

Drainage Basin – A specific area of land drained by a particular Kirkland watercourse and its tributaries.

Dredging: The removal, displacement, or disposal of unconsolidated earth material such as sand, silt, gravel, or other submerged materials, from the bottom of water bodies, ditches, or natural wetlands; maintenance dredging and/or support activities are included in this definition.

Dry land boat storage: A commercial service providing storage of boats and other boat on the upland portion of a property.

Ecological Functions: The work performed or role played by the physical, chemical, and biological processes that contribute to the maintenance of the aquatic and terrestrial environments that constitute the shoreline's natural ecosystem.

Ecological Restoration: See Restore.

Ecologically Intact Shoreline: Those shoreline areas that retain the majority of their natural shoreline functions, as evidenced by the shoreline configuration and the presence of native vegetation. Generally, but not necessarily, ecologically intact shorelines are free of structural shoreline modifications, structures, and intensive human uses.

Ecosystem-wide Processes: The suite of naturally occurring physical and geologic processes of erosion, transport, and deposition, and specific chemical processes that shape landforms within a specific shoreline ecosystem and determine both the types of habitat that are present and the associated ecological functions.

Feasible: An action, such as a development project, mitigation, or preservation requirement, which meets all of the following conditions:

(a) The action can be accomplished with technologies and methods that have been used in the past in similar circumstances, or studies or tests have demonstrated in similar circumstances that such approaches are currently available and likely to achieve the intended results;

(b) The action provides a reasonable likelihood of achieving its intended purpose; and

(c) The action does not physically preclude achieving the project's primary intended legal use.

In cases where these guidelines require certain actions unless they are infeasible, the burden of proving infeasibility is on the applicant.

In determining an action's infeasibility, the City may weigh the action's relative public costs and public benefits, considered in the short- and long-term time frames.

Ferry terminal, passenger-only: A docking facility used in the transport of passengers across a body of water. A ferry terminal may include accessory parking facilities, ticketing booth, and other accessory uses or structures necessary for its operation. A passenger-only ferry terminal does not include provisions for the ferrying of vehicles.

Fill: The addition of soil, sand, rock, gravel, sediment, earth-retaining structure, or other material to an area waterward of the ordinary high water mark, in wetland, or on shorelands in a manner that raises the elevation or creates dry land.

Float: A structure that floats on the surface of the water, which is not attached to the shore but that may be anchored to submerged land. Floats are typically used for swimming, diving and similar recreational activities.

Float plane landing and moorage facility: A place where commercially operated water-based passenger aircraft arrive and depart. May include accessory facilities such as waiting rooms, ticketing booths and similar facilities.

Floodplain: Synonymous with the one hundred year floodplain and means the land susceptible to inundation with a one percent chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulations maps or a reasonable method which meets the objectives of the Shoreline Management Act.

Frequently Flooded Areas – All areas shown on the Kirkland sensitive areas maps as being within a 100-year floodplain, as well as all areas regulated by Chapter 21.56 KMC.

Gabions: Structures composed of masses of rocks or rubble held tightly together by wire mesh (typically) so as to form upright blocks or walls. Often constructed as a series of overlapping blocks or walls. Used

primarily in retaining earth, steep slopes or embankments, to retard erosion or wave action, or as foundations for breakwaters or jetties.

Geotechnical Analysis: See Geotechnical Report.

Geotechnical Report: A scientific study or evaluation conducted by a qualified expert that includes a description of the ground and surface hydrology and geology, the affected land form and its susceptibility to mass wasting, erosion, and other geologic hazards or processes, conclusions and recommendations regarding the effect of the proposed development on geologic conditions, the adequacy of the site to be developed, the impacts of the proposed development, alternative approaches to the proposed development, and measures to mitigate potential site-specific and cumulative geological and hydrological impacts on the proposed development, including the potential adverse impacts to adjacent and down-current properties. Geotechnical reports shall conform to accepted technical standards and must be prepared by qualified professional engineers (or geologists) who have professional expertise about the regional and local shoreline geology and processes.

Grading: The movement or redistribution of the soil, sand, rock, gravel, sediment, or other material on a site in a manner that alters the natural contour of the land.

Hard Structural Shoreline Stabilization: Shore erosion control practices using hardened structures that armor and stabilize the shoreline from further erosion. Hard structural shoreline stabilization typically uses concrete, boulders, dimensional lumber or other materials to construct linear, vertical or near-vertical faces. These include bulkheads, rip-rap, groins, and similar structures.

Helipad: A takeoff and landing area for helicopters.

Houseboat: A structure designed and operated substantially as a permanently based overwater residence. Houseboats are not vessels and lack adequate self-propulsion and steering equipment to operate as a vessel. They are typically served by permanent utilities and semipermanent anchorage/moorage facilities.

Impervious surface: A hard surface water which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development; and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveway, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam, or other surfaces which similarly impede the natural infiltration of surface and storm water runoff. Open, uncovered flow control or water quality treatment facilities shall not be considered impervious surfaces

Joint-use: Piers and floats that are constructed by more than one contiguous waterfront property owner or by a homeowner's association or similar group.

Land Division: The division or redivision of land into lots, tracts, parcels, sites or divisions for the purpose of sale, lease, or transfer of ownership.

Land Surface Modification: The clearing or removal of trees, shrubs, groundcover and other vegetation, excluding trees, and all grading, excavation and filling of materials.

Large Woody Debris: Trunks or branches of trees that have fallen in or been placed in a waterbody and serve the purposes of stabilization or habitat for fish and aquatic insects.

Low Impact Development: Low Impact Development (LID) is a set of techniques that mimic natural watershed hydrology by slowing, evaporating/transpiring, and filtering water that allows water to soak into the ground closer to its source. The development shall meet one or more of the following objectives:

- Preservation of natural hydrology.
- Reduction of impervious surfaces.
- Treatment of stormwater in numerous small, decentralized structures.
- Use of natural topography for drainageways and storage areas.

- Preservation of portions of the site in undisturbed, natural conditions.
- Reduction of the use of piped systems. Whenever possible, site design should use multifunctional open drainage systems such as vegetated swales or filter strips which also help to fulfill landscaping and open space requirements.

Use of environmentally sensitive site design and green building construction that reduces runoff from structures, such as green roofs.

Marina: A private or public facility providing the purchase and or lease or rental of a slip for storing, berthing and securing motorized boats or watercraft, including both long-term or transient moorage. Marinas may include accessory facilities for providing incidental services to users of the marina, such as waste collection, boat sales or rental activities, and retail establishments providing fuel service, repair or service of boats. For the purposes of this Chapter, a marina shall also include public piers providing moorage that are located within public parks or other publicly owned properties.

May: Means the action is acceptable, provided it conforms to the provisions of the Shoreline Management Act, with the decision-maker having or using the ability to act or decide according to their own discretion or judgment.

Minor Improvements – Walkways, pedestrian bridges, benches, and similar features, as determined by the Planning Official, pursuant to KZC 83.90.3(e) and 83.95.3(e).

Moorage buoy: A float, sometimes carrying a signal or signals, anchored to provide a mooring place away from the shore.

Must: means a mandate; the action is required.

Neighborhood-oriented retail establishment: Small scale retail and service uses that provide primarily convenience retail sales and service to the surrounding residential neighborhood. The following is a nonexclusive list of neighborhood-oriented retail uses: small grocery store, drug store, hair salon, coffee shop, dry cleaner or similar retail or service uses.

Nonconforming use or development: A shoreline use or development which was lawfully constructed or established prior to the effective date of the act or the applicable master program, or amendments thereto, but which does not conform to present regulations or standards of the program.

Non-Water-Oriented Use: Those uses that are not water-dependent, water-related, or water-enjoyment.

Ordinary High Water Mark (OHWM): The mark that will be found on all lakes and streams by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation, as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department; provided, that in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining fresh water shall be the line of mean high water, or as amended by the State. For Lake Washington, the ordinary high water mark corresponds with a lake elevation of 21.8 feet.

Outfall: A structure used for the discharge of a stormwater or sewer system into a receiving water.

Pervious: As opposed to impervious surfaces, these are surfaces that allow water to pass through at rates similar to pre-developed conditions. There are various types of pervious surfaces, including pervious asphalt, pervious concrete and grass or pervious pavers.

Permitted Uses: Uses which are allowed within the applicable shoreline environment, provided that they must meet the policies, use requirements, and regulations of this Chapter 83 KZC and any other applicable regulations of the City or state.

Pier: A structure supported by pilings that projects over, and is raised above the water but is attached to land, and that is used for boat moorage, swimming, fishing, public access, float plane moorage, or similar activities requiring access to deep water.

Piling: The structural supports for piers, usually below the pier decking and anchored in the water.

Preserve: The protection of existing ecological shoreline processes or functions.

Primary Basins – The following basins, as shown on the Sensitive Areas Map: Juanita Creek, Forbes Creek, South Juanita Slope, Yarrow Creek, and Carillon Creek.

Public Access: The ability of the general public to reach, touch, and enjoy the water's edge, to travel on the waters of the state, and to view the water and the shoreline.

Public Access Facility: A water-oriented structure, such as a trail, pier, pedestrian bridge, boat launch, viewing platform, or fishing pier that provides access for the public to or along the shoreline.

Public Access Pier or Boardwalk: An elevated structure which is constructed waterward of the ordinary high water mark and intended for public use.

Public Pedestrian Walkway: A portion of private property subject to an easement giving the public the right to stand on or traverse this portion of the property.

Public Use Area: A portion of private property that is dedicated to public use and which contains one or more of the following elements: benches, tables, lawns, gardens, piers, exercise or play equipment or similar improvements or features. These elements are to provide the public with recreational opportunities in addition to the right to traverse or stand in this area.

Qualified Professional – An individual with relevant education and training, as determined by the Planning Official, and with at least three years' experience in biological fields such as botany, fisheries, wildlife, soils, ecology, and similar areas of specialization, and including a professional wetland scientist.

Rain garden: Rain gardens and bioretention areas are landscaping features adapted to provide on-site infiltration and treatment of stormwater runoff using soils and vegetation. They are commonly located within small pockets of residential land where surface runoff is directed into shallow, landscaped depressions; or in landscaped areas around buildings; or, in more urbanized settings, to parking lot islands and green street applications.

Restore: The reestablishment or upgrading of impaired ecological shoreline processes or functions. This may be accomplished through measures including but not limited to revegetation, removal of intrusive shoreline structures and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions.

Restoration: See Restore.

Revetment: A shoreline protective structure constructed on a slope, and used to prevent erosion.

Riparian area: A transition area between the aquatic ecosystem and the adjacent upland area that supports a number of shoreline ecological functions and processes, including bank stability, the recruitment of woody debris, leaf litter fall, nutrients, sediment filtering, shade, and other riparian features that are important to both riparian forest and aquatic system conditions.

Salmonid – A member of the fish family salmonidae, which include chinook, coho, chum, sockeye, and pink salmon; rainbow, steelhead, and cutthroat trout; brown trout; brook and dolly varden char, kokanee, and white fish.

Secondary Basins – Moss Bay, Houghton Slope A, Houghton Slope B, and Kirkland Slope, which are depicted on the Sensitive Areas Map.

Shall: Means a mandate; the action must be taken.

Shorelands: Those lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of the Shoreline Management Act; the same to be designated as to location by the Department of Ecology.

Shoreland Areas: See Shorelands.

Shoreline Functions: See Ecological Functions.

Shoreline habitat and natural systems enhancement projects: Activities conducted for the purpose of establishing, restoring, or enhancing habitat for priority species in shorelines. The following is a nonexclusive list of shoreline habitat and natural systems enhancement projects: modification of vegetation, removal of non-native of invasive plants, shoreline stabilization, dredging and filling - provided that the primary purpose of such actions is clearly restoration of the natural character and ecological functions of the shoreline.

Shoreline Modification: Those actions that modify the physical configuration or qualities of the shoreline area, usually through the construction of a physical element such as a dike, breakwater, pier, dredged basin, fill, bulkhead, or other shoreline structure. They can include other actions, such as clearing, grading, or application of chemicals.

Shoreline Setback: The distance measured in feet that a structure or improvement must be located from the ordinary high water mark.

Shoreline Stabilization: Means for protecting shoreline upland areas and shoreline uses from the effects of shoreline wave action, flooding or erosion. Shoreline stabilization includes structural and non-structural methods, riprap, bulkheads, gabions, jetties, dikes and levees, flood control weirs, and bioengineered walls or embankments.

Shorelines: All of the water areas of the state, including reservoirs, and their associated shorelands, together with the lands underlying them: except (i) shorelines of statewide significance; (ii) shorelines on segments of streams upstream of a point where the mean annual flow is twenty cubic feet per second or less and the wetlands associated with such upstream segments; and (iii) shorelines on lakes less than twenty acres in size and wetlands associated with such small lakes.

Shorelines of Statewide Significance: Those lakes, whether natural, artificial, or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary high water mark and those natural rivers or segments thereof where the mean annual flow is measured at one thousand cubic feet per second or more. Definition is limited to freshwater areas in Western Washington.

Should: Means that the particular action is required unless there is a demonstrated, compelling reason, based on policy of the Shoreline Management Act and the Shoreline Rules, against taking the action.

Sign, Interpretive: A permanent sign without commercial message, located on a publicly-accessible site, that provides public educational and interpretive information related to the site on which the sign is located, such as information on natural processes, habitat restoration programs, or cultural history, or that is associated with an adopt-a-stream, adopt-a-park or similar agency-sponsored program.

Significant vegetation removal: The removal or alteration of trees, shrubs, and/or ground cover by clearing, grading, cutting, burning, chemical means, or other activity that causes significant ecological impacts to functions provided by such vegetation. The removal of invasive or noxious weeds does not constitute significant vegetation removal. Tree pruning, not including tree topping, where it does not affect ecological functions, does not constitute significant vegetation removal.

Soft Shoreline Stabilization Measures: Shore erosion control and restoration practices that contribute to restoration, protection or enhancement of shoreline ecological functions. Soft shoreline stabilization typically includes a mix of gravels, cobbles, boulders, logs and native vegetation placed to provide shore stability in a non-linear, sloping arrangement.

Streams – Areas where surface waters produce a defined channel or bed that demonstrates clear evidence of the passage of water, including but not limited to bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. Streams do not include irrigation ditches, canals, storm or surface water runoff devices, or other entirely artificial watercourses, unless they are used by salmonids or convey a naturally occurring stream that has been diverted into the artificial channel.

Substantial Development: Any development of which the total cost or fair market value exceeds five thousand dollars, or any development which materially interferes with the normal public use of the water

or shorelines of the state. The dollar threshold established in this subsection (3)(e) must be adjusted for inflation by the Office of Financial Management every five years, beginning July 1, 2007, based upon changes in the consumer price index during that time period. "Consumer price index" means, for any calendar year, that year's annual average consumer price index, Seattle, Washington area, for urban wage earners and clerical workers, all items, compiled by the Bureau of Labor and Statistics, United States Department of Labor. The Office of Financial Management must calculate the new dollar threshold and transmit it to the Office of the Code Reviser for publication in the Washington State Register at least one month before the new dollar threshold is to take effect. Those developments that meet the precise terms of the listed exemptions as contained in WAC 173-27-040 as follows (or as subsequently amended in the future) shall not be considered substantial developments for the purpose of this chapter:

a. Normal maintenance or repair of existing structures or developments, including damage by accident, fire, or elements;

b. Construction of the normal protective bulkhead common to single family residences;

c. Emergency construction necessary to protect property from damage by the elements;

d. Construction and practices normal or necessary for farming, irrigation, and ranching activities, including agricultural service roads and utilities on shorelands, and the construction and maintenance of irrigation structures including but not limited to head gates, pumping facilities, and irrigation channels. A feedlot of any size, all processing plants, other activities of a commercial nature, alteration of the contour of the shorelands by leveling or filling other than that which results from normal cultivation, shall not be considered normal or necessary farming or ranching activities. A feedlot shall be an enclosure or facility used or capable of being used for feeding livestock hay, grain, silage, or other livestock feed, but shall not include land for growing crops or vegetation for livestock feeding and/or grazing, nor shall it include normal livestock wintering operations;

e. Construction or modification of navigational aids such as channel markers and anchor buoys;

f. Construction on shorelands by an owner, lessee, or contract purchaser of a single family residence for his own use or for the use of his or her family, which residence does not exceed a height of thirty-five feet above average grade level and which meets all requirements of the state agency or local government having jurisdiction thereof, other than requirements imposed pursuant to this chapter;

g. Construction of a dock, including a community dock, designed for pleasure craft only, for the private noncommercial use of the owner, lessee, or contract purchaser of single and multiple family residences. This exception applies if the fair market value of the dock does not exceed ten thousand dollars, but if subsequent construction having a fair market value exceeding two thousand five hundred dollars occurs within five years of completion of the prior construction, the subsequent construction shall be considered a substantial development for the purpose of this chapter;

h. Operation, maintenance, or construction of canals, waterways, drains, reservoirs, or other facilities that now exist or are hereafter created or developed as a part of an irrigation system for the primary purpose of making use of system waters, including return flow and artificially stored ground water for the irrigation of lands;

i. The marking of property lines or corners on state owned lands, when such marking does not significantly interfere with normal public use of the surface of the water;

j. Operation and maintenance of any system of dikes, ditches, drains, or other facilities existing on September 8, 1975, which were created, developed, or utilized primarily as a part of an agricultural drainage or diking system;

k. Any project with a certification from the governor pursuant to chapter 80.50 RCW;

l. Site exploration and investigation activities that are prerequisite to preparation of an application for development authorization under this chapter, if:

   i. The activity does not interfere with the normal public use of the surface waters;
   The activity will have no significant adverse impact on the environment including, but not limited to, fish, wildlife, fish or wildlife habitat, water quality, and aesthetic values;

   ii. The activity does not involve the installation of a structure, and upon completion of the activity the vegetation and land configuration of the site are restored to conditions existing before the activity;

   iii. A private entity seeking development authorization under this section first posts a performance bond or provides other evidence of financial responsibility to the local jurisdiction to ensure that the site is restored to preexisting conditions; and

   iv. The activity is not subject to the permit requirements of RCW 90.58.550;

m. The process of removing or controlling an aquatic noxious weed, as defined in RCW 17.26.020, through the use of an herbicide or other treatment methods applicable to weed control that are recommended by a final environmental impact statement published by the Department of Agriculture or the Department of Ecology jointly with other state agencies under chapter 43.21C RCW.

n. Watershed restoration projects.

o. A public or private project that is designed to improve fish or wildlife habitat or fish passage, when all of the following apply:

   a. The project has been approved in writing by the department of fish and wildlife;

   b. The project has received hydraulic project approval by the department of fish and wildlife pursuant to chapter 77.55 RCW; and

   c. The local government has determined that the project is substantially consistent with the local shoreline master program. The local government shall make such determination in a timely manner and provide it by letter to the project proponent.

Tour Boat Facility: A moorage pier designed for commercial tour boat usage.

Tree: A woody perennial plant having a single usually elongate main stem generally with few or no branches on its lower part. The Urban Forester shall have the authority to determine whether any specific woody plant shall be considered a tree or a shrub.

Upland: Generally described as the dry land area above and landward of the ordinary high water mark.

Utilities: Services, facilities and infrastructure that produce, transmit, carry, store, process or dispose of electric power, gas, water, sewage, communications, oil, storm water, and similar services and facilities.

Utility Production and Processing Facilities: Facilities for the making or treatment of a utility, such as power plants and sewage treatment plants or parts of those facilities.

Utility Transmission Facilities: Infrastructure and facilities for the conveyance of services, such as power lines, cables, and pipelines.

View Corridor: An open area of the subject property that provides views unobstructed by structures an across the subject property from the adjacent right-of-way to Lake Washington.

Water-Dependent Use: A use or portion of a use which cannot exist in a location that is not adjacent to the water and which is dependent on the water by reason of the intrinsic nature of its operation.

Water-Enjoyment Use: A recreational use or other use that facilitates public access to the shoreline as a primary characteristic of the use; or a use that provides recreational use or aesthetic enjoyment of the shoreline for a substantial number of people as a general characteristic of the use and which through location, design, and operation ensures the public's ability to enjoy the physical and aesthetic qualities of

the shoreline. In order to qualify as a water-enjoyment use, the use must be open to the general public and the shoreline-orientated space within the project must be devoted to the specific aspects of the use that fosters shoreline enjoyment.

Water-Oriented Use: A use that is water-dependent, water-related, or water-enjoyment or a combination of such uses.

Water Quality: The physical characteristics of water within shoreline jurisdiction, including water quantity, hydrological, physical, chemical, aesthetic, recreation-related, and biological characteristics. Where used in this chapter, the term "water quantity" refers only to development and uses regulated under this chapter and affecting water quantity, such as impermeable surfaces and storm water handling practices. Water quantity, for purposes of this chapter, does not mean the withdrawal of ground water or diversion of surface water pursuant to RCW 90.03.250 through 90.03.340.

Water-Related Use: A use or portion of a use which is not intrinsically dependent on a waterfront location, but whose economic viability is dependent upon a waterfront location because:

(a) The use has a functional requirement for a waterfront location such as the arrival or shipment of materials by water or the need for large quantities of water; or

(b) The use provides a necessary service supportive of the water-dependent uses and the proximity of the use to its customers makes it services less expensive and/or more convenient.

Watershed – A region or area bounded on the periphery by a parting of water and draining to a particular watercourse or body of water.

Watershed Restoration Plan: A plan, developed or sponsored by the department of fish and wildlife, the department of ecology, the department of natural resources, the department of transportation, a federally recognized Indian tribe acting within and pursuant to its authority, a city, a county, or a conservation district that provides a general program and implementation measures or actions for the preservation, restoration, re-creation, or enhancement of the natural resources, character, and ecology of a stream, stream segment, drainage area, or watershed for which agency and public review has been conducted pursuant to chapter 43.21C RCW, the State Environmental Policy Act;

Watershed Restoration Project: A public or private project authorized by the sponsor of a watershed restoration plan that implements the plan or a part of the plan and consists of one or more of the following activities:

(A) A project that involves less than ten miles of streamreach, in which less than twenty-five cubic yards of sand, gravel, or soil is removed, imported, disturbed or discharged, and in which no existing vegetation is removed except as minimally necessary to facilitate additional plantings;

(B) A project for the restoration of an eroded or unstable stream bank that employs the principles of bioengineering, including limited use of rock as a stabilization only at the toe of the bank, and with primary emphasis on using native vegetation to control the erosive forces of flowing water; or

(C) A project primarily designed to improve fish and wildlife habitat, remove or reduce impediments to migration of fish, or enhance the fishery resource available for use by all of the citizens of the state, provided that any structure, other than a bridge or culvert or instream habitat enhancement structure associated with the project, is less than two hundred square feet in floor area and is located above the ordinary high water mark of the stream.

Water Taxi: A boat used to provide public transport for passengers, with service scheduled with multiple stops or on demand to many locations. A water taxi would not include accessory facilities such as ticketing booths and would not include the transport of vehicles.

Wetlands – Those areas that are inundated or saturated by surface water or groundwater at a frequency

and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soils conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, retention and/or detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands do include those artificial wetlands intentionally created from non-wetland sites as mitigation for the conversion of wetlands.

Wetland rating - Wetlands shall be rated according to the *Washington State Wetland Rating System for Western Washington* (Department of Ecology 2004, or as revised). This document contains the definitions, methods and a rating form for determining the categorization of wetlands below:

a. Category I wetlands are those that 1) represent a unique or rare wetland type; or 2) are more sensitive to disturbance than most wetlands; or 3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or 4) provide a high level of functions. Category I wetlands include Natural Heritage wetlands, bogs, mature and old-growth forested wetlands, and wetlands that score at least 70 points on the rating form.

b. Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands, but still need a relatively high level of protection. Category II wetlands score between 51 and 69 points on the rating form.

c. Category III wetlands have a moderate level of function, scoring between 30 and 50 points on the rating form.

d. Category IV wetlands have the lowest levels of functions (scores less than 30 points on the rating form) and are often heavily disturbed. These are wetlands that can often be replaced, and in some cases improved. However, replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions, and also need to be protected.

83.46 Shoreline Jurisdiction and Official Shoreline Map

1. Shoreline Map -

   a. The adopted Shoreline Environment Designations Map is the graphic representation of the City's shorelines that are regulated by this program. The map, or set of maps, entitled City of Kirkland Shoreline Environment Designation Map and adopted by ordinance is hereby adopted as part of this code. See Chapter 141 KZC for information regarding amending this map.

   b. The adopted shoreline map identifies shoreline environment designations as well as the extent of shoreline jurisdiction.

      1) Extent of Shoreline Jurisdiction - The shoreline jurisdiction as depicted on the adopted Shoreline Environment Designations Map is intended to depict the *approximate* location and extent of known shorelands. In determining the exact location of shoreline jurisdiction, the criteria contained in RCW 90.58.030(2) shall be used. For Lake Washington, the ordinary high water mark corresponds with a lake elevation of 21.8 feet. The extent of shoreline jurisdiction on any individual lot, parcel or tract is to be determined by a field investigation and a survey and is the sole responsibility of the applicant. The location of the ordinary high water mark shall be included in shoreline permit application submittals to determine the extent of shoreline jurisdiction for review and approval by the Planning Official.

      2) Interpretation of Shoreline Environment Designations - The following shall be used to interpret the boundary of shoreline environment designations:

         a) Following Property Lines – Where a shoreline environment designation boundary is indicated as approximately following a property line, the property line is the shoreline environment designation boundary.

         b) Following Streets – Where a shoreline environment designation boundary is indicated as following a street, the midpoint of the street right-of-way is the shoreline environment designation boundary, except as follows:

            i) The portion of the public right-of-way known as 98th Avenue NE located within 200 feet of the Ordinary High Water Mark is designated wholly as Urban Mixed.

            ii) Waterfront street ends, where the public right-of-way is designated wholly under one shoreline environment.

         c) Wetlands – Where an associated wetland boundary extends beyond the area depicted on the Shoreline Environment Designation Map, the additional wetland area shall be designated the same shoreline environment as the adjoining wetland area.

         d) Lakes – The Aquatic environment designation boundary extends into Lake Washington to the full limit and territorial extent of the police power, jurisdiction and control of the City of Kirkland.

         e) Other Cases – Where a shoreline environment designation boundary is not indicated to follow a property line or street, the boundary line is as follows:

            i) The transition of the shoreline environment designation from Urban Conservancy to Urban Mixed at Juanita Beach Park occurs at a point measured 75 feet east of the ordinary high water mark of Juanita Creek.

ii) The transition of the shoreline environment designation from Urban Conservancy to Urban Residential west of Juanita Beach Park occurs at a point measured 75 feet west of the ordinary high water mark of Juanita Creek.

f) Classification of Vacated Rights-of-Way – Where a right-of-way is vacated, the area comprising the vacated right-of-way will acquire the classification of the property to which it reverts.

g) Undesignated Properties - Any shoreline areas not mapped and/or designated shall be assigned an Urban Conservancy designation, except wetlands as noted in subsection 2)c) above.

2. Shoreline Environment Designations -

a. Sections 83.100 through 83.150 establish the six shoreline environment designations used in the City of Kirkland and their respective purposes, designation criteria, and management policies. Sections 83.180 through 83.330 then establish the different regulations that apply in these different environmental designations.

b. The management policies contained in the Shoreline Chapter of the Comprehensive Plan shall be used to assist in the interpretation of these regulations.

83.100 Natural

1. Purpose - To protect and restore those shoreline areas that are relatively free of human influence or that include intact or minimally degraded shoreline functions intolerant of human use. The natural environment also protects shoreline areas possessing natural characteristics with scientific and educational interest. These systems require restrictions on the intensities and types of land uses permitted in order to maintain the integrity of the ecological functions and ecosystem-wide processes of the shoreline environment.

2. Designation Criteria – A Natural environment designation should be assigned to shoreline areas if any of the following characteristics apply:

a. The shoreline is ecologically intact and therefore currently performing an important, irreplaceable function or ecosystem-wide process that would be damaged by human activity;

b. The shoreline is considered to represent ecosystems and geologic types that are of particular scientific and educational interest; or

c. The shoreline is unable to support new development or uses without significant adverse impacts to ecological functions or risk to human safety.

83.110 Urban Conservancy

1. Purpose - To protect and restore ecological functions of open space, flood plain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses.

2. Designation Criteria - An Urban Conservancy environment designation should be assigned to shoreline areas appropriate and planned for development that is compatible with maintaining or restoring of the ecological functions of the area, that are not generally suitable for water-dependent uses and that lie in incorporated municipalities or urban growth areas if any of the following characteristics apply:

a. They are suitable for water-related or water-enjoyment uses;

b. They are open space, flood plain or other sensitive areas that should not be more intensively developed;

c. They have potential for ecological restoration;

d. They retain important ecological functions, even though partially developed; or

e. They have the potential for development that is compatible with ecological restoration.

83.120 Residential - L

1. Purpose - To accommodate low-density residential development and appurtenant structures that are consistent with this chapter.
2. Designation Criteria - A Residential - L environment designation should be assigned to shoreline areas inside urban growth areas, as defined in RCW 36.70A.110, and incorporated municipalities if they are predominantly single-family residential development or are planned and platted for low-density residential development, unless these areas meet the designation criteria for the Natural shoreline environment designation.

83.130 Residential - M/H

1. Purpose - To accommodate medium and high-density residential development and appurtenant structures that are consistent with this chapter. An additional purpose is to provide appropriate public access and recreational uses, as well as limited water-oriented commercial uses which depend on or benefit from a shoreline location.
2. Designation Criteria - A Residential - M/H environment designation should be assigned to shoreline areas inside urban growth areas, as defined in RCW 36.70A.110, and incorporated municipalities if they are predominantly multifamily residential development or are planned and platted for medium or high-density residential development, unless these properties meet the designation criteria for the Natural or Urban Conservancy shoreline environment designation.

83.140 Urban Mixed

1. Purpose - To provide for high-intensity land uses, including residential, commercial, recreational, transportation and mixed-used developments. The purpose of this environment is to ensure active use of shoreline areas that are presently urbanized or planned for intense urbanization, while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded.
2. Designation Criteria - An Urban Mixed environment designation should be assigned to shoreline areas within incorporated municipalities and urban growth areas if they currently support high-intensity uses related to commerce, transportation or navigation; or are suitable and planned for high-intensity water-oriented uses.

83.150 Aquatic

1. Purpose - To protect, restore, and manage the unique characteristics and resources of the areas waterward of the ordinary high water mark.
2. Designation Criteria - An Aquatic environment designation should be assigned to lands waterward of the ordinary high-water mark.

83.160 User Guide

1. Explanation of Uses Table

   a. The table contained in KZC 83.165 identifies uses and activities and defines whether those uses are prohibited, permitted by application for Exemption or Shoreline Substantial Development Permit, or permitted by a Shoreline Conditional Use Permit. If a use if not specifically listed, then it may be considered through a Shoreline Conditional Use Permit (see Chapter 141). The following symbols apply:

      1) "X" means that the use or activity is prohibited in the identified Shoreline Environment. Shoreline uses, activities, or conditions listed as prohibited shall not be authorized through a variance, conditional use permit, or any other permit or approval.

      2) "SD" means that the use or activity may be permitted by approval by the Planning Official through a Letter of Shoreline Exemption (see KZC Chapter 141) or through a Shoreline Substantial Development Permit (see KZC Chapter 141).

      3) "CU" means that the use or activity may be permitted by approval of the Planning Official and Department of Ecology through a Shoreline Conditional Use Permit (see KZC Chapter 141). Uses that are not specifically prohibited under KZC 83.165 may be authorized through a Shoreline Conditional Use Permit.

      4) Shoreline Variances (see Chapter 141) are intended only to grant relief from specific bulk, dimensional or performance standards in the Shoreline Master Program, NOT to authorize shoreline uses and activities. They are therefore not included in KZC 83.170.

83.170 Shoreline Environments, Permitted and Prohibited Uses and Activities Chart

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
SHORELINE USE						
Resource Land Uses						
Agriculture	X	X	X	X	X	X
Aquaculture	X	X	X	X	X	X
Forest practices	X	X	X	X	X	X
Mining	X	X	X	X	X	X
Commercial Uses						
Water-dependent uses						
Float plane landing and mooring facilities[1]	X	X	X	X	CU	adjacent upland environmen
Water-related, water-enjoyment commercial uses						
Any water-oriented Retail Establishment other than those specifically listed in this chart, selling goods or providing services.	X	SD[2]	X	X	SD	X

[1] Limited to water-based aircraft facilities for air charter operations.
[2] Permitted as an accessory use to a Public Park.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Retail Establishment providing new or used Boat Sales or Rental	X	SD[2]	X	CU[3,5]	SD[4]	adjacent upland environme
Retail establishment providing gas and oil sale for boats	X	X	X	CU[3,5]	CU[5]	adjacent upland environme
Retail establishment providing boat and motor repair and service	X	X	X	CU[3,5]	CU[5]	X
Restaurant or Tavern[6]	X	X	X	CU[3]	SD	X
Concession Stand	X	SD[2]	X	X	SD[2]	X
Entertainment or cultural facility	X	CU[7]	X	X	SD	X
Hotel or Motel	X	X	X	CU[8]/X	SD	X
Nonwater-oriented, nonwater-dependent uses						

[3] Permitted if located on the west side of Lake Washington Lake Blvd NE/Lake St S south of Lake Avenue West and north of NE 52nd Street.
[4] Permitted in the Juanita Business District or as an accessory use to a marina.
[5] Accessory to a marina only.
[6] Drive-in or drive-through facilities are prohibited.
[7] Use must be open to the general public.
[8] Permitted in Planned Area 3B established in the Lakeview Neighborhood Plan only.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Any Retail Establishment other than those specifically listed in this chart, selling goods, or providing services including banking and related services	X	X	X	X	SD[9]	X
Office Uses	X	X	X	X	SD[9]	X
Neighborhood-oriented Retail Establishment	X	X	X	CU[10]	SD[9]	X
Private Lodge or Club	X	X	X	X	SD[9]	X
Vehicle Service Station	X	X	X	X	X	X
Automotive Service Center	X	X	X	X	X	X
Dry land boat storage	X	X	X	X	X	X

[9] Permitted as part of mixed-use development containing water-oriented uses, where there is intervening development between the shoreline and the use, or if located on the east side of Lake Washington Blvd NE/Lake St S or the east side of 98th Avenue NE.
[10] Permitted if located on the east side of Lake Washington Blvd NE between NE 60th Street and 7th Ave S.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
~~**Industrial Uses**~~						
~~**Water-dependent uses**~~	~~X~~	~~X~~	~~X~~	~~X~~	~~CU~~	~~adjacent upland environme~~
~~**Water-related uses**~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
~~**Nonwater-oriented uses**~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
Recreational Uses						
Water-dependent uses						
Marina[11]	X	CU	X	SD	SD	See adjacent upland environments
Piers, docks, boat lifts and canopies serving Detached Dwelling Unit[11]	X	X	SD	SD	SD[15]	
Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units [11]	X	X	X	SD	SD	
Float	X	SD[2]	X	X	SD[2]	

[11] No boat moored in or off the shoreline of Kirkland shall be used as a place of habitation.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Tour Boat Facility	X	X	X	X	SD[12]	
Moorage buoy[11]	X	SD	SD	SD	SD	
Public Access Pier or Boardwalk	CU	SD	SD	SD	SD	
Boat launch (for motorized boats)	X	X	X	X	CU	
Boat launch (for non-motorized boats)	SD	SD	SD	SD	SD	
Boat houses or other covered moorage not specifically listed	X	X	X	X	X	
Water-related, water-enjoyment uses						
Any water-oriented recreational development other than those specifically listed in this chart	X	CU	CU	CU	SD	X
Other Public Park Improvements[13]	CU	SD	SD	SD	SD	X
Public Access Facility	SD[14]	SD	SD	SD	SD	See adjacent

[12] Permitted as an accessory use to a Marina or Public Park only.
[13] This use does not include other public recreational uses or facilities specifically listed in this chart
[14] Limited to trails, viewpoints, interpretative signage and similar passive and low-impact facilities.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Nonwater-oriented uses						
Nonwater-oriented recreational development.	X	X	X	X	SD[9]	X
Residential Uses						
Detached dwelling unit	CU	CU	SD	SD	SD[15]	X
Accessory dwelling unit[16]	X	X	SD	SD	SD[15]	X
Detached, Attached or Stacked Dwelling Units	X	X	X	SD	SD	X
Houseboats	X	X	X	X	X	X
Assisted Living Facility[17]	X	X	X	CU	SD	X
Convalescent Center or Nursing Home	X	X	X	CU[18]	SD[19]	X
Land division	SD[20]	SD[20]	SD	SD	SD	X
Institutional Uses						

[15] Permitted if located south of NE 60th Street only.
[16] One accessory dwelling unit (ADU) is permitted as subordinate to a single-family dwelling
[17] A nursing home use may be permitted as part of an assisted living facility use.
[18] Permitted if located on the east side of Lake Washington Blvd NE/Lake St S, or the east side of 98th Avenue NE.
[19] Not permitted in the Central Business District. Otherwise, permitted if located on the east side of Lake Washington Blvd NE/Lake St S, the east side of 98th Avenue NE or on the south side of NE Juanita Drive.
[20] May not create any new lot that would be wholly contained within shoreland area in this shoreline environment.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Float plane landing and mooring facilities (public)	X	X	X	X	CU	adjacent upland environm
Government Facility	X	SD	SD	SD	SD	X
Community Facility	X	X	X	X	SD	X
Church	X	X	X	CU[18]	SD[19]	X
School or Day-Care Center	X	X	X	CU[18]	SD[9]	X
Mini-School or Mini-Day-Care Center	X	X	X	SD[18]	SD[9]	X
Transportation						
Water-dependent						
Bridges	CU	CU	SD	SD	SD	See adjacent upland environments
Passenger-only Ferry terminal	X	X	X	X	CU	
Water Taxi	X	SD[21]	SD[21]	SD[21]	SD[21]	
Nonwater-oriented						

[21] Permitted as an accessory use to a marina or a public park.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Arterials, Collectors, and neighborhood access streets	CU	SD[22]/CU	SD	SD	SD	X
Helipad	X	X	X	X	X	X
Utilities						
Utility production and processing facilities	X	CU[23]	CU[23]	CU[23]	CU[23]	X
Utility transmission facilities	CU[23]	SD[23]	SD[23]	SD[23]	SD[23]	CU[23]
Personal Wireless Service Facilities[24]	X	SD	SD	SD	SD	X
Radio Towers	X	X	X	X	X	X
SHORELINE MODIFICATIONS						
Breakwaters/jetties/rock weirs/groins	X	X	X	SD[25]/CU	SD[25/]CU	See adjacent upland environments
Dredging and dredge materials disposal	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	
Fill waterward of the ordinary high water mark	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	
Land surface modification	SD[25]/CU	SD	SD	SD	SD	

[22] Construction of pedestrian and bicycle facilities only.
[23] This use may be allowed provided there is no other feasible route or location.
[24] New towers are not permitted.
[25] Permitted under a substantial development permit when associated with a restoration or enhancement project.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Shoreline habitat and natural systems enhancement projects	SD	SD	SD	SD	SD	
Hard Structural Shoreline Stabilization	X	CU	SD	SD	SD	
Soft Shoreline Stabilization Measures	X	SD	SD	SD	SD	

.

83.180 Shoreline Development Standards

1. General - Except as otherwise stated, the long range plan, zoning regulations, critical areas regulations, subdivision regulations, and other adopted regulatory provisions apply within shoreline jurisdiction. In the event the provisions of this Program conflict with provisions of other city regulations, the more protective of shoreline resources shall prevail.

2. Development Standards Chart - The following chart establishes the minimum required dimensional requirements for development. KZC Section 83.170 contains an overview of the activities permitted under each of the use classifications contained in the development standards chart. Additional standards may be established in Sections 83.190 through 83.260. Dimensional standards specified in this Chapter shall not exceed the geographic limit of the shoreline jurisdiction, except as noted in the provisions contained below.

SHORELINE DEVELOPMENT STANDARDS

83.180. 3

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
Residential Uses						
Detached Dwelling Units and Accessory Dwelling Units						
Minimum Lot Size	n/a	12,500 sq. ft.	12,500 sq. ft.	12,500 sq. ft. except for the following: • 5,000 sq. ft. if located on east side of Lake St S, at 7th Ave S; and • 7,200 sq. ft. if subject to the Historic Preservation provisions of KMC 22.28.048	3,600 sq. ft.	3,600 sq. ft.
Shoreline Setback	n/a	Thirty (30) % of the average	Outside of shoreline area, if possible, otherwise 50'.	Thirty ~~five~~ (30~~5~~) % of the average parcel depth, except in no case is the shoreline	The greater of: a. 25' or b. 15% of the average	The greater of: a. 25' or b. 15% of the average parcel

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed
		parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this		setback permitted to be less than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter.. For those properties located along Lake Ave W south of the Lake Ave W street end park, the following standard shall apply: If dwelling units exist immediately adjacent both to the north and south of the subject property, the shoreline setback of the primary structure on the subject property is	parcel depth.	depth.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed
		Chapter..		increased or decreased to be the average of the shoreline setback of these adjacent dwelling units, to a minimum of 15 feet. If a dwelling unit does not adjoin the property, then the setback of the adjoining property for the purposes of determining an average shall be based upon 30% of the average parcel depth.		
Maximum Lot Coverage	n/a	50%	50%	50%	60%	80% except for the following: • In the CBD, 100% for properties that do not abut Lake Washington; otherwise 90%

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
Maximum Height of Structure[28]	n/a	25' above ABE[26]	35' above ABE.	25' above ABE	35' above ABE.	35' above ABE
Other Residential Uses (Attached, Stacked, and Detached Dwelling Units; Assisted Living Facility; Convalescent Center or Nursing Home)						
Density[27]	n/a	n/a	n/a	n/a	1,800 sq. ft./unit for up to 2 dwelling units if the public access provisions of KZC 83.390 are met; otherwise 3,600 sq. ft./unit	No minimum lot size in CBD; otherwise 1,800 sq. ft./unit
Shoreline Setback	n/a	n/a	n/a	n/a	The greater of: a. 25' or b. 15% of the average parcel depth.	The greater of: a. 25' or b. 15% of the average parcel depth. In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.
Maximum Lot Coverage	n/a	n/a	n/a	n/a	80%	80% except for the following: • In the CBD, 100% on

[26] Structure height may be increased to 30' above ABE. See KZC 83.180.6.c.1)a).
[27] For density purposes, two assisted living units shall constitute one dwelling unit.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed
						properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[28]	n/a	n/a	n/a	n/a	30' above ABE[29]	41' above ABE, except for the following: • In the CBD, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property if located on the east side of Lake St S.In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.[30]
Commercial Uses						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a
Shoreline Setback	n/a	n/a	Water-dependent	n/a	The greater of:	The greater of:

[28] The height limit is restricted to that portion of the building physically located within the shoreline jurisdiction and applies to landward structures only. Permitted increases in building height are addressed in KZC 83.180.6.c).
[29] Structure height may be increased to 35' above ABE. See KZC 83.180.6.c.1)b).
[30] See KZC 83.180.6.c.1)d).

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
			uses: 0 – 16', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shoreline area, if possible, otherwise 50'.		a. 25' or b. 15% of the average parcel depth.	a. 25' or b. 15% of the average parcel depth. In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.
Maximum Lot Coverage	n/a	n/a	50%	n/a	80%	80% except for the following: • In the CBD, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[28]	n/a	n/a	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30' above ABE.[29]	n/a	30' above ABE[29]	41' above ABE, except for the following: • In the CBD, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property if located on the east side of Lake St S. • In the PLA 15A zone located south of NE 52nd

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed
						Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions. • [31]
~~Industrial Uses~~						
~~Minimum Lot Size~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~
~~Shoreline Setback~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~The greater of:~~ ~~a. 25' or~~ ~~b. 15% of the average parcel depth.~~
~~Maximum Lot Coverage~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~80% except for the following:~~ • ~~In the CBD, 100% on properties that do not abut Lake Washington; otherwise 90%~~
~~Maximum Height of Structure~~[28]	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~n/a~~	~~41' above ABE, except for the following:~~ ~~•In the CBD, 55' above the abutting right-of-way measured at the midpoint~~

[31] See KZC 83.180.6.c.1)d).

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
						~~of the frontage of the subject property if located on the east side of Lake St S.~~ • ~~In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.~~
Recreational Uses						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a
Shoreline Setback	n/a	Water-dependent uses: 0 – 16', Water-related use: 25', Water-enjoyment use: 30',	Water-dependent uses: 0 – 16', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shoreline area, if possible, otherwise 50'.	Thirty-five (35) % of the average parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter..	The greater of: a. 25' or b. 15% of the average parcel depth.	The greater of: a. 25' or b. 15% of the average parcel depth. In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
		Other uses: Outside of shoreline area, if possible, otherwise 50'.				
Maximum Lot Coverage	n/a	10%	30%	30%	80%	80% except for the following: • In the CBD, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[28]	n/a	25' above ABE	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30' above ABE[29]	25' above ABE	30' above ABE[29]	41' above ABE, except for the following: • In the CBD, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property if located on the east side of Lake St S. • In the PLA 15A zone

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
						located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.
Institutional Uses						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a
Shoreline Setback	n/a	n/a	Outside of shoreline area, if possible, otherwise 50'.		The greater of: a. 25' or b. 15% of the average parcel depth.	The greater of: a. 25' or b. 15% of the average parcel depth.
Maximum Lot Coverage	n/a	n/a	50%	50%	80%	80% except for the following: • In the CBD, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum height of structure[28]	n/a	n/a	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30'	25' above ABE	30' above ABE[29]	41' above ABE, except for the following: • In the CBD, 55' above the abutting right-of-way measured at the midpoint of the frontage of the

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
			above ABE[29]			subject property if located on the east side of Lake St S.
Transportation						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a
Shoreline Setback	n/a		Outside of shoreline area, if possible, otherwise 50'.	Thirty-five (35) % of the average parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter..	The greater of: a. 25' or b. 15% of the average parcel depth.	The greater of: a. 25' or b. 15% of the average parcel depth.
Maximum Lot Coverage	n/a	n/a	n/a	n/a	n/a	n/a
Maximum Height of Structure[28]	n/a	n/a	n/a	n/a	n/a	n/a
Utilities						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**
Shoreline Setback	n/a	Outside of shoreline area, if possible, otherwise 50'.	Outside of shoreline area, if possible, otherwise 50'.	Thirty-five (35) % of the average parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter..	The greater of: a. 25' or b. 15% of the average parcel depth.	The greater of: a. 25' or b. 15% of the average parcel depth.
Maximum Lot Coverage	n/a	5%	30%	50%	80%	80% except for the following: • In the CBD, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[28]	n/a	25' above ABE	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30' above ABE[29]	25' above ABE	30' above ABE[29]	41' above ABE, except for the following: • In the CBD, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property if located

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed
						on the east side of Lake St S. • In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.

3. Calculation of Minimum Lot Size or Density –

   a. May not use lands waterward of the ordinary high watermark to determine lot size or to calculate allowable density.

   b. For properties that are only partially located within the shoreline jurisdiction, the allowed density within the shoreline jurisdiction shall be based upon the land area located within the shoreline jurisdiction only. If dwelling units would only be partially located within the shoreline jurisdiction, the City may approve an increase in the actual number of units in the shoreline jurisdiction, as permitted under the density standards established in subsection b) above, provided that the equivalent square footage of all of the units within the shoreline jurisdiction, based upon the average unit size in the proposed on the subject property, is no greater than could be achieved under the maximum permitted density.

   c. If a maximum density standard is used, 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 0.66.

   d. For detached dwelling units, the provisions addressing lot size, lot size averaging, and historic preservation contained in Chapter 22.28 KMC shall apply within the shoreline jurisdiction.

4. Shoreline Setback –

   a. General – This section establishes what structures, improvements, and activities may be in or take place in the shoreline setback established for each use in each shoreline environment.

   b. Measurement of Shoreline Setback –

      1) The shoreline setback shall be measured landward from the ordinary high water mark on the horizontal plane and in the direction that results in the greatest dimension from the ordinary high water mark (see Plate XX).

      2) In those instances where the OHWM moved further upland in accordance with permits involving a shoreline habitat and natural systems enhancement project approved by the City or a state or federal agency, the shoreline setback shall be measured from the location of the ordinary high water mark that existed immediately prior to the enhancement project.

   c. Exceptions and Limitations in Some Zones – KZC Sections 83.190 through 83.250 contain specific regulations regarding what may be in or take place in the shoreline setback. Where applicable, those specific regulations supersede the provisions of this section.

   d. Structures and Improvements – The following improvements or structures may be located in the shoreline setback, provided that they are constructed and maintained in a manner that minimizes adverse impacts on shoreline functions and processes:

      1) Walkways, benches, and similar features, as determined by the Planning Official, which are part of the public pedestrian access required under KZC 83.390.

      2) Walkways within the shoreline setback that provide private access to the shoreline are permitted, subject to the following standards:

         a) The maximum width of the walkway corridor may be no more than 25 percent of the property's lake frontage, except in no case is the corridor required to be less than 15 feet in width (see Plate XX).

         b) The shoreline access shall be located to avoid areas of greater ecological and habitat value.

c) The walkway shall be constructed of a permeable walking surface, such as unit pavers, grid systems, porous concrete, or equivalent material approved by the Planning Official.

d) The walkway corridor may contain minor improvements such as garden sculpture, light fixtures, trellises and similar decorative structures that are associated with the walkway, provided that these improvements comply with the dimensional limitations required for the walkways and any view corridor requirements under KZC Section 83.380. Light fixtures approved under this subsection shall comply with the provisions contained in KZC 83.440.

3) Those portions of water-dependent development that require improvements adjacent to the water's edge, such as fueling stations for retail establishments providing gas sales, haul-out areas for retail establishments providing boat and motor repair and service, boat ramps for boat launches or other similar activities.

4) Public access facilities or other similar public water-enjoyment recreational uses.

5) Underground utilities accessory to a shoreline use approved by the Planning Official, provided there is no other feasible route or location.

6) Bioretention swales, rain gardens, or other similar bioretention systems that allow for filtration of water through planted grasses or other native vegetation.

7) Infiltration systems, provided that installation occurs as far as feasible from the ordinary high water mark.

8) Bay windows, greenhouse windows, eaves, cornices, awnings, and canopies may extend up to 18 inches into the shoreline setback, subject to the limitations of this section. Eaves on bay windows may extend an additional 18 inches beyond the bay window. Chimneys that are designed to cantilever or otherwise overhang are permitted. The total horizontal dimension of the elements that extend into the shoreline setback, excluding eaves and cornices, may not exceed 25 percent of the length of the facade of the structure.

9) Decks, patios and similar improvements may extend up to 10 feet into the shoreline setback but no closer than 25 feet to the ordinary high water mark, subject to the following standards:

a) The feature shall be constructed of a permeable surface, such as wood with gaps between boards and a pervious surface below, unit pavers, grid systems, porous concrete, or equivalent material approved by the Planning Official.

b) The total horizontal dimension of the elements that extend into the shoreline setback may not exceed ~~25~~ 50 percent of the length of the facade of the structure.

c) The ~~improvement may not extend more than 18 inches above finished grade~~improvement shall be located on the ground floor of the building and shall not be elevated more than necessary to allow for grade transition from the residence to the deck or to follow the existing topography.

10) Retaining walls and similar structures that are no more than four feet in height above finished grade; provided the following standards are met:

a) The structure shall be designed so that it does not interfere with the shoreline vegetation required to be installed under the provisions of KZC 83.370; and

b) These structures shall not be installed to provide the function of a shore erosion control structure unless approved under the provisions of KZC 83.300.

11) In the Urban Mixed shoreline environment, balconies at least 15 feet above finished grade may extend up to 4 feet into the shoreline setback.

12) Bridges and other essential public facilities that must cross shorelines.

13) Parking as authorized by the Planning Official under the provisions of KZC 83.420.3.

14) Shoreline stabilization measures approved under the provisions of KZC 83.300.

5. Maximum Lot Coverage –

a. General –

1) The area of all structures and pavement and any other impervious surface on the subject property will be calculated under either of the following, at the discretion of the applicant:

a) A percentage of the total lot area of the subject property, or

b) A percentage of the area of the subject property located within the shoreline jurisdiction.

2) If the subject property contains more than one use, the maximum lot coverage requirements for the predominant use will apply.

3) In those instances where the OHWM moved further upland in accordance with permits involving a shoreline habitat and natural systems enhancement project approved by the City, or a state or federal agency, the lot area for purposes of calculating lot coverage shall be measured from the location of the ordinary high water mark that existed immediately prior to the enhancement project.

b. Exceptions – The exceptions contained in Chapter 115 KZC shall apply within the shoreline jurisdiction.

6. Height Regulations –

a. General –

1) KZC 83.180.3, Development Standards Chart, establishes the maximum allowed building height for all primary and accessory structures.

2) If the subject property contains more than one use contained within a building, the maximum height standard for the predominant use will apply to the building.

3) Maximum building height shall be measured from an average building elevation (ABE), calculated under the methods described in KZC 115.59 and depicted in Plates 17A and 17B. The calculation of ABE shall be based on all wall segments of the structure, whether or not the segments are located within the shoreline jurisdiction.

4) In the CBD, maximum building height shall be measured from the midpoint of the abutting right-of-way. For purposes of measuring building height above the abutting right(s)-of-way, alleys shall be excluded.

5) Pursuant to RCW 90.58.320, no permit may be issued for any new or expanded building or structure more than 35 feet above average grade level that will obstruct the view of a substantial number of residences on or adjoining the shoreline except where this Chapter does not prohibit a height of more than 35 feet and only when overriding considerations of the public interest will be served. The applicant shall be responsible for providing sufficient information to the City to determine whether such development will obstruct the view of a substantial number of residences on or adjoining such shorelines. For the purposes of this provision, average grade level is equivalent to and shall be calculated under the method for calculating average building elevation established in Option B as described in KZC 115.59 and depicted in Plate 17B.

b. Exceptions –

1) No element or feature of a structure, other than the appurtenances listed below, may exceed the applicable height limitation established for each use in each shoreline environment. The following appurtenances shall be located and designed so that views from adjacent properties will not be significantly blocked.

a) Antennas, chimneys, and similar appurtenances, but not including personal wireless service facilities, which are subject to the provisions of Chapter 117 KZC.

b) Rooftop appurtenances and their screens.

c) Decorative parapets or peaked roofs approved through design review pursuant to Chapter 142 KZC.

c. Permitted Increases in Height – The following permitted increases in height shall be reviewed by the City as part of the shoreline permit required for the proposed development activity.

1) The maximum structure height established in KZC 83.180.3, Development Standards Chart, may be increased in the following circumstances:

a) In the Natural shoreline environment, the structure height of a detached dwelling unit may exceed the standard height limit, when approved with a shoreline conditional use permit, by a maximum of 5 feet aver average building elevation in order to reduce the footprint of the building which lessens the impact on a sensitive area and sensitive area buffer. 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 exception.

b) In the Residential – M/H and Urban Conservancy shoreline environments located south of Market Street, the structure height of a commercial, recreational, institutional, utility or residential use, other than a detached dwelling unit, may be increased to 35 feet above average building elevation if:

i) Obstruction of views from existing development lying east of Lake St S or Lake Washington Boulevard is minimized. The applicant shall be responsible for providing sufficient information to the City to evaluate potential impacts to views; and either

ii) The increase is offset by a view corridor that is superior to that required by KZC Section 83.380; or

iii) The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation.

c) Properties in the PLA 15A zone in the UM Shoreline Environment which contain mixed use development where building heights have been previously established under an approved Master Plan shall comply with the building height requirements as approved. Modifications to the approved building heights shall be considered under the standards established in the Master and in consideration of the compatibility with adjacent uses and the degree to which public access, use and views are provided.

d) In all shoreline environments, the maximum height may be increased up to 35 feet if the City approves a Planned Unit Development under the provisions of KZC Chapter 125.

General Use Standards

83.190 General Use Standards

1. Uses in the shoreline shall be designed, located, sized, and constructed to achieve no net loss of shoreline ecological functions. Where adverse impacts to ecological functions cannot be avoided, mitigation shall be provided to achieve no net loss of shoreline ecological functions. Failure to meet this standard may result in permit denial. The City may request necessary studies by qualified professionals to determine compliance with this standard.

2. All work at or waterward of the ordinary high water mark requires permits or approvals from one or more of the following state and federal agencies: U.S. Army Corps of Engineers, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, or Washington

Department of Ecology. Documentation verifying necessary state and federal agency approvals must be submitted to the City prior to issuance of a shoreline permit, including shoreline exemption. All activities within shoreline jurisdiction must comply with all other regulations as stipulated by State and Federal agencies, local Tribes, or others that have jurisdiction.

3. Uses in the shoreline shall be sited, designed, and configured in a manner that avoids the need for new shoreline stabilization or flood hazard reduction measures.
4. Uses in the shoreline shall be designed, located and managed to prevent significant adverse impacts on water quality, fish and wildlife habitat, and the environment.
5. Buildings located in the Urban Mixed Shoreline environment shall incorporate architectural features that reduce scale and apparent mass such as setbacks, pitched roofs, recesses, variety in materials, textures, pattern or color and other techniques and may be subject to the City's adopted Design Guidelines contained in Chapter 92 KZC.
6. Minimum required setbacks from shorelines, maximum height limits and lot coverage requirements are contained in KZC 83.180.
7. Special use standards are contained as notes to the Shoreline Environments, Permitted Uses and Activities Chart contained in KZC Section 83.170 as well as in the standards contained in KZC Section 83.190 through 83.260.
8. Harming, harassing, or otherwise endangering any native wildlife species within critical areas or shoreline setbacks, other than fishing under WDFW license or treaty, is prohibited, unless otherwise approved by the City.

Residential Development

83.200 Residential Development

1. General – No residential use may occur over water, including houseboats, live-aboards, or other single- or multi-family dwelling units.
2. Detached Dwelling Units - Not more than one dwelling unit may be on each lot, regardless of the size of each lot.
3. Accessory Structures or Uses - Accessory uses and structures shall be located landward of the principal residence, unless the structure is or supports a water-dependent use.

Commercial Uses

83.210 Commercial Uses

1. Float plane landing and mooring facilities –
   a. Use of piers for commercial float plane service shall be allowed only in public or private marinas and shall be subject to a conditional use permit.
   b. Any shoreline conditional use permit for float plane use shall specify:
      1) Taxiing patterns to be used by float planes that will minimize noise impacts on area residents and wildlife and minimize interference with navigation and moorage;
      2) Fuel spill and oil spill clean-up materials and firefighting equipment commensurate with the size of the facility and use by float planes; and
      3) Hours of operation may be limited as necessary to limit impacts on area residents.
   c. Float plane facilities and services shall conform to all applicable City codes and Federal Aviation Administration standards and requirements for fuel, oil spills, safety and firefighting equipment, noise, and pedestrian and swimming area separation.
2. Retail establishment providing new or used Boat Sales or Rental – Outdoor boat parking and storage areas must be buffered as required for a parking area under the provisions of KZC 83.420.

3. Retail establishment providing gas and oil sale for boats –
   a. The location and design of fueling facilities must meet applicable state and federal regulations.
   b. Storage of petroleum products shall not be located over water.
   c. Storage tanks shall be located underground and shall comply with state and federal standards for Underground Storage Tanks.
   d. Fueling stations shall be located and designed to allow for ease of containment and spill cleanup.
   e. New fueling facilities shall incorporate the use of automatic shutoffs on fuel lines and at hose nozzles to reduce fuel loss.
   f. Facilities, equipment and established procedures for the containment, recovery and mitigation of spilled petroleum products shall be provided.
4. Retail establishment providing boat and motor repair and service –
   a. Storage of parts shall be conducted entirely within an enclosed structure.
   b. If hull scraping, boat painting, or boat cleaning services are provided, boats shall be removed from the water and debris shall be captured and properly disposed of.
   c. Repair and service activities shall be conducted on dry land and either totally within a building or totally sight screened from adjoining property and the right-of-way.
   d. All dry land motor testing shall be conducted within a building.
   e. An appropriate storage, transfer, containment, and disposal facility for liquid material, such as oil, harmful solvents, antifreeze, and paints shall be provided and maintained.
   f. Facilities, equipment and established procedures for the containment, recovery and mitigation of spilled petroleum or hazardous products shall be provided.
5. Restaurant or Tavern –
   a. The design of the site must be compatible with the scenic nature of the waterfront. If the development will result in the isolation of a detached dwelling unit, site design, building design, and landscaping must mitigate the impacts of that isolation.
   b. Drive-in or drive-through facilities are prohibited.

~~Industrial Uses~~

~~83.220Industrial Uses~~

~~1.In addition to the perimeter buffering and fencing provisions established in KZC Chapter 95, the applicant shall screen all outdoor storage and activity areas from required public pedestrian pathways or public use areas with a minimum six-foot-high solid screening fence and perimeter buffer landscaping or other appropriate screening approved by the City.~~

~~2.Storage of industrial equipment or materials shall not be located within the shoreline setback.~~

~~3.Disposal or storage of solid or other industrial wastes is not permitted.~~

~~4.~~1. ~~Hazardous materials or liquid materials shall be properly stored and contained in conformance with all applicable City, state and federal standards.~~

Recreational Uses

83.230 Recreational Development

1. General

a. Motorized Boats -

1) Power-operated boats and jet skis are prohibited within restricted areas designated in Juanita and Yarrow Bays, as delineated by buoys and signage.

2) Power-operated boats and jet skis on Lake Washington operated within 100 yards of the any shoreline, pier, restricted area or shore installation shall not exceed the speed limits established in KMC Chapter 14.24, Operation of Watercraft.

b. Private recreational floats/swim platforms are not permitted.

2. Marina – See standards contained in KZC Section 83.290.

3. Piers – See standards contained in KZC Section 83.280.

4. Boatlifts – See standards contained in KZC Section 83.280.

5. Canopies – See standards contained in KZC Section 83.280.

6. Tour Boat Facility – Tour Boat Facilities shall be designed to meet the following standards:

a. Size – The City will determine the maximum capacity of the tour boat facility based on the following factors:

1) The suitability of the environmental conditions.

2) The ability of the land landward of the high waterline to accommodate the necessary support facilities.

b. Moorage structures supporting a tour boat facility shall comply with the moorage structure location standards and design standards for Marinas in KZC Section 83.290.

c. An on-site passenger loading area must be provided. The City shall determine the appropriate size of the loading area on a case-by-case basis, depending on the capacity of the tour boat and the extent of the abutting right-of-way improvements.

d. Buildings and structures which house passengers, employees and equipment storage shall not be permitted over water.

e. Tour boat facilities shall comply with applicable state and/or federal laws, including but not limited to those for registration, licensing of crew and safety regulations.

f. Tour boat facilities operated accessory to public parks shall comply with the standards in Chapter 14.36 KMC.

7. Moorage Buoy or Pilings – See standards contained in KZC Section 83.280.

8. Public Access Pier or Boardwalk –

a. Public Access Piers or Boardwalks shall be designed to prevent significant impacts to sensitive natural systems and shall prevent the net loss of ecological functions.

b. No accessory uses, buildings, or activities are permitted as part of this use.

c. If a structure will extend waterward of the Inner Harbor Line, the applicant must obtain an aquatic use authorization from Washington State Department of Natural Resources prior to submittal of a building permit for this use.

d. Must provide at least one covered and secured waste receptacle upland of the ordinary high water mark.

e. All utility and service lines located waterward of the ordinary high water mark must be below the pier deck. All utility and service lines located upland of the ordinary high water mark shall be underground, where feasible.

f. Piers shall be marked with reflectors, or otherwise identified to prevent unnecessarily hazardous conditions for water surface users during the day or night.

g. Structures must display the street address of the subject property. The address must be oriented to the lake with letters and numbers at least four inches high and visible from the lake.

h. No moorage structure may be within 10 feet of a north of south property line, except that setbacks between moorage structures and north and south property lines may be decreased for over-water public use facilities which connect with waterfront public access on adjacent property; or

i. Moorage structures shall be separated from the outlet of a stream, including piped streams, by the maximum extent possible, while meeting other required setback standards established under this section.

j. Pier structures shall comply with the moorage structure design standards for Marinas in KZC Section 83.290.3.b.2), except as follows:

1) Primary walkways and floats may be no wider than 8 feet.

9. Boat Launch (for non-motorized boats) –

a. Location Standards – Boat launches for non-motorized boats shall be sited so that they do not significantly damage fish and wildlife habitats and shall not occur in areas with native emergent vegetation. Removal of native upland vegetation shall be minimized to the greatest extend feasible.

b. Size - The applicant shall demonstrate that the proposed size of the boat launch is the minimum necessary to safely launch the intended craft.

c. Design Standards – Boat launches for non-motorized boats shall be constructed of gravel or other similar natural material.

10. Boat Launch (for motorized boats) -

a. Location Standards –

1) Boat launches may not be approved in cases when it can be reasonably foreseeable that the development or use would require maintenance dredging during the life of the development or use.

2) Boat launches shall be designed and located according to the following criteria:

a) Boat launches shall be separated from existing swimming areas.

b) They shall not damage fish and wildlife habitats.

c) They shall be located only at sites with suitable transportation and access. The applicant must demonstrate that traffic generated by such a facility can be safely handled by the streets serving the boat launch.

3) A boat launch may not be located within 25′ of a moorage structure not on the subject property; or within 50’ of the outlet of a stream, including piped streams.

b. Size - The applicant shall demonstrate that the proposed length of the ramp is the minimum necessary to safely launch the intended craft. In no case shall the ramp extend beyond the point where the water depth is six (6) feet below the OHWM.

c. Design Standards –

1) Preferred ramp designs, in order of priority, are:

a) Open grid designs with minimum coverage of lake substrate.

b) Seasonal ramps that can be removed and stored upland.

c) Structures with segmented pads and flexible connections that leave space for natural beach substrate and can adapt to changes in shoreline profile.

2) The design shall comply with all regulations as stipulated by State and Federal agencies, local Tribes, or others that have jurisdiction.

d. Boat launches shall provide trailer spaces, at least 10 feet by 40 feet, commensurate with projected demand.

11. Public Park - Recreation developments that support high-intensity activities as a primary use, such as sporting events, shall be located outside of shoreline jurisdiction to the extent feasible.

12. Public Access Facility -

a. Fragile and unique shoreline areas with valuable ecological functions, such as wetlands and wildlife habitats, shall be used only for non-intensive recreation activities such as trails, viewpoints, interpretative signage and similar passive and low-impact facilities.

b. Physical public access shall be located and designed to prevent significant impacts to sensitive natural systems and the net loss of shoreline ecological functions.

Transportation Facilities

83.240 Transportation Facilities

1. General -

a. Transportation facilities shall utilize existing transportation corridors whenever possible; provided, that facility additions and modifications will not adversely impact shoreline resources and are otherwise consistent with this program. If expansion of the existing corridor will result in significant adverse impacts, then a less disruptive alternative shall be utilized.

b. When permitted within shoreline areas, transportation facilities must be placed and designed to minimize negative aesthetic impacts upon shoreline areas and to avoid and minimize impacts to existing land uses, public shoreline views, public access, and the natural environment.

c. Transportation and utility facilities shall be required to make joint use of rights-of-way, and to consolidate crossings of water bodies to minimize adverse impacts to the shoreline.

d. Transportation facilities located in shoreline areas must be designed and maintained to prevent erosion and to permit the natural movement of surface water.

2. Construction and Maintenance –

a. All debris and other waste materials from roadway construction and maintenance shall be disposed of in such a way as to prevent their entry into any water body.

b. All shoreline areas disturbed by facility construction and maintenance shall be replanted and stabilized with approved vegetation by seeding, mulching, or other effective means immediately upon completion of the construction or maintenance activity. Such vegetation shall be maintained until established.

c. Clearing of vegetation within transportation corridors shall be the minimum necessary for infrastructure maintenance and public safety. The City shall give preference to mechanical means rather than the use of herbicides for roadside brush control on city roads in shoreline jurisdiction.

d. Maintenance activities shall be conducted in a manner that minimizes impacts to fish, wildlife, and their associated habitat and utilizes best management practices.

3. Bridges –

a. Bridges shall meet the standards for arterials, collectors, and neighborhood access streets in subsection 6 below.

4. Passenger-only Ferry Terminal –

a. Ferry terminals and their related parking areas shall be located, designed, constructed and operated to minimize their impacts on shoreline natural resources and systems.

b. Buildings and structures that house pedestrian passengers, employees and equipment storage shall not be permitted over water.

c. Equipment storage shall be conducted entirely within an enclosed structure.

d. Facilities, equipment and established procedures for the containment, recovery and mitigation of spilled petroleum or hazardous products shall be provided.

e. Ferry terminals shall provide parking commensurate with projected demand. The Planning Official may permit the parking to be located off-site if the applicant demonstrates on submitted plans and/or in writing that the following criteria have been met:

   1) It is reasonable to expect that the proposed parking area will be used by the subject use.

   2) A safe pedestrian and/or shuttle connection exists, or will be created, between the subject use and the proposed parking area.

   3) Where the lot is not owned by the same person who owns the lot containing the ferry terminal, the owner of the lot containing the parking must sign a statement in a form acceptable to the City Attorney, stating that the lot is devoted in whole or in part to required parking for the ferry terminal. The applicant must file this statement with the King County Bureau of Elections and Records to run with the property.

f. An on-site passenger loading area must be provided. The City shall determine the appropriate size of the loading area on a case-by-case basis, depending on the capacity of the ferry and the extent of the abutting right-of-way improvements.

5. Water Taxi –

   a. Water-taxis shall be located, designed, constructed, and operated to minimize their impacts on shoreline natural resources and systems.

   b. Equipment storage shall be conducted entirely within an enclosed structure.

   c. Facilities, equipment and established procedures for the containment, recovery and mitigation of spilled petroleum or hazardous products shall be provided.

6. Arterials, Collectors, and Neighborhood Access Streets –

   a. New street and bridge construction in shoreline jurisdiction shall be minimized and allowed only when related to and necessary for the support of permitted shoreline activities.

   b. Streets other than those providing access to approved shoreline uses shall be located away from the shoreline, except when no reasonable alternate location exists.

   c. Any street expansion affecting streams and waterways shall be designed to allow fish passage and minimum impact to habitat.

   d. Drainage and surface runoff from streets and street construction or maintenance areas shall be controlled so that pollutants will not be carried into water bodies.

   e. Streets within shoreline jurisdiction shall be designed with the minimum pavement area feasible.

   f. Streets shall be designed to provide frequent safe crossings for pedestrians and bicycles seeking access to public portions of the shoreline.

   g. Low impact development techniques shall be used where feasible for roadway or pathway and related drainage system construction.

   h. Street alignments shall be designed to fit the topography so that alterations of the natural site conditions will be minimized.

i. New and expanded streets or bridges shall be designed to include pedestrian amenities such as benches or view stations and public sign systems if an area is available for the improvement, that identify significant features along the shoreline.

j. Landscaping and street trees shall be selected and located so that they do not impair public views of the lake from public rights of way to the maximum extent possible.

k. Shoreline street ends may be used for public access or recreational purposes.

l. Shoreline street ends may not be vacated except in compliance with RCW 35.79.035 or its successor, as well as KMC 19.16.090.

Utilities

83.250 Utilities

1. General –

a. Whenever feasible, utility facilities shall be located outside the shorelines area. Whenever these facilities must be placed in a shoreline area, the location shall be chosen so as not to adversely impact shoreline ecological functions or obstruct scenic views.

b. Utilities shall be located in existing rights-of-way and utility corridors wherever feasible.

c. New utilities may not be located waterward or the ordinary high water mark or in the Natural shoreline environment unless it is demonstrated that no feasible alternative exists

d. Utility lines, pipes, conduits, cables, meters, vaults, and similar infrastructure and appurtenances shall be placed underground consistent with the standards of the serving utility to the maximum extent feasible.

e. Proposals for new utilities or new utility corridors in the shoreline jurisdiction must fully substantiate the infeasibility of existing routes or alternative locations outside of the shoreline jurisdiction. Proposals for new water crossings must fully substantiate the infeasibility of existing routes or alternative locations.

f. Utilities which are accessory and incidental to a shoreline use shall be reviewed under the provisions of the use to which they are accessory.

g. Utilities shall provide screening of facilities from water bodies and adjacent properties in a manner that is compatible with the surrounding environment. Type of screening required shall be determined by the City on a case-by-case basis.

h. Utility development shall, through coordination with local government agencies, provide for compatible, multiple use of sites and rights-of-way. Such uses include shoreline access points, trail systems and other forms of recreation and transportation, providing such uses will not unduly interfere with utility operations, or endanger public health and safety.

i. Property owners possessing legal rights to water in the Lake shall be allowed to retain those water-intake valves or structures existing on the date of adoption of this Master Program which are necessary to maintain those rights.

2. Construction and Maintenance –

a. All shoreline areas disturbed by utility construction and maintenance shall be replanted and stabilized with approved vegetation by seeding, mulching, or other effective means immediately upon completion of the construction or maintenance activity. Such vegetation shall be maintained until established.

b. Clearing of vegetation within utility corridors shall be the minimum necessary for installation, infrastructure maintenance and public safety.

c. Maintenance activities shall be conducted in a manner that minimizes impacts to fish, wildlife, and their associated habitat and utilizes best management practices.

3. Utility production and processing facilities - Utility production and processing facilities not dependent on a shoreline location shall be located outside of the shoreline jurisdiction, unless it is demonstrated that no feasible alternative location exists.

4. Utility Transmission Facilities –

   a. Transmission facilities shall be located outside the shoreline jurisdiction where feasible, and when necessarily located within shoreline areas, shall assure no net loss of shoreline ecological functions.

   b. Pipelines transporting hazardous substances or other substances harmful to aquatic life or water quality are prohibited, unless it is demonstrated that no feasible alternative exists.

   c. Sanitary sewers shall be separated from storm sewers.

5. Personal Wireless Service Facilities – Personal Wireless Service Facilities shall use concealment strategies to minimize the appearance of antennas and equipment from the lake and public pedestrian pathways or public use areas.

83.260 Land Division

1. New lots created through land division in the shoreline shall only be permitted when the following standards are met:

   a. The lots created will not require structural flood hazard reduction measures, such as dikes, levees, or stream channel realignment, during the life of the development or use.

   b. The lots created will not require hard structural shoreline stabilization measures in order for reasonable development to occur, as documented in a geotechnical analysis of the site and shoreline characteristics.

   c. In the Natural and Urban Conservancy Environments, the lots created shall contain buildable land area located outside of the shoreland area.

2. Land Division, except those for lot line adjustment and lot consolidation purposes, shall provide public access as provided for in KZC Section 83.390, unless otherwise excepted or modified under the provisions of KZC 83.390.

3. Land Divisions shall establish a prohibition on new private docks on the face of the plat. An area for joint use moorage may be approved if it meets all requirements for shared moorage in KZC Section 83.280.

4. View corridors established as part of a land division shall be depicted on the face of the recorded document.

83.270 General

1. Shoreline modifications are to be designed, located, sized, and constructed such that the structures or measures do not result in a net loss of shoreline ecological functions. Where adverse impacts to ecological functions cannot be avoided, mitigation shall be provided to ~~achieve no net loss of shoreline ecological functions~~as noted in provisions contained in this section.

2. All work at or waterward of the ordinary high water mark requires permits or approvals from one or more of the following state and federal agencies: U.S. Army Corps of Engineers, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, or Washington Department of Ecology. Documentation verifying necessary state and federal agency approvals must be submitted to the City prior to issuance of a shoreline permit, including shoreline exemption. All activities within shoreline jurisdiction must comply with all other regulations as stipulated by state and federal agencies, local tribes, or others that have jurisdiction.

83.280 Piers, Docks, Floats and Boatlifts

~~10.~~1. General –

~~d.~~a. The purpose of this section is to provide standards and guidelines for the location and design of piers, docks, boatlifts and moorage piles.

~~e.~~b. These standards are intended to apply to private facilities providing boat moorage and other recreational use.

~~f.~~c. Piers, Docks, Floats and Boatlifts may only be developed and used accessory to dwelling units on waterfront lots or upland lots with waterfront access rights. Use of these structures is limited to the residents and guests of the waterfront lots to which the moorage is accessory. Moorage space may not be leased, rented, or sold unless otherwise approved as a Marina under the provisions of KZC 83.290.

~~g.~~d. The applicant for any new private pier or dock must demonstrate that a shared or joint-use pier is not feasible.

~~4)~~1) On lots abutting a lot or lots with no existing moorage facility, joint-use piers shall be required, unless the applicant provides written verification from the owner(s) of the adjacent lots that they will not consent to a shared use agreement.

~~5)~~2) On waterfront lots subdivided to create additional waterfront lots or upland lots with waterfront access rights, joint-use piers shall be required.

~~6)~~3) New residential development of two or more dwelling units on waterfront lots must provide a joint-use or community dock facility.

~~11.~~2. Location Standards – Piers, docks, boatlifts and moorage piles shall be designed and located according to the following criteria:

a. General

1) Piers and docks shall be sited and designed to avoid adversely impacting shoreline ecological functions or processes, and shall mitigate for any unavoidable impacts to ecological functions pursuant to the mitigation sequencing provisions established in Section 83.410.

2) Piers and docks shall be spaced and oriented in a manner that minimizes hazards and obstructions to public navigation rights and corollary rights thereto such as, but not limited to, fishing, swimming and pleasure boating.

3) If a structure will extend waterward of the Inner Harbor Line, the applicant must obtain an aquatic use authorization from the Washington State Department of Natural Resources

and submit proof of authorization with submittal of a Building Permit for this use.

b. Setbacks

~~4)~~1) All piers, docks, boatlifts and moorage piles shall comply with the following setback standards:

a) No pier, dock, or moorage pile may be within 10 feet of a side property line; and

b) No pier, dock, or moorage pile may be within 25 feet of another moorage structure not on the subject property, except that this requirement shall not apply if the adjoining pier does not comply with required side setback requirements in subsection a) above; and

c) Piers, docks, or moorage piles shall be separated from the outlet of a stream, including piped streams, by the maximum extent possible, while meeting other required setback standards established under this section.

~~5)~~2) In addition to the standards contained in subsection 1) above, if the subject property ~~provides moorage for not more than two boats~~contains a pier, dock, boat lift or canopy serving a detached dwelling unit, the structure must be separated from a public park by a minimum of 25 feet, except that this standard shall not apply within the Urban Mixed shoreline environment.

3) Joint-use structures may abut property lines provided the adjacent property owners have mutually agreed to the structure location. To insure that a pier is shared, each property owner must sign a statement in a form acceptable to the City Attorney, stating that the pier is used by the other property. The applicant must file this statement with the King County Bureau of Elections and Records to run with the properties.

~~3)~~4) In addition to the standards contained in subsection 1) above, if the subject property ~~provides moorage for more than two boats~~contains a pier, dock, boat lift or canopy serving detached, attached or stacked dwelling units, the following setback standards apply:

i) No pier, dock, or moorage pile on private property may be within 100' feet of a public park;

ii) Except for properties located in the Urban Mixed shoreline environment, no pier, dock, or moorage pile may be closer to a public park than a line that starts where the high waterline of the park intersects with the side property line of the park closest to the moorage structure at a 45° angle from the side property line. This setback applies whether or not the subject property abuts the park, but does not extend beyond any intervening over water structure.

iii) Except for properties located in the Urban Mixed shoreline environment, no pier, dock, or moorage pile may be closer to a lot containing a detached dwelling unit than a line that starts where the ordinary high water mark of the lot intersects the side property line of the lot closest to the moorage structure and runs waterward toward the moorage structure at a 30° angle from that side property line. This setback applies whether or not the subject property abuts the lot, but does not extend beyond any intervening overwater structure;

b) ~~Joint-use structures may abut property lines provided the adjacent property owners have mutually agreed to the structure location. To insure that a pier is shared, each property owner must sign a statement in a form acceptable to the City Attorney, stating that the pier is used by the other property. The applicant must file this statement with the King County Bureau of Elections and Records to run with the properties.~~

~~12.~~3. Design Standards –

~~d.~~a. General –

~~4)~~1) Piers and docks shall be restricted to the minimum size necessary to provide safe and reasonable moorage for the boats to be moored. The length, width and height of piers and docks and other developments regulated by this section shall be no greater than that required for safety and reasonable use.

~~5)~~2) Piers and docks and other developments regulated by this section shall be constructed of materials that will not adversely affect water quality or aquatic plants and animals in the long term.

~~6)~~3) Proposed piers or docks which do not comply with the dimensional standards contained in this chapter may only be approved if they obtain a shoreline variance under the provisions of KZC Chapter 43.

~~7)~~4) All piers and docks and other developments regulated by this section shall be constructed and maintained in a safe and sound condition. Abandoned or unsafe structures shall be removed or repaired promptly by the owner.

~~8)~~5) Exterior lighting mounted on piers and docks and other developments regulated by this section located shall be at ground or dock level, and be directed away from adjacent properties and the water.

~~9)~~6) Temporary moorages shall be permitted for vessels used in the construction of shoreline facilities. The design and construction of temporary moorages shall be such that upon termination of the project, the aquatic habitat in the affected area can be returned to its original (pre-construction) condition within one (1) year at no cost to the environment or the public.

~~10)~~7) Covered moorage, boathouses, or other walled covered moorage are prohibited.

~~11)~~8) No skirting is allowed on any structure.

~~12)~~9) If a pier or dock is provided with a safety railing, such railing shall not exceed 36 inches in height and shall be an open framework.

~~13)~~10) Piers and docks must display the street address of the subject property. The address must be oriented to the lake with letters and numbers at least four inches high.

~~14)~~11) Piers and docks shall be marked with reflectors, or otherwise identified to prevent unnecessarily hazardous conditions for water surface users during the day or night. Exterior finish of all structures shall be generally non-reflective.

~~15)~~12) Aircraft moorage is not permitted, except as associated with an approved float plane landing and mooring facility.

~~16)~~13) Must provide at least one covered and secured waste receptacle.

~~17)~~14) All utility and service lines located waterward of the ordinary high water mark must be below the pier deck. All utility and service lines located upland of the ordinary high water mark shall be underground, where feasible.

~~13.~~4. Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units - Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units shall comply with the moorage structure design standards for Marinas in KZC Section 83.290.3.b.2),

~~14.~~5. New Piers or Docks – Piers or docks may be permitted, subject to the following regulations:

~~d.~~a. Area. Surface coverage of new private piers or docks, including all floats, ramps, ells and fingers, shall be limited to the following:

~~4)~~1) Four hundred eighty (480) square feet for a single property owner;

~~5)~~2) Seven hundred (700) square feet for a joint-use facility utilized by two residential property owners; or

~~6)~~3) One thousand (1,000) square feet for a joint-use facility utilized by three or more

residential property owners.

~~7)~~4) Where a new pier cannot reasonably be constructed under the area limitation of 1-3) above such that a moorage depth of 10 feet measured at ordinary high water can be reached, an additional four (4) square feet of area may be added for each additional foot of pier length needed to reach 10 feet of water depth.

~~e.~~b. Length and Width. The length and width of new private piers and docks shall be limited to the following:

~~4)~~1) The length of new private piers or docks shall be limited by the maximum square footage allowed in KZC 83.280.4.c. In addition, the maximum length of a pier, including all ells, fingers, and floats, is one-hundred fifty (150) feet.

~~5)~~2) Only piers and ramps can be located within 30 feet waterward of the ordinary high water mark.

~~6)~~3) Piers that extend further waterward than existing adjacent piers must demonstrate that they will not have an adverse impact on navigation.

~~7)~~4) The dimensions of new private piers or docks, shall be limited to the following:

a) The maximum width of a pier is four (4) feet.

b) The maximum width of a pier ramp is three (3) feet.

c) The maximum width of ells and floats is six (6) feet. The maximum length of ells is twenty-six (26) feet.

d) The maximum width of fingers is two (2) feet. The maximum length of fingers is twenty (20) feet.

e) The maximum width of floats is six (6) feet. The maximum length of floats is twenty (20) feet.

~~f.~~c. Height.

~~4)~~1) Except for floats, the bottom of all structures must be at least 1.5 feet above the ordinary high water mark.

~~5)~~2) Diving boards and similar features may not be more than three (3) feet above the deck.

~~g.~~d. Water Depth.

~~4)~~1) Ells must be in water with depths of 9 feet or greater as measured at the ordinary high water mark.

~~5)~~2) Floats must be in water with depths of 10 feet or greater as measured at the ordinary high water mark.

~~h.~~e. Decking. All new piers, including walkways, ells, and fingers, must be fully grated. Decking shall allow light to pass through at least 60 percent of the surface area. If float tubs preclude the beneficial use of fully grated decking material, then a minimum of 2 feet of grating down the center of the entire float shall be provided.

~~i.~~f. Piles. The first set of in-water piling located nearest to shore shall be steel, 4 inches in diameter and at least 18 feet from the OHWM. Pilings located beyond the first set shall also be steel or untreated wood and spaced at least 18 feet apart and shall not be greater than 12 inches in diameter. Piles shall not be treated with pentachlorophenol, creosote, CCA or comparably toxic compounds.

~~j.~~g. Mitigation. All proposals involving new private piers or docks are subject to the following mitigation requirements:

~~4)~~1) Any existing in-water and overwater structures associated with the pier or use for moorage or other recreational use that are located within 30 feet of the ordinary high

water mark shall be removed.

~~5)~~2) Emergent vegetation shall be planted waterward of the ordinary high water mark, if the site is appropriate for such plantings.

~~6)~~3) Plant native riparian vegetation, as necessary, in at least 75 percent of the nearshore riparian area located along the water's edge. The vegetated portion of the nearshore riparian area shall average ten (10) feet in depth from the ordinary high water mark, but may be a minimum of five (5) feet wide to allow for variation in landscape bed shape and plant placement. Joint-use piers will require a riparian zone along all properties sharing the pier. Mitigation plantings shall be subject to the following requirements:

a) Restoration of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least three (3) trees per 100 linear feet of shoreline must be included in the plan. Plant materials must be native and selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester. Plant density and spacing shall be appropriate for the site and commensurate with spacing recommended for each individual species proposed. An alternative planting plan or mitigation measure in lieu of meeting these requirements may be allowed if approved by other state and federal agencies. In addition, the City may accept existing native trees, shrubs and groundcover as meeting the requirements of this section, including vegetation previously installed as part of a prior development activity, provided that the existing vegetation provides a landscape strip at least as effective in protecting shoreline ecological functions as the required landscaping.

~~a)~~b) Vegetation placement – Vegetation selection and placement shall comply with the following standards:

i. Vegetation shall be selected and positioned on the property so as not to obscure the public view within designated view corridors from the public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake at the time of planting or upon future growth.

ii. Vegetation may be selected and positioned to maintain private views of the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met.

~~7)~~4) In addition to a native planting plan, a five-year vegetation maintenance and monitoring plan is also required. The monitoring plan shall include the following performance standards:

a) Preparation of as-built drawings after installation of the mitigation plantings;

b) Annual monitoring reports for five (5) years, that include written and photographic documentation on tree and shrub mortality subject to the following success criteria:

1. One-hundred (100) percent survival of all planted native trees and shrubs during the first two years after planting; and

2. One-hundred (100) percent survival of trees and eighty (80) percent survival of remaining native plants in years three through five.

Copies of reports that are submitted to state or federal agencies in compliance with permit approvals may be submitted in lieu of a separate report to the City.

~~k.~~h. Woody debris existing on-site or contributed to the site as part of the mitigation efforts shall not be removed.

~~15.~~6. Replacement of Existing Private Pier or Dock – Proposals involving replacement of the entire existing private pier or dock, including piles, are considered a new moorage facility and must meet the dimensional and material standards for new private piers as described in KZC 83.280.5. Additionally, projects involving replacement of more than 50 percent of the pier-support piles and

either decking or decking substructure (e.g. stringers) over a 5-year period must meet the dimensional and materials standards for new private piers as described in KZC 83.280.4.

~~d.~~a. Administrative approval of alternative design. The City may approve pier replacement proposals that deviate from the dimensional and materials standards of KZC 83.280.5 if the applicant can demonstrate that the proposal has been approved by the U.S. Army Corps of Engineers, the Washington Department of Ecology, and the Washington Department of Fish and Wildlife. In no case, however, may the dimensions of a replacement pier proposed through the alternative design process exceed the following maximums:

~~4)~~1) The maximum width of a pier is six (6) feet.

~~5)~~2) The maximum width of a pier ramp is four (4) feet.

~~6)~~3) The maximum width of ells and floats is eight (8) feet. The maximum length of ells is twenty-six (26) feet.

~~7)~~4) The maximum width of fingers is three (3) feet. The maximum length of fingers is twenty-six (26) feet.

~~8)~~5) The maximum width of floats is eight (8) feet. The maximum length of floats is twenty-six (26) feet.

~~9)~~6) The maximum length of a replacement pier, including all ells, fingers, and floats, is one-hundred fifty (150) feet.

~~10)~~7) No replacement pier may be larger in size (square footage) than the existing pier.

~~16.~~7. Additions to Private Pier or Dock – Proposals involving the modification and/or enlargement of existing private piers or docks must comply with the following measures:

~~d.~~a. The applicant must demonstrate that there is a need for the enlargement of an existing pier or dock. The need for enlargement must be based upon safety concerns or inadequate depth of water.

~~e.~~b. Enlarged portions of piers must comply with the dimensional, materials and mitigation standards for new private piers as described in KZC 83.280.5.

~~f.~~c. To mitigate for impacts associated with surface coverage, all pier enlargement projects must convert to grated decking an area of existing nearshore decking equivalent in size to the additional surface coverage.

~~17.~~8. Repair of Existing Private Pier or Dock – Repair proposals which replace only decking or decking substructure and less than 50 percent of the existing pier-support piles must comply with the following:

~~d.~~a. Replacement piles must be sized and use materials as described under KZC 83.280.5.h and must achieve the minimum 18-foot spacing to the extent allowed by site-specific engineering or design considerations.

~~e.~~b. Repair proposals which replace 50 percent or more of the decking or decking substructure over a five (5)-year period must replace any solid decking surface located within the nearshore 30 feet of the pier with a grated surface material.

~~f.~~c. Other repairs to existing legally established moorage facilities where the nature of the repair is not described in the above subsections shall be considered minor repairs and are permitted, consistent with all other applicable codes and regulations. If the cumulative repair proposed over a five (5)-year period exceeds thresholds established in KZC 83.280.6, above, the current repair proposal shall be reviewed under those provisions.

~~18.~~9. Boatlifts and Boatlift Canopies – Boatlifts and boatlift canopies may be permitted as an accessory to private piers and docks, subject to the following regulations:

~~d.~~a. Boatlifts.

~~4)~~1) To the maximum extent practicable, all lifts shall be oriented in a north-south direction to minimize shading impacts.

~~5)~~2) All lifts are to be placed as far waterward as feasible and safe, within the limits of the dimensional standards for private piers established in KZC 83.280.4.d.

~~6)~~3) A maximum of one free-standing or deck-mounted boatlift is allowed per dwelling unit.

~~7)~~4) In addition to the lifts permitted in subsection 3 above, a maximum of two jetski lifts or one fully grated platform lift are also permitted per dwelling unit.

~~8)~~5) Up to two (2) cubic yards of fill are permitted to anchor a lift. Fill is subject to the following requirements:

a) Fill can only be used if the substrate prevents the use of anchoring devices which can be embedded into the substrate.

b) The fill must be clean.

c) The fill must consist of rock or pre-cast concrete blocks.

d) The fill must only be used to anchor the boatlift.

e) The minimum amount of fill must be utilized to anchor the boatlift.

~~e.~~b. Boatlift canopies.

~~4)~~1) For a pier, dock, boat lift or canopy serving a detached dwelling unit, ~~O~~only one canopy is permitted per ~~single or joint-use overwater structure~~detached dwelling unit, including joint use piers.

2) For a pier, dock, boat lift or canopy serving detached, attached or stacked dwelling units, the maximum number of allowed boatlift canopies shall be a minimum of two canopies or equal to 10 percent of the dwelling units on the subject property, whichever is greater.

~~2)~~3) Boatlift canopies must be made of translucent fabric materials.

~~3)~~4) Boatlift canopies must not be constructed of permanent structural material. The bottom of a boatlift canopy shall be elevated above the boatlift to the maximum extent practicable, the lowest edge of the canopy must be a least four (4) feet above the ordinary high water mark, and the top of the canopy must not extend more than four (4) feet above an adjacent pier.

~~19.~~10. Moorage Piles – Moorage piles may be permitted as an accessory to private piers and docks, subject to the following regulations:

~~d.~~a. A maximum of two (2) moorage piles are allowed per private pier or dock, including existing moorage piles.

~~e.~~b. Joint-use structures can have up to four (4) moorage piles, including existing moorage piles.

~~f.~~c. All piles shall be located within twelve (12) feet of a pier or dock.

~~g.~~d. In no case may a pile be placed within 30 feet of the ordinary high water mark or any farther waterward than the end of the pier.

83.290 Marinas

~~c.~~a. Location Standards –

1) Marinas may not be approved in cases when it can be reasonably foreseeable that the development or use would require maintenance dredging and/or installation of a breakwater during the life of the development or use.

2) Marinas shall be designed and located according to the following criteria:

a) The moorage structures will not interfere with the public use and enjoyment of the water or create a hazard to navigation;

b) They shall not significantly damage fish and wildlife habitats;

c) They shall be designed to achieve no net loss of shoreline ecological functions; and

d) They shall be located only at sites with suitable environmental conditions, shoreline configuration, and access.

3) Moorage structures within marinas shall comply with the following setback standards:

a) The following setback standards from public parks apply to marinas:

i) No moorage structure on private property may be within 100′ feet of a public park; or

ii) Except for properties located in the Urban Mixed shoreline environment, no moorage structure on private property may be closer to a public park than a line that starts where the high waterline of the park intersects with the side property line of the park closest to the moorage structure at a 45° angle from the side property line. This setback applies whether or not the subject property abuts the park, but does not extend beyond any intervening over water structure.

b) Except for properties located in the Urban Mixed shoreline environment, no moorage structure may be closer to a lot containing a detached dwelling unit than a line that starts where the ordinary high water mark of the lot intersects the side property line of the lot closest to the moorage structure and runs waterward toward the moorage structure at a 30° angle from that side property line. This setback applies whether or not the subject property abuts the lot, but does not extend beyond any intervening overwater structure;

c) No moorage structure may be within 25′ of another moorage structure not on the subject property; and

d) Moorage structures shall be separated from the outlet of a stream, including piped streams, by the maximum extent possible, while meeting other required setback standards established under this section.

4) No structures, other than each moorage structure or public access pier, may be waterward of the ordinary high water mark. For regulations regarding public access piers, see ~~subsection 8) below.~~section 83.200 KZC.

5) If the moorage structure will extend waterward of the Inner Harbor Line, the applicant must obtain an aquatic use authorization from the Washington State Department of Natural Resources prior to submittal of a Building Permit for this use.

6) Marinas shall provide for multiple uses, including water-related use, to the extent compatible with shoreline ecological functions and processes, adjacent shoreline use, and ability of the upland area to accommodate multiple uses.

~~d.~~b. Size –

1) The City will determine the maximum allowable number of moorages based on the following factors:

a) The suitability of the environmental conditions.

b) The ability of the land landward of the high waterline to accommodate the necessary support facilities.

c) The potential for traffic congestion.

d) The demand analysis submitted by the applicant to demonstrate anticipated need for the requested number of moorages.

2) Boats moored within marinas shall comply with the mooring restrictions contained in Chapter 14.16 KMC.

~~e.~~c. Design Standards -

1) General –

a) The design of the site must be compatible with the scenic nature of the waterfront. If the development will result in the isolation of a detached dwelling unit, site design, building design and landscaping must mitigate the impacts of that isolation.

b) Must provide at least two covered and secured waste receptacles upland of the ordinary high water mark.

c) All utility and service lines located waterward of the ordinary high water mark must be below the pier deck. All utility and service lines located upland of the ordinary high water mark shall be underground, where feasible.

d) Must provide public restrooms upland of the ordinary high water mark.

e) At least one pump-out facility shall be provided for use by the general public. This facility must be easily accessible to the general public and clearly marked for public use.

f) Transient moorage may be required as part of a marina if the site is in an area near commercial facilities generating commercial transient moorage demand.

g) Moorage facilities shall be marked with reflectors, or otherwise identified to prevent unnecessarily hazardous conditions for water surface users during the day or night.

h) Exterior finish shall be generally non-reflective.

i) Moorage structures must display the street address of the subject property. The address must be oriented to the lake with letters and numbers at least four inches high.

j) Covered moorage, including boatlift canopies, is not permitted.

k) Aircraft moorage is not permitted, except as associated with an approved float plane landing and mooring facility.

l) Marinas shall be designed and operated consistent with established Best Management Practices (BMPs) for Marina Operators, including BMPs for bilge water discharge, hazardous waste, waste oil and spills, sewer management, and spill prevention and response.

m) Procedures for receiving, storing, dispensing, and disposing of oil or hazardous products, as well as a spill response plan for oil and other products, shall be required of new marinas and expansion or substantial alteration of existing marinas. Compliance with federal or state law may fulfill this requirement. Handling of fuels, chemicals or other toxic materials must be in compliance with all applicable Federal and State water quality laws as well as health, safety and engineering requirements. Rules for spill prevention and response, including reporting requirements, shall be posted on site.

2) Size and Design of Marinas –

a) Moorage structures may not be larger than is necessary to provide safe and reasonable moorage for the boats to be moored. The city will specifically review the size and configuration of each proposed moorage structure to help ensure that:

i) The moorage structure does not extend waterward beyond the point necessary to provide reasonable draft for the boats to be moored, but not beyond the outer harbor line;

ii) The moorage structure is not larger than is necessary to moor the specified number of boats; and

iii) The moorage structure will not interfere with the public use and enjoyment of the water or create a hazard to navigation; and

iv) The moorage structure will not have a significant long-term adverse effect on ecological functions.

b) Piers and docks shall be the minimum size necessary to meet the needs of the proposed water-dependent use and shall observe the following criteria:

i) Use of materials that allow transmission of light (e.g. grating) in ramp and pier/float decking to the maximum extent feasible.

ii) Pier surfaces located in the nearshore 30 feet shall be fully grated to allow maximum light penetration.

iii) Piers, docks and floats shall be located along a north/south orientation to the maximum extent feasible.

iv) No structures other than walkways are permitted in nearshore 50 feet.

v) Structures must be designed to preclude moorage in locations that would have insufficient water depth to avoid boats resting at any time of year to on the substrate.

vi) Limit the number of piles to the minimum practicable. Pilings shall be spaced a minimum of 18 feet apart.

vii) Limit the size of piles to the minimum feasible.

viii) Pilings shall be composed of steel, concrete, plastic or untreated wood.

ix) Limit structure widths as follows:

i) Ramps may be no wider than four (4) feet; and

ii) Primary walkways and floats may be no wider than six (6) feet; and

iii) Ells may be no wider than eight (8) feet; and

iv) Fingers and other similar projections off of the primary walkway may be no wider than 4 feet, and shall be reduced to 2 feet in those instances where the projection provides secure boat moorage but is not necessary for boat-user access; or

v) An alternative design in lieu of meeting these requirements may be allowed if approved by other state and federal agencies.

x) 1) Except for floats, the bottom of all structures must be at least 1.5 feet above the ordinary high water mark.

xi) If a pier is provided with railing, such railing shall not exceed 36 inches in height and shall be an open framework.

3) Submittal Requirements - In addition to submitting an application, the applicant shall submit the following as part of a request to construct a new, enlarged, or replacement marina or its associated facilities:

a. An assessment of the anticipated need for the requested number of moorages and ability of the site to accommodate the proposal, considering such factors as environmental conditions, shoreline configuration, access, and neighboring uses.

b. An assessment of the impacts and measures taken to avoid, minimize, and mitigate impacts. See Section 83.410 KZC for information on mitigation sequencing.

83.300 Shoreline Stabilization

6. General – The purpose of this section is to provide standards and guidelines for the location and design of hard structural and soft structural shoreline stabilization measures that have the potential to adversely impact the shoreline natural environment. New development, however, shall be located and designed to avoid the need for future shoreline stabilization to the extent feasible. In all cases, the feasibility of soft structural shoreline stabilization shall be evaluated prior to hard structural stabilization. The following standards apply to all developments and uses in shoreline jurisdiction:

2. New or enlarged structural shoreline stabilization - New structural shoreline stabilization measures shall include measures installed to address erosion impacts, including both hard and soft structural shoreline stabilization measures. Enlargement of a structural shoreline stabilization shall include additions to or increases in size (such as height, width, length, or depth) to existing shoreline stabilization measures. Structural stabilization measures shall not be allowed, except as follows:

   a. To protect an existing primary structure, including residences, when conclusive evidence, documented by a geotechnical analysis, is provided that the structure is in danger from shoreline erosion caused by waves. The geotechnical analysis should evaluate on-site drainage issues and address drainage problems away from the shoreline edge before considering hard or soft structural shoreline stabilization. The geotechnical analysis requirement shall be waived when a primary structure, including residences, is located ten (10) feet or less from the ordinary high water mark.

   b. In support of new non-water-dependent development, including a detached dwelling unit, when all of the conditions below apply:

      a. The erosion is not being caused by upland conditions, such as drainage and the loss of vegetation.

      b. Nonstructural measures, such as placing the development farther from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient.

      c. The need to protect primary structures from damage due to erosion is demonstrated through a geotechnical report. The damage must be caused by natural processes, such as waves.

   c. In support of water-dependent development when all of the conditions below apply:

      1) The erosion is not being caused by upland conditions, such as drainage and the loss of vegetation.

      2) Nonstructural measures, planting vegetation, or installing on-site drainage improvements are not feasible or not sufficient.

      3) The need to protect primary structures from damage due to erosion is demonstrated through a geotechnical report.

   d. To protect projects for the restoration of ecological functions or for hazardous substance remediation projects pursuant to Chapter 70.105D RCW when nonstructural measures, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient.

3. Replacement or repair of existing shoreline stabilization measures - This section allows repair and replacement of existing legally established shoreline stabilization measures.

   a) Minor Repair - Minor repair is permitted, subject to the following standards:

      1) Minor repair shall include modifications or improvements to an existing shoreline stabilization measure that are designed to ensure the continued function of the stabilization measure by preventing failure of any part of the stabilization measure.

2) The following activities shall not be considered as “minor repair”:

a) A repair needed to a portion of an existing stabilization structure that has collapsed, eroded away or otherwise demonstrated a loss of structural integrity, or in which the repair work involves modification of the toe rock or footings, and is greater than 15 feet in continuous linear length;

b) A repair to more than 75 percent of the linear length of the existing hard structural shoreline stabilization measure in which the repair work involves replacement of top or middle course rocks or other similar repair activities.

Repair activities not meeting the definition of minor repair shall be considered major repair or replacement and the portion of the shoreline stabilization that is being repaired shall be subject to the provisions contained in subsection b) below.

3) Areas of temporary disturbance within the shoreline setback shall be expeditiously restored to their pre-project condition or better.

b. Major Repair or Replacement - The following standards apply to major repair or replacement of existing hard and soft structural shoreline stabilization measures:

1) For purposes of this section, "replacement" means the construction of a new structure to perform a shoreline stabilization function of an existing structure that can no longer adequately serve its purpose. Additions to or increases in size of existing shoreline stabilization measures shall also be considered new structures.

2) Major repair or replacement shall be treated as a new shoreline stabilization measure subject to the restrictions of subsection 2. above, as well as the submittal requirements of subsection 4 below, except for the requirement to prepare a geotechnical analysis. A geotechnical analysis is not required for major repairs or replacements of existing hard or soft structural shoreline stabilization with a similar measure if the applicant demonstrates need to protect principal uses or structures from erosion caused by waves or other natural processes operating at or waterward of the ordinary high water mark. In those circumstances where a primary structure, including residences, is located ten (10) feet or less from the ordinary high water mark, need will be presumed to have been demonstrated.

3) Replacement hard structural shoreline stabilization measures shall not encroach waterward of the ordinary high water mark or waterward of the existing shoreline stabilization measure unless the primary structure was constructed prior to January 1, 1992, and there is overriding safety or environmental concerns. In such cases, the replacement structure shall abut the existing shoreline stabilization structure. All other replacement structures shall be located at or landward of the existing shoreline stabilization structure.

3) Hard and soft shoreline stabilization measures may allow some fill waterward of the ordinary high water mark to provide enhancement of shoreline ecological functions through creation of nearshore shallow-water habitat.

4. Submittal Requirements - In addition to submitting an application, the applicant shall submit the following as part of a request to construct a new, enlarged, major repair or replacement shoreline stabilization measure:

a. For a new or enlarged hard or soft structural shoreline stabilization measure, the following must be submitted, unless otherwise specified in this section:

~~i.~~1) ~~a~~A geotechnical report prepared by a qualified professional with an engineering degree. The report shall include the following:

~~1)~~ An assessment of the necessity for structural shoreline stabilization by estimating time frames and rates of erosion and reporting on the urgency associated with the specific situation. New hard or soft structural shoreline

stabilization measures shall not be authorized, except when a report confirms that that there is a significant possibility that an existing structure will be damaged generally within three (3) years as a result of shoreline erosion in the absence of such hard structural shoreline stabilization measures, or where waiting until the need is immediate results in the loss of opportunity to use measures that would avoid impacts on ecological functions.

ii. ~~2)~~ An assessment of the cause of erosion, looking at processes occurring both waterward and landward of the ordinary high water mark.

3) Where structural shoreline stabilization is determined to be necessary in subsection 4 a. above, the applicant shall submit an assessment prepared by a qualified professional (e.g., shoreline designer or other consultant familiar with lakeshore processes and shore stabilization), containing the following:

An evaluation of~~must e~~valuates the feasibility of using soft shoreline stabilization measures in lieu of hard structural shoreline stabilization measures. Soft shoreline stabilization may include the use of gravels, cobbles, boulders, and logs, as well as vegetation; and~~.~~

i. ~~4)~~ Design recommendations for minimum sizing of hard structural or soft structural shoreline stabilization materials, including gravel and cobble beach substrates necessary to dissipate wave energy, eliminate scour, and provide long-term shoreline stability.

~~a.~~b. Geotechnical report requirements for new or enlarged hard or soft structural shoreline stabilization measures may be waived when a primary structure, including residences, is located ten (10) feet or less from the ordinary high water mark.

c. For major repairs or replacements of existing hard structural shoreline stabilization measures with a similar measure, the applicant shall submit a written narrative providing a demonstration of need. The narrative must be prepared by a qualified professional (e.g., shoreline designer or other consultant familiar with lakeshore processes and shore stabilization), but not necessarily a licensed geotechnical engineer. The demonstration of need shall consist of the following:

c. An assessment of the necessity for continued structural shoreline stabilization, considering site-specific conditions such as water depth, orientation of the shoreline, wave fetch, and location of the nearest structure.

d. An assessment of erosion potential resulting from the action of waves or other natural processes operating at or waterward of the ordinary high water mark in the absence of the hard structural shoreline stabilization.

e. An assessment of the feasibility of using soft shoreline stabilization measures in lieu of hard structural shoreline stabilization measures. Soft shoreline stabilization may include the use of gravels, cobbles, boulders, and logs, as well as vegetation.

f. Design recommendations for minimizing impacts of any necessary hard structural shoreline stabilization.

d. A demonstration of need may be waived when an existing hard structural shoreline stabilization measure is proposed to be repaired or replaced using soft structural shoreline stabilization measures, or when a primary structure, including residences, is located ten (10) feet or less from the ordinary high water mark.

e. As part of any approval of a new, enlarged, or replacement structural shoreline stabilization measure, the applicant shall be required to fund a review by the City's shoreline consultant of the shoreline stabilization plan, the monitoring and maintenance program, the narrative justification of demonstrated need, and drawings. In addition, the Planning Official may require funding of a qualified professional, selected and retained by

the City subject to a three-party contract, to review the geotechnical report and recommendations.

f. For all structural shoreline stabilization measures, including soft structural shoreline stabilization, detailed construction plans, including the following:

1) Plan and cross-section views of the existing and proposed shoreline configuration, showing accurate existing and proposed topography and ordinary high water marks.

a) Detailed construction sequence and specifications for all materials, including gravels, cobbles, boulders, logs, and vegetation. The sizing and placement of all materials shall be selected to accomplish the following objectives:

i) Protect the property and structures from erosion and other damage over the long term, and accommodate the normal amount of alteration from wind- and boat-driven waves;

ii) Allow safe passage and migration of fish and wildlife; and

iii) Minimize or eliminate juvenile salmon predator habitat.

b) Detailed five-year vegetation maintenance and monitoring program to include the following:

i) Goals and objectives of the shoreline stabilization plan;

ii) Success criteria by which the implemented plan will be assessed;

iii) A five (5) year maintenance and monitoring plan, consisting of two site visits per year by a qualified professional, with annual progress reports submitted to the Planning Official and all other agencies with jurisdiction;

iv) A contingency plan in case of failure; and

v) Proof of a written contract with a qualified professional who will perform the monitoring.

g. The Planning Official shall require a performance or maintenance bond or security, as determined to be appropriate by the Planning Official, to ensure compliance with any aspect of this chapter or any decision or determination made pursuant to this chapter.

1) Performance or Maintenance Bond or Security Requirement - The performance or maintenance security required by the Planning Official shall be provided in such forms and amounts 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, permit or approval requirements, and applicable regulations, and to assure that all work or actions not satisfactorily completed or maintained will be corrected to comply with approved plans, specifications, requirements, and regulations to restore environmental damage or degradation, protect fish and wildlife habitat, and protect the health, safety, and general welfare of the public.

2) Form of Performance Security - The performance security shall be a surety bond obtained from companies registered as surety in the state or certified as acceptable sureties on federal bonds. In lieu of a surety bond, the Planning Official may allow alternative performance security in the form of an assignment of funds or account, an escrow agreement, an irrevocable letter of credit, or other financial security device in an amount equal to that required for a surety bond. The surety bond or other performance 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.

3) Amount of Performance Security - The amount of the performance or maintenance security shall be a percentage of the estimated cost based on the City's established percentage at the time of the security submittal. , The estimated cost shall be approved by the Planning Official and include conformance to plans, specifications, and permit or approval requirements under this chapter, including corrective work and compensation, enhancement, mitigation, maintenance, and restoration of sensitive areas. In addition, an administrative deposit shall be paid as required in KZC 175.25. All bond or performance security shall be submitted in their original form with original signatures of authorization.

4) Administration of Performance Security - If during the term of the performance or maintenance security, the Planning Official determines that conditions exist which do not conform with plans, specifications, approval or permit requirements, the Planning Official may issue a stop work order prohibiting any additional work or maintenance until the condition is corrected. The Planning Official may revoke the performance or maintenance security, or a portion thereof, in order to correct conditions that are not in conformance with plans, specifications and approval or permit requirements. The performance or maintenance security may be released upon written notification by the Planning Official, following final site inspection or completion, as appropriate, or when the Planning Official is satisfied that the work or activity complies with permits or approved requirements.

5) Exemptions for Public Agencies - State agencies and local government bodies, including school districts, shall not be required to secure the performance or maintenance of permit or approval conditions with a surety bond or other financial security device. 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.

d. The cost of producing and implementing the shoreline stabilization plan, the monitoring and maintenance program, reports, and drawings, as well as the review of each component by the City and the City's consultant(s), shall be borne by the applicant.

5. General Design Standards - When a hard or soft structural shoreline stabilization measure is demonstrated to be necessary, the following design standards shall be incorporated into the stabilization design:

a. Soft structural shoreline stabilization measures shall be used to the maximum extent ~~practicable~~ feasible for new, enlarged, major repair or replacement shoreline stabilization measures, limiting hard structural shoreline stabilization measures to the portion or portions of the site where necessary to protect or support existing shoreline structures or trees, or where necessary to connect to existing shoreline stabilization measures on adjacent properties. The length of hard structural shoreline stabilization connections to adjacent properties should be minimized to the maximum extent ~~practicable~~feasible, and extend into the subject property from adjacent properties no more than 10 feet.

b. For enlarged, major repair or replacement soft and hard structural shoreline stabilization measures, the following location and design standards are preferred in descending order:

1) Conduct excavation and fill activities associated with the soft or hard structural shoreline stabilization landward of the existing ordinary high water mark to the maximum extent practicable.

2) Where 1) is not practicable because of existing site conditions, conduct necessary excavation and fill activities waterward of the existing ordinary high water mark as needed to implement a soft structural shoreline stabilization technique or to mitigate the impacts of hard structural shoreline stabilization.

c. To the extent feasible and warranted by site-specific conditions, all approved new, enlarged, minor repair, major repair or replacement shoreline stabilization measures must minimize and mitigate any adverse impacts to ecological functions resulting from short-term construction activities. Impact minimization techniques may include compliance with appropriate timing restrictions, use of best management practices to prevent water quality impacts related to upland or in-water work, and stabilization of exposed soils following construction.

d. To the extent feasible and warranted by site-specific conditions, all new, enlarged, major repair, or replacement hard structural shoreline stabilization measures should minimize any long-term adverse impacts to ecological functions by incorporating the following measures into the design:

1) Limiting the size of hard structural shoreline stabilization measures to the minimum necessary, including height, depth, and mass.

2) Shifting the bulkhead landward and/or sloping the bulkhead landward to provide some dissipation of wave energy and increase the quality or quantity of nearshore shallow-water habitat.

e. To the extent feasible and warranted by site-specific conditions, approved new and enlarged shoreline stabilization measures should mitigate any adverse impacts to ecological functions by incorporating the following measures at a minimum into the design:

1) To increase shallow-water habitat, install gravel/cobble beach fill waterward of the ordinary high water mark, grading slope to a maximum of 1 Vertical (V):4 Horizontal (H). The material should be sized and placed to remain stable and accommodate alteration from wind- and boat-driven waves.

2) Plant native riparian vegetation, as necessary, in at least 75 percent of the nearshore riparian area located along the water's edge. The vegetated portion of the nearshore riparian area shall average ten (10) feet in depth from the ordinary high water mark, but may be a minimum of five (5) feet wide to allow for variation in landscape bed shape and plant placement. Restoration of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least three (3) trees per 100 linear feet of shoreline must be included in the plan. Plant materials must be native and selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester.. An alternative planting plan or mitigation measure in lieu of meeting these requirements may be allowed if approved by other state and federal agencies. In addition, the City may accept existing native trees, shrubs and groundcover as meeting the requirements of this section, including vegetation previously installed as part of a prior development activity, provided that the existing vegetation provides a landscape strip at least as effective in protecting shoreline ecological functions as the required landscaping.

f. The shoreline stabilization measure shall be designed to not significantly interfere with normal surface and/or subsurface drainage into Lake Washington.

g. The shoreline stabilization measure shall be designed so as not to constitute a hazard to navigation ~~or substantially interfere with visual access to the water~~.

h. Vegetation associated with or installed as mitigation for shoreline stabilization measures shall comply with the following standards:

i. Vegetation shall be selected and positioned on the property so as not to obscure the public view within designated view corridors from the public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake at the time of planting or upon future growth.

ii. Vegetation may be selected and positioned to maintain private views of the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met.

i. Stairs or other water access measures may be incorporated into the shoreline stabilization, but shall not extend waterward of the shoreline stabilization measure.

j. The shoreline stabilization measures shall be designed to ensure that the measures do not restrict appropriate public access to the shoreline, except where such access is modified under the provisions of KZC Section 83.390 for public access.

Additional mitigation measures may be required depending on the level of impact.

k. Shoreline stabilization measures shall not extend waterward more than the minimum amount necessary to achieve effective stabilization.

l. When a structural shoreline stabilization measures is required at a public access site, provisions for safe access to the water shall be incorporated into the shoreline stabilization structure design. Access measures should not extend farther waterward than the face of the shoreline stabilization structure.

m. When shoreline stabilization measures intended to improve ecological functions shift the ordinary high water mark landward of the pre-modification location, any structure setbacks from the ordinary high water mark or lot area for the purposes of calculating lot coverage shall be measured from the pre-modification location. The pre-modification ordinary high water mark shall be recorded in a form approved by the City Attorney and recorded in the King County Department of Elections and Records.

n. If shoreline stabilization measures intended to improve ecological functions shift the ordinary high water mark landward of the pre-modification location and result in expansion of the shoreline jurisdiction on any property other than the subject property, the plan shall not be approved until the applicant submits to the Planning Official a copy of a statement signed by the property owners of all affected properties, in a form approved by the City Attorney and recorded in the King County Department of Elections and Records, consenting to the shoreline jurisdiction creation and/or increase on such property.

6. Specific Hard Structural Shoreline Stabilization Design Standards - When hard structural shoreline stabilization measures, such as bulkheads, are demonstrated to be necessary, incorporate the following standards into the design:

a. When shoreline stabilization is approved on a site where bulkheads are not located on adjacent properties, the construction of a bulkhead shall tie in with the existing contours of the adjoining properties, as feasible, such that the proposed bulkhead would not cause erosion of the adjoining properties.

b. When shoreline stabilization is approved on a site where bulkheads are located on adjacent properties, the proposed bulkhead may tie in flush with existing bulkheads on adjoining properties, provided that the new bulkhead does not extend waterward of OHWM, except as necessary to make the connection to the adjoining bulkhead. In such circumstances, the remaining portion of the bulkhead shall be placed landward of the existing OHWM such that no net intrusion into the lake occurs nor does net creation of uplands occur. The length of hard structural shoreline stabilization connections to adjacent properties should be minimized to the maximum extent practicable, and extend into the subject property from adjacent properties no more than 10 feet.

c. Fill behind bulkheads shall be limited to an average of one (1) cubic yard per running foot of bulkhead. Any filling in excess of this amount shall be considered a regulated activity subject to the regulations in this Chapter pertaining to fill activities and the requirement for obtaining a Shoreline Substantial Development permit.

7. Specific Soft Structural Shoreline Stabilization Design Standards – In addition to applicable general design standards and hard structural shoreline stabilization standards above, incorporate the following standards into the design:

    a. The soft shoreline stabilization design shall provide sufficient protection of adjacent properties by tying in with the existing contours of the adjoining properties to prevent erosion at the property line. Projects that include necessary use of hard structural shoreline stabilization measures only at the property lines to tie in with adjacent properties shall be permitted as soft shoreline stabilization measures. The length of hard structural shoreline stabilization connections to adjacent properties should be minimized to the maximum extent practicable, and extend into the subject property from adjacent properties no more than 10 feet.

    b. The soft shoreline stabilization design shall size and arrange any gravels, cobbles, logs, and boulders so that the project remains stable in the long-term and dissipate wave energy, without presenting extended linear faces to oncoming waves.

83.310 Breakwaters, Jetties, Groins

1. Breakwaters, jetties, and groins are not permitted in the Natural, Urban Conservancy, or Residential – L shoreline environments. Breakwaters, jetties, and groins may only be permitted in other shoreline environments where necessary to support water-dependent uses, public access, shoreline stabilization, or other specific public purpose.

2. The City will permit the construction and use of a breakwater, jetty or groin only if:

    a. The structure is essential to the safe operation of a moorage facility or the maintenance or other public water-dependent uses, such as swimming beaches;

    b. The City determines that the location, size, design, and accessory components of the moorage facility or other public water-dependent uses to be protected by the breakwater are distinctly desirable and within the public interest; and

    c. Any undesirable effects or adverse impacts upon the environment or upon nearby waterfront properties from the structure are clearly outweighed by the benefits to the public provided by the moorage facility or other public water-dependent uses to be protected by the breakwater.

3. Design Standards

    a. All breakwaters, jetties or groins must be designed and constructed under the supervision of a civil engineer or similarly qualified professional. As part of the application, the engineer or other professional designing the breakwater, jetty or groin must certify that it is the smallest possible structure to meet the requirements of this chapter and accomplish the project's purpose. Also to be certified is that the design will result in the minimum possible adverse impacts upon shoreline ecological functions, nearby waterfront properties and navigation.

    b. Breakwaters may only use floating or open-pile designs.

83.320 Dredging and Dredge Material Disposal

1. New development shall be sited and designed to avoid or, if that is not possible, to minimize the need for new and maintenance dredging.

2. Dredging and dredge material disposal waterward of the ordinary high water mark may be allowed for the following purposes and under the following circumstances:

    a. To establish, expand, relocate or reconfigure navigation channels and basins where necessary for assuring safe and efficient accommodation of existing navigational uses and then only when significant ecological impacts are minimized and when mitigation is

provided. Maintenance dredging of established navigation channels and basins shall be restricted to maintaining previously dredged and/or existing authorized location, depth, and width.

b. To maintain the use of existing private or public boat moorage, water-dependent use, or other public access use. Maintenance dredging is restricted to maintaining previously dredged and/or existing authorized location, depth, and width.

c. To restore ecological functions, provided the applicant can demonstrate a clear connection between the proposed dredging and the expected environmental benefits to water quality and/or fish and wildlife habitat.

d. To obtain fill or construction material when necessary for the restoration of ecological functions. Dredging waterward of the ordinary high water mark for the primary purpose of obtaining fill or construction materials is not permitted under other circumstances. When allowed, the site where the fill is to be placed must be located waterward of the ordinary high water mark. The project must be associated with a significant habitat enhancement project.

e. Depositing dredge materials waterward of the ordinary high water mark may be allowed only in approved sites, only when the material meets or exceeds pollutant standards, and only for one (1) or more of the following reasons:

1) For fish or wildlife habitat improvement, or

2) For permitted beach enhancement.

3. Dredging Design Standards –

a. All permitted dredging must be the minimum area and volume necessary to accommodate the existing or proposed use, and must be implemented using practices that do not exceed State water quality standards.

b. Dredging projects shall be designed and carried out to prevent direct and indirect impacts on adjacent properties.

5. Submittal Requirements - In addition to the minimum application requirements, the following information shall be required for all dredging applications:

a. A description of the purpose of the proposed dredging.

b. A detailed description of the existing physical character, shoreline geomorphology and biological resources provided by the area proposed to be dredged, including:

1) A site plan map outlining the perimeter of the proposed dredge area. The map must also include the existing bathymetry depths based on the ordinary high water mark and have data points at a minimum of 2-foot depth increments.

2) A habitat survey must be conducted to identify aquatic vegetation, potential native fish spawning areas, or other physical or biological habitat parameters.

3) Information on stability of lakebed adjacent to proposed dredging area.

c. A detailed description of the physical, chemical and biological characteristics of the dredge spoils to be removed.

1) Physical analysis of material to be dredged: material composition and amount, grain size, organic materials present, source of material, etc.

2) For projects exceeding 1,000 cubic yards or projects in areas that the City has reason to believe may contain higher levels of chemical contaminants, the following may be required:

1. Chemical analysis of material to be dredged: including metals, organics, hydrocarbons, pesticides, etc.

2. Biological analysis of material to be dredged.

d. A description of the method of materials removal, including facilities for settlement and movement.

1) Dredging procedure: length of time it will take to complete dredging, method of dredging, and amount of material removed.

2) Frequency and quantity of project maintenance dredging.

e. Detailed plans for dredge spoil disposal, including, but not limited to:

1) Specific approved land or open-water disposal site.

2) Total initial spoils volume.

3) Plan for anticipated future maintenance dredging and disposal for at least a fifty (50)-year period.

83.330 Land Surface Modification

1. General – The following standards must be met for any approved land surface modification:

a. Land surface modification within required shoreline setback shall only be permitted upon approval of a land surface modification permit, under the provisions established in KMC Title 29.

b. The land surface modification shall be consistent with the provisions of this Chapter, including, but not limited to, the regulations regarding streams, wetlands and their buffers, geologically hazardous areas, shoreline vegetation, and trees.

c. The land surface modification is consistent with the provisions of the most current edition of the Public Works Department's Pre-Approved Plans and Policies.

d. All excess material resulting from land surface modification shall be disposed of in a manner that prevents the material entering into a waterbody through erosion or runoff. Where large quantities of plants are removed by vegetation control activities authorized under this section, plant debris shall be collected and disposed of in an appropriate location located outside of the shoreline setback.

e. Areas disturbed by permitted land surface modification in the shoreline setback shall be stabilized with approved vegetation.

f. All materials used as fill shall be non-dissolving and non-decomposing. Fill material shall not contain organic or inorganic material that would be detrimental to water quality or existing habitat, or create any other significant adverse impacts to the environment.

g. The land surface modification must be the minimum necessary to accomplish the underlying reason for the land surface modification.

2. Permitted Activities -

a. Land surface modification is prohibited within the shoreline setback, except for the following:

1) Land surface modification for the purpose of shoreline habitat and natural systems enhancement projects, setting back shoreline stabilization measures or portions of shoreline stabilization measures from the ordinary high water mark, or soft shoreline stabilization measures under a plan approved by the City.

2) Land surface modification authorized by a valid shoreline permit or approval issued by the City.

3) Except as is necessary during construction, dirt, rocks and similar materials may not be stockpiled on the subject property. If stockpiling is necessary during construction, it must be located as far as possible from the lake and strictly contained to prevent

erosion and runoff.

4) Land surface modification associated with the installation of improvements located within the shoreline setback or waterward of the ordinary high water mark, as permitted under KZC Section 83.180.4.d.

5) Removal of prohibited vegetation.

6) Land surface modification performed in the normal course of maintaining existing landscaping on a lot associated with an existing building or buildings, provided such work:

a) Does not modify any drainage course.

b) Does not involve the importation of fill material, except as needed for mulch or soil amendment.

c) Does not involve removal of native vegetation or vegetation installed as part of an approved restoration or enhancement plan, unless approved by the Planning Official.

d) Does not result in erosion of the shoreline or undermine stability of neighboring properties.

e) Does not result in the compaction of existing soils in a manner that significantly decreases the ability of the soil to absorb rainfall.

f) Is the minimum extent necessary to reasonably accomplish the maintenance activity.

6) Correction of storm drainage improvements when supervised by the Department of Public Works.

7) Land surface modification that is necessary to maintain or upgrade the structural safety of an existing structure.

8) Exploratory excavations under the direction of a professional engineer licensed in the state of Washington, as long as the extent of the land surface modification does not exceed the minimum necessary to obtain the desired information.

b. Land surface modification outside of the shoreline setback is regulated as land surface modifications throughout the City. See KMC Title 29 for those regulations.

83.340 Fill

1. Fill shall be permitted only where it is demonstrated that the proposed action will not:

a. Result in significant damage to water quality, fish, aquatic habitat, and/or wildlife habitat; or

b. Adversely alter natural drainage and circulation patterns, currents, or stream flows, or significantly reduce flood water holding capabilities.

2. Fills landward and waterward of the ordinary high water mark shall be designed, constructed, and maintained to prevent, minimize, and control all material movement, erosion, and sedimentation from the affected area.

3. Fills waterward of the OHWM shall be permitted only:

a. In conjunction with an approved water-dependent or public access use, including maintenance of beaches;

b. In conjunction with the expansion or alteration of transportation facilities of statewide significance currently located on the shoreline and then only upon a demonstration that alternatives to fill are not feasible;

c. As part of an approved mitigation or restoration project.

4. Any placement of materials landward of the ordinary high water mark shall comply with the provisions in KZC 83.330 for land surface modification.

5. No refuse disposal sites, solid waste disposal sites, or sanitary fills shall be permitted.

83.350 Shoreline Habitat and Natural Systems Enhancement Projects

1. Purpose - Shoreline habitat and natural systems enhancement projects include those activities proposed and conducted specifically for the purpose of establishing, restoring, or enhancing habitat for priority species in shorelines.

2. Covered Activities – The following actions are allowed under this section, provided they first meet the purpose stated in subsection 1. above:

   a. Establishment or enhancement of native vegetation.

   b. Removal of non-native or invasive plants upland of the ordinary high water mark, including only those identified as noxious weeds on King County's published Noxious Weed List, unless otherwise authorized by the City.

   c. Conversion of hard structural shoreline stabilization to soft shoreline stabilization, including associated clearing, dredging and filling necessary to implement the conversion, provided that the primary purpose of such actions is clearly restoration of the natural character and ecological functions of the shoreline.

   d. Implementation of any project or activity identified in the Restoration Plan, as adopted by the City Council on XX, under Ordinance XX.

   e. Implementation of any project or activity identified in the *Final WRIA 8 Chinook Salmon Conservation Plan* and related documents.

83.360 Shoreline Setbacks

1. Improvements permitted within the Shoreline Setback - See standards contained in KZC Section 83.180.4.

2. Shoreline Setback Reductions –

   a. In the Residential – L shoreline environment, the shoreline setback may be reduced by two (2) feet if subject to the Historic Preservation provisions of KMC 22.28.048.

   b. The required shoreline setback may be reduced down to a minimum of twenty-five (25) feet when setback reduction impacts are mitigated using a combination of the mitigation options provided in the table below to achieve an equal or greater protection of lake ecological functions. The following standards shall apply to any reduced setback:

      i. The minimum setback that may be approved through this provision is 25 feet. Any further setback reduction beyond that allotted in this Section shall require approval of a shoreline variance application.

      ii. All property owners who obtain approval for a reduction in the setback must comply with the best management practices contained in KZC Section 83.450.3.h addressing the use of fertilizer, herbicides and pesticides as needed to protect lake water quality.

      iii. The City may accept previous actions that meet the provisions established in c) below as satisfying the requirements of this section, provided that the improvements were completed after December, 2006 and all other provisions, such as the agreement noted in subsection v) below are completed. The reduction allowance for previously completed reduction actions may only be applied once on the subject property.

      iv. All property owners who obtain approval for a reduction in the setback must record the final approved setback and corresponding conditions in a form acceptable to the City Attorney, and recorded with the King County Department of Records and Elections. Land survey information shall be provided by the applicant for this purpose in a format approved by the Planning Official.

   c. The shoreline setback may be reduced to no less than 25 feet in all cases by the following:

Shoreline Setback Reduction Alternatives

	Reduction Mechanism	Reduction Allowance
Water Related Conditions or Actions		
1	Presence of natural shoreline conditions (e.g., no hard structural shoreline stabilization measure) located at, below, or within 5 feet landward of the lake's ordinary high water mark (OHWM) along at least 75 percent of the linear lake frontage of the subject property. This can include the ~~R~~removal of an existing hard structural shoreline stabilization measure ~~covering at least 75 percent of the linear lake frontage which is located at, below, or within 5 feet landward of the lake's ordinary high water mark (OHWM)~~ and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography, and beach/substrate composition. This option cannot be used in	Reduce required setback by 10 percentage points

	Reduction Mechanism	Reduction Allowance
	conjunction with #2 below~~;~~	
2	Presence of natural shoreline conditions (e.g., no hard structural shoreline stabilization measure) located at, below, or within 5 feet landward of the lake's ordinary high water mark (OHWM) along at least 15 linear feet of the lake frontage of the subject property. This can include the ~~Removal~~ removal of an existing hard structural shoreline stabilization measure ~~covering at least 15 linear feet of the lake frontage which is located at, below, or within 5 feet landward of the lake's OHWM~~ and subsequent restoration of the shoreline to a natural or semi-natural state, including creation or enhancement of nearshore shallow-water habitat, beach/substrate composition. This option cannot be used in conjunction with #1 above;	Reduce required setback by 7.5 percentage points
3	Opening of previously piped on-site watercourse to allow potential rearing opportunities for anadromous fish for a minimum of 25 feet in length; Opened watercourses must be provided with a native planted buffer at least five (5) feet wide on either side of the stream, and must not encumber adjacent properties without express written permission of the adjacent property owner. Opened watercourses must be designed by a qualified professional.	Reduce required setback by 5 percentage points
4	The hard structural shoreline stabilization measure is setback from the OHWM by several feet and/or is sloped at 1 Vertical (V):3 Horizontal (H). angle to provide dissipation of wave energy and increase the quality or quantity of nearshore shallow-water habitat.	Reduce required setback by 5 percentage points
5	Soft shoreline stabilization measures are installed waterward of the ordinary high water mark. Soft shoreline stabilization measures may include the use of gravels, cobbles, boulders, and logs, as well as vegetation. The material should be sized and placed to remain stable and accommodate alteration from wind- and boat-driven waves and shall be graded to a maximum slope of 1 Vertical (V):4 Horizontal (H).	Reduce required setback by 2 percentage points
Upland Related Conditions or Actions		
46	Installation of biofiltration/infiltration mechanisms in lieu of piped discharge to the lake, such as ~~Full Dispersion or Full Infiltration~~infiltrating or dispersing it on the surface of the subject property, that are sized to store a minimum of 70% of the annual volume of runoff water from the subject property, for sites with poor soils, or 99% of the annual volume of runoff water from the subject property, for sites with well-draining soils. This mechanism shall apply to sites where the total new or replaced impervious surface is less than or equal to 5,000 square feet. The mechanisms shall be designed to meet the ~~based on~~ requirements in the current surface water design manual. ~~, where the total new or replaced impervious surface is less than or equal to 5,000 square feet.~~	Reduce required setback by 2 percentage points
7	Increasing the width of the required landscape strip within the reduced shoreline setback for a minimum of 5 additional feet.~~.~~	Reduce required setback by 2 percentage points

Reduction Mechanism		Reduction Allowance
6	Installation of pervious material for all pollution generating surfaces such as a driveway, parking or private road, that ~~.~~ allows water to pass through at rates similar to pre-developed conditions.	Reduce required setback by 2 percentage points
7	Limiting the lawn area within the shoreline setback to no more than 50 percent of the reduced setback area.	Reduce required setback by 2 percentage points
8	Preserving or restoring at least 20 percent of the total lot area outside of the reduced setback and any critical areas and their associated buffers as native vegetation.	Reduce required setback by 2 percentage points

83.370 Shoreline Vegetation Management

2 Tree Retention. To maintain the ecological functions that trees provide to the shoreline environment, significant trees shall be retained or, if removed, the loss of shoreline ecological functions shall be mitigated for, subject to the following standards:~~as follows:~~

a. Tree removal on a property on which no development activity is proposed or in progress.

1) Any owner of developed property may remove up to two significant trees from their property, subject to the standards contained in Chapter 95 KZC.

2) Replanting Requirements –

i. If a significant tree located within the shoreline setback area is proposed to be removed, is damaged or has fallen and needs to be removed from the site, a three-for-one replacement is required as mitigation. The required minimum size of the replacement trees shall be six (6) feet tall for a conifer and 2-inch caliper for deciduous or broad-leaf evergreen tree.

ii. For required replacement trees, a planting plan showing location, size and species of the new trees is required to be submitted to and approved to by the Planning Official. All replacement trees in the shoreline setback must be selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester.

iii. Tree replacement planting required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates that it is not feasible to plant all of the required mitigation trees on the subject property, given the existing tree canopy coverage and location of trees on the property, the location of structures on the property, and minimum spacing requirements for the trees to be planted. In this circumstance, the applicant or property owner may request an alternate mitigation that will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. Requests to use alternative measures shall be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request.

~~1)Submittal Requirements – When proposing to trim or remove any tree located within the shoreline setback, the property owner must submit a Tree Removal/Pruning Request form to the City containing the following:~~

~~i.~~iv. ~~A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of structures, driveways, access ways and easements.~~

ii.An arborist report explaining how the tree(s) fit the criteria for a nuisance or hazard tree. This requirement may be waived by the Planning Official if it is determined that the nuisance or hazard condition is obvious.

iii.v. If removal of a significant tree in the shoreline setback area is approved by the Planning Official, a three-for-one replacement is required. The required minimum size of the replacement tree shall be six (6) feet tall for a conifer and 2-inch caliper for deciduous or broad-leaf evergreen tree. For required replacement trees, a planting plan showing location, size and species of the new trees is required.

iv.vi. Tree replacement planting required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates that alternate measures or procedures will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. Requests to use alternative measures and procedures shall be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request. The Planning Official or Urban Forester shall consider the existing tree canopy coverage on the property, ability to accommodate additional trees, given needed spacing requirements, and the ability of the alternative replanting to replace existing functions of the tree that was removed.

2)Standards - Within the shoreline setback, existing significant trees shall be retained unless the tree is determined to be a hazard or nuisance tree.

i.Hazard Tree Criteria. For the purposes of this subsection, Hazard Tree Criteria is assessed by 1) the presence of a defect as an indicator of potential tree failure, and 2) the presence of a moderate to high-use target area. Low-use target areas would include those areas which are infrequently or seldom used for any great length of time, such as an overflow parking area, natural or wilderness areas, etc. Moderate use would include those areas where people move through regularly, but do not stay, such as parks, parking lots, secondary roads, etc. High-use targets would include those areas that are frequently used by people, often for longer periods of time, or high volumes of people coming and going. Examples would include pick-up/drop off areas, visitor centers, residential buildings, main arterial roads, etc.'; A hazard tree must meet the following criteria:

(a)The tree must have a combination of structural defects and/or disease which makes it subject to a high probability of failure and is in proximity to moderate-high frequency of persons or property and

(b)The hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

ii.Nuisance Tree Criteria. A nuisance tree must meet the following criteria:

(a)Tree is causing obvious, physical damage to private or public structures, including but not limited to: sidewalk, curb, road, driveway, parking lot, building foundation, roof;

(b)Tree has been damaged by past maintenance practices, that cannot be corrected with proper arboricultural practices; or

(c)The problems associated with the tree must be such that they cannot be corrected by any other reasonable practice. Including but not limited to the following:

(i)Pruning of the crown or roots of the tree and/or small modifications to the site including but not limited to a driveway, parking lot, patio or sidewalk to alleviate the problem.

(ii)Pruning, bracing, or cabling to reconstruct a healthy crown.

b. Tree removal on a property on which development activity is proposed or in progress.

i. Submittal Requirements – When proposing a development activity on a lot containing trees within the shoreline setback, the following shall be required:

(a) A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of structures, driveways, access ways and easements.

(b) An arborist report stating the size (DBH), species, and assessment of health and determination of all trees located within the shoreline setback. This requirement may be waived by the Planning Official if it is determined that there are no trees within the shoreline setback that have the potential to be impacted by proposed development activity.

ii. Standards - Within the shoreline setback, existing significant trees shall be retained, provided that the trees are determined to be healthy and windfirm by a qualified professional, and provided the trees can be safely retained with proposed development activity. The Planning Official is authorized to require site plan alterations to retain significant trees in the shoreline setback. Such alterations include minor adjustments to the location of building footprints, adjustments to the location of driveways and access ways, or adjustment to the location of walkways, easements or utilities. The applicant shall be encouraged to retain viable trees in other areas on-site.

iii. Replanting Requirements –

~~(b)~~(a) If removal of a significant tree in the shoreline setback area is approved by the Planning Official, a three-for-one replacement is required. The required minimum size of the replacement trees shall be (6) feet tall for a conifer and 2-inch caliper for deciduous or broad-leaf evergreen tree.

(b) For required replacement trees, a planting plan showing location, size and species of the new trees is required. All replacement trees in the shoreline setback must be selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester.~~.~~

(c) Tree replacement planting required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates that it is not feasible to plant all of the required mitigation trees on the subject property, given the existing tree canopy coverage and location of trees on the property, the location of structures on the property, and minimum spacing requirements for the trees to be planted. In this circumstance, the applicant or property owner may request an alternate mitigation that will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. Requests to use alternative measures shall be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request.

c. Tree Pruning - Non-destructive thinning of lateral branches to enhance views or trimming, shaping, thinning or pruning of a tree necessary to its health and growth is allowed, consistent with the following standards:

~~2)~~1) In no circumstance shall removal of more than one-third (1/3) of the original crown be permitted;

~~3)~~2) Pruning does not include topping, stripping of branches or creation of an imbalanced canopy;

~~4)~~3) Pruning should retain branches that overhang the water to the maximum extent possible; and

~~5)~~4) Pruning does not directly impact the nearshore functions and values including fish and wildlife habitat.

d. Required Landscaping – Riparian vegetation contributes to shoreline ecological functions by a number of different ways, including maintaining temperature; removing excessive nutrients and

toxic compounds, attenuating wave energy, sediment removal and stabilization; and providing woody debris and other organic matter. In order to minimizing potential impacts to shoreline ecological functions from development activities, the following shoreline landscaping standards are required:~~To maintain the ecological functions that trees provide to the shoreline environment, significant trees shall be retained as follows:~~

1) Minimum Landscape Standard Compliance - The applicant shall plant native vegetation, as necessary, in at least 75 percent of the nearshore riparian area located along the water's edge. The vegetated portion of the nearshore riparian area shall average ten (10) feet in depth from the ordinary high water mark, but may be a minimum of five (5) feet wide to allow for variation in landscape bed shape and plant placement. For Detached, Attached or Stacked Dwelling Units within the Residential – M/H shoreline environment, the vegetated portion of the nearshore riparian area shall average fifteen (15) feet in depth from the ordinary high water mark. Installation of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least three (3) trees per 100 linear feet of shoreline must be included in the plan. Plant materials must be native and selected from the Kirkland Native Plant List, or other native species approved by the Planning Official or Urban Forester.~~.~~

~~6)~~2) Use of Existing Vegetation - The City may accept existing native trees, shrubs and groundcover as meeting the requirements of this section, including vegetation previously installed as part of a prior development activity, provided that the existing vegetation provides a landscape strip at least as effective in protecting shoreline ecological functions as the required landscaping. The City may require the applicant to plant trees, shrubs, and groundcover according to the requirements of this section to supplement the existing vegetation in order to provide a buffer at least as effective as the required buffer.

~~7)~~3) Landscape Plan Required - The applicant shall submit a landscape plan that depicts the quantity, location, species, and size of plant materials proposed to comply with the requirements of this section, and shall address the plant installation and maintenance requirements set forth in KZC Section 95.45. Plant materials shall be identified with both their scientific and common names. Any required irrigation system must also be shown.

~~8)~~4) Vegetation placement – Vegetation selection and placement shall comply with the following standards:

i. Vegetation shall be selected and positioned on the property so as not to obscure the public view within designated view corridors from the public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake at the time of planting or upon future growth.

ii. Vegetation may be selected and positioned to maintain private views of the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met.

~~9)~~5) Alternative Compliance. Landscaping required by this section shall be performed in compliance with the applicable standards contained in this section, unless the applicant demonstrates that alternate measures or procedures will be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining and improving shoreline ecological functions and processes. Requests to use alternative measures and procedures shall be reviewed by the Planning Official and City's shoreline consultant, who may approve, approve with conditions, or deny the request. The cost of producing and implementing the plan, as well as the review of the proposal by the City's consulting biologist, shall be borne by the applicant. Examples include but are not limited to:

i. For a proposed modification to the landscape strip –

(a) Softening or removal of existing hard shoreline stabilization measures or portions thereof.

(b) Opening of previously piped on-site watercourse to allow potential rearing opportunities for anadromous fish.

ii. For a proposed modification to the tree plantings required as part of the landscape strip –

(a) Increasing the width of the required landscape strip within the shoreline setback for a minimum of five (5)additional feet.

~~i.Removal of an existing hard structural shoreline stabilization measure covering at least 15 feet of the lake frontage which is located at, below, or within 5 feet landward of the lake's OHWM and subsequent restoration of the shoreline to a natural or semi-natural state, including creation of shallow-water beach habitat and beach/substrate composition.~~

~~ii.Setting back hard structural shoreline stabilization measures or portions of hard structural shoreline stabilization measures from the ordinary high water mark and subsequent restoration of the shoreline to a natural or semi-natural state, including creation of shallow-water beach habitat and beach/substrate composition.~~

~~(a)Use of low impact development techniques that demonstrate a significant improvement in water quality treatment from the site..~~

~~iii.Placing fill material for purposes of habitat enhancement (creation or restoration of nearshore shallow-water habitat) waterward of the ordinary high water mark.~~

~~iv.~~iii. ~~Opening of previously piped on-site watercourse to allow potential rearing opportunities for anadromous fish. Opened watercourses must be provided with a native planted buffer at least five (5) feet wide on either side of the stream and a minimum 20 foot wide structure setback measured from the ordinary high water mark of the stream, and must not encumber adjacent properties without express written permission of the adjacent property owner. Opened watercourses must be designed by a qualified professional with experience in stream restoration.~~

~~10)~~6) Responsibility for Regular Maintenance.

i. The applicant, landowner, or successors in interest shall be responsible for the regular maintenance of landscaping required under this section. Plants that die must be replaced in kind.

ii. All required landscaping shall be maintained throughout the life of the development. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and a recorded agreement to maintain and replace all landscaping that is required by the City.

83.390 View Corridors

1. General - Development within the shoreline area located west of Lake Washington Boulevard and Lake Street South shall include public view corridors which provides the public an unobstructed view of the water.

2. Standards -

a. For properties lying waterward of Lake Washington Boulevard and Lake Street South, a minimum view corridor of thirty percent of the average parcel width must be maintained. The intent of the corridor is to provide an unobstructed view from the adjacent public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake. A view of the shoreline edge of the subject property should be provided if existing topography, vegetation, and other factors allow for this view to be retained.

b. Properties located in the UM Shoreline Environment where view corridors have been previously established under an approved Master Plan or zoning permit approved under the provisions of Chapter 152 KZC shall comply with the view corridor requirements as approved. Modifications to the proposed view corridor shall be considered under the standards established in the Master Plan or approved zoning permit.

3. Exceptions - The requirement for a view corridor does not apply to the following:
   a. The following water-dependent uses:
      1) Marina, but only piers, docks, and floats and temporary storage of boats undergoing service or repair
      2) Piers, docks, floats, boatlifts and canopies
      3) Tour Boat Facility, ferry terminal or water taxi, but not including permanent structures greater than 200 square feet in size housing commercial uses ancillary to the facility
      4) Moorage buoy
      5) Public Access Pier or Boardwalk
      6) Boat launch
   b. Public Parks
   c. Properties located in the UM Shoreline Environment within the Central Business District
4. View corridor location - The location of the view corridor shall be designed to meet the following location standards, and must be approved by the Planning Official.
   a. If the subject property does not directly abut the shoreline, the view corridor shall be designed to coincide with the view corridor of the property to the west.
   b. The view corridor must be adjacent to either the north or south property line of the subject property, whichever will result in the widest view corridor, considering the following, in order of priority:
      1) Location of existing view corridors.
      2) Existing development or potential development on adjacent properties, given the topography, access and likely location of future improvements.
      3) The availability of actual views of the water and the potential of the lot for providing those views from the street.
      4) Location of existing sight-obscuring structures, parking areas or landscaping that are likely to remain in place in the foreseeable future.
   c. The view corridor must be in one continuous piece.
   d. For land divisions, the view corridor shall be established as part of the land division and shall be located to create the largest view corridor on the subject property.
5. Permitted encroachments -
   a. The following shall be permitted within a view corridor:
      1) Areas provided for public access, such as public pedestrian walkways, public use areas, or viewing platforms.
      2) Parking lots and subsurface parking structures, provided that the parking does not obstruct the view from the public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake.
      3) Structures may be located in view corridors if the slope of the subject property permits full, unobstructed views of the waters of Lake Washington and the shoreline on the opposite side of the Lake over the structures from the public right-of-way.
      4) Shoreline restoration plantings and existing specimen trees and native shoreline vegetation.
      5) Landscaping, provided it is designed not to obscure the view from the public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake at

the time of planting or upon future growth. The Planning Official shall determine appropriate landscaping in the event of a conflict between required site screening and view preservation.

6) Open fencing that is designed not to obscure the view from the public right-of-way to the waters of Lake Washington and the shoreline on the opposite side of the Lake.

b. The following shall not be permitted within a view corridor:

1) Structures, except as noted in subsection 5.a above.

2) Sight obscuring fences.

3) Landscaping that would screen the view of the shoreline at the time of planting or upon future growth.

6. Dedication - The applicant shall grant an easement or similar legal agreement, in a form acceptable to the City Attorney, and recorded with the King County Department of Records and Elections to protect the view corridor. Land survey information shall be provided by the applicant for this purpose in a format approved by the Planning Official.

83.390 Public Access

1. General – Promoting a waterfront pedestrian corridor is an important goal within the City. Providing pedestrian access along Lake Washington enables the public to view and enjoy the scenic beauty, natural resources, and recreational activities that are found along the shoreline. This pedestrian corridor provides opportunities for physical recreation and leisure and serves as a movement corridor. Connections between the waterfront walkway and the public right-of-way serve to link the walkway with the larger pedestrian network.

The applicant shall comply with the following pedestrian access requirements with new development for all uses and land divisions under KMC Chapter 22, pursuant to the standards of this section:

a. Pedestrian Access Along the Water's Edge – Provide public pedestrian walkways along the water's edge.

b. Pedestrian Access From Water's Edge to Right-of-Way – Provide public pedestrian walkways designed to connect the waterfront pedestrian corridor to the abutting right-of-way.

2. Public Pedestrian Walkway Location – The applicant shall locate public pedestrian walkways pursuant to the following standards:

a. The walkways shall be designed and sited to minimize the amount of native vegetation removal, impact to existing significant trees, soil disturbance, and disruption to existing habitat corridor structures and functions.

b. The walkways shall be located along the water's edge between the development and the shoreline at an average of 10 feet but no closer than 5 feet landward of the ordinary high water mark so that the walkway may meander and not be a straight line.

c. The public nature of the access shall be maximized by locating the walkways adjacent to other public areas including street-ends, waterways, parks, other public access and connecting trails.

d. The walkways shall maximize views of the water and sun exposure.

e. The walkways shall be located along pedestrian-oriented facades, as defined in KZC Chapter 92, where applicable and if feasible.

f. The walkways shall be situated so as to minimize significant grade changes and the need for stairways.

g. The walkways shall minimize intrusions of privacy for occupants and residents of the site by avoiding locations directly adjacent to residential windows and outdoor private open spaces, or by screening or other separation techniques.

h. The walkways shall be located so as to avoid undue interference with the use of the site by water-dependent businesses.

i. The Planning Official shall determine the appropriate location of the walkway on the subject property when planning for the connection of a future waterfront walkway on an adjoining property.

3. Development Standards Required for Pedestrian Improvements - The applicant shall install pedestrian walkways pursuant to the following standards:

a. The walkways shall be at least six feet wide, and contain a permeable paved walking surface, such as unit pavers, grid systems, porous concrete, or equivalent material approved by the Planning Official.

b. The walkways shall be distinguishable from traffic lanes by pavement material, texture, or change in elevation.

c. The walkways shall not be included with other impervious surfaces for lot coverage calculations.

d. Permanent barriers which limit future extension of pedestrian access between the subject property and adjacent properties are not permitted.

e. Regulated public access shall be indicated by signs installed at the entrance of the public pedestrian walkway on the abutting right-of-way and along the public pedestrian pathway. The signs shall be located for maximum public visibility. Design, materials and location of the signage shall meet City specifications.

f. All public pedestrian walkways shall be provided through a minimum 6-foot wide easement or similar legal agreement, in a form acceptable to the City Attorney, and recorded with the King County Department of Records and Elections. Land survey information shall be provided by the applicant for this purpose in a format approved by the Planning Official.

4. Operation and Maintenance Requirements for Pedestrian Improvements – The following operation and maintenance requirements apply to all public pedestrian walkways required under this section:

a. Hours of operation and limitations on accessibility – All required pedestrian walkways shall be open to the public between the hours of 10 am to 8 pm, from March 21st to September 21st`. Otherwise the pedestrian walkway shall be open between the hours of 10 am to 5 pm.

b. The applicant is permitted to secure the subject property outside of the hours of operation noted in subsection 4.a above by a security gate, subject to the following provisions:

1) The gate shall remain in an open position during hours of permitted public access; and

2) Signage shall be included noting the hours of permitted public access.

c. The Planning Official is authorized to approve a temporary closure when hazardous conditions are present that would affect public safety.

d. Performance and maintenance.

1) No certificate of occupancy or final inspection shall be issued until all required public access improvements are completed, except under special circumstances approved by the Planning Official and after submittal of an approved performance security.

2) The owner, its successor or assigns, shall be responsible for the completion and maintenance of all required waterfront public access areas and signage on the subject property.

5. Exceptions and Modifications

a. General – The provisions of this subsection establish under what circumstances the requirements of this section do not apply or may be modified.

b. Exception

1) The requirement for the dedication and improvement of public access does not apply to:

a) Development located within the Residential - L shoreline environment, except as follows:

i) Public entities, such as a government facility or public park, located within the Residential - L shoreline environment are required to provide public access pursuant to the provisions of this section.

b) Development located within the Natural shoreline environment.

c) Individual single-family residences and normal appurtenances associated with a single-family residence that is not part of a land division. For development involving land division, public pedestrian access is required.

c. Modifications

1) The Planning Official may require or grant a modification to the nature or extent of any required improvement for any of the following reasons:

a) If the presence of critical areas such as wetlands, streams, or geologically hazardous areas preclude the construction of the improvements as required.

b) To avoid interference with the operations of water-dependant uses, such as marinas.

c) If the property contains unique characteristics, such as size, configuration, topography, or location.

d) If the access would create unavoidable health or safety hazards to the public.

2) If a modification is granted, the Planning Official may require that an alternate method of providing public access, such as a public use area or viewing platform, be provided.

3) Access from the right-of-way to the waterfront walkway may be waived by the Planning Official if the following applies:

a) If public access along the waterfront of the subject property can be reached from an adjoining property, and

b) If the adjoining property providing access to the waterfront contains an existing public access walkway connecting with the public right-of-way and the maximum separation between public access entry points along the public right-of-way is 300 feet; and

c) If the subject property does not contain a public use area required as a condition of development by the Planning Official under the provisions of this Chapter.

83.400 Standards for In-Water Activity

1. Standards – The following standards shall apply to in-water work, including, but not limited to, installation of new structures, repair of existing structures, restoration projects, and aquatic vegetation removal:

a. In-water structures and activities shall be sited and designed to avoid the need for future shoreline stabilization activities and dredging, giving due consideration to watershed

functions and processes, with special emphasis on protecting and restoring priority habitat and species.

b. In-water structures and activities are not subject to the shoreline setbacks established in KZC 83.180.

c. Projects involving in-water work must obtain all applicable state and federal permits, including those from the U.S. Army Corps of Engineers, Washington Department of Ecology, and Washington Department of Fish and Wildlife.

d. Projects involving in-water work shall comply with timing restrictions as set forth by state and federal project approvals.

e. Removal of existing structures shall be accomplished so the structure and associated material does not re-enter the lake.

f. Waste material such as construction debris, silt, excess dirt or overburden resulting from in-water structure installation shall be deposited above the ordinary high water mark in an approved upland disposal site.

g. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the lake during in-water activities. Appropriate spill clean-up materials must be on-site at all times, and any spills must be contained and cleaned immediately after discovery.

h. In-water work shall be conducted in a manner that causes little or no siltation to adjacent areas. A sediment control curtain shall be deployed in those instances where siltation is expected. The curtain shall be maintained in a functional manner that contains suspended sediments during project installation.

i. Any trenches, depressions, or holes created below the ordinary high water mark shall be backfilled prior to inundation by high water or wave action.

j. Fresh concrete or concrete by-products shall not be allowed to enter the lake at any time during in-water installation. All forms used for concrete shall be completely sealed to prevent the possibility of fresh concrete from entering the lake.

k. Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to perform the in-water work. All disturbed areas shall be protected from erosion using vegetation or other means.

l. All trash and unauthorized fill, including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, and paper, below the ordinary high water mark shall be removed and deposited above the ordinary high water mark in an approved upland disposal location.

m. If at any time, as a result of in-water work, fish are observed to be in distress or killed, or water quality problems develop, immediate notification shall be made to the Washington Department of Ecology.

83.410 Miscellaneous Standards

1. <u>Screening of Storage and Service Areas</u>

a. Outdoor Use, Activity and Storage. Outdoor Use, Activity and Storage areas must comply with the following:

1) Comply with the shoreline setback established for the use with which they are associated.

2) Be located to minimize visibility from any street, Lake Washington, required public pedestrian walkway, public use area or public park.

3) Be screened from view from the street, adjacent properties, Lake Washington, required public pedestrian walkways, and other public use areas by a solid screening enclosure or within a building.

4) Outdoor dining areas and temporary storage for boats undergoing service or repair that are accessory to a marina are exempt from the placement and screening requirements of subsection (2) and (3) above.

b. Mechanical and similar equipment or appurtenances.

1) At-grade mechanical and similar equipment or appurtenances are not permitted within the shoreline setback.

2) Rooftop appurtenances and at or below grade appurtenances shall be screened with landscaping or a solid screening enclosure or located in such a manner as to not be visible from Lake Washington, required public pedestrian walkways, or public use areas.

c. Garbage and trash receptacles. Garbage and recycling receptacles must comply with the following:

1) Comply with the shoreline setback established for the use with which they are associated.

2) Be located to minimize visibility from any street, Lake Washington, required public pedestrian walkway, public use area or public parks.

3) Be screened from view from Lake Washington, required public pedestrian walkways, and other public use areas by a solid screening enclosure, such as a wooden fence without gaps, or within a building.

4) Exemptions – Garbage receptacles for detached dwelling units, duplexes, moorage facilities, parks, and construction sites, but not including dumpsters or other containers larger than a typical individual trash receptacle, are exempt from the placement and screening requirements of this section.

2. Design Standards -

a. Water-enjoyment and non-water oriented commercial and recreational uses shall contain the following design features to provide for the ability to enjoy the physical and aesthetic qualities of the shoreline:

1) Buildings are designed with windows that orient toward the shoreline.

2) Buildings are designed to incorporate outdoor areas such as decks, patios, or viewing platforms that orient toward the shoreline.

3) Buildings are designed with entrances along the waterfront façade and with connections between the building and required public pedestrian walkways.

4) Service areas are located away from the shoreline.

5) Site planning includes public use areas along waterfront public pedestrian walkways, if required under the provisions established in KZC 83.390, which will encourage pedestrian activity, including but not limited to:

i) Permanent seating areas;

ii) Landscaping, including trees to provide shade cover; and

iii) Trash receptacles.

6) Exemptions – The following are exempt from the requirements of subsection 2.a:

a) Non-water oriented commercial and recreational uses which are located on the east side of Lake Washington Blvd. NE/Lake Street or on the east side of 98th Avenue NE.

b) Non-water oriented commercial and recreational uses where there is an intervening development between the shoreline and the subject property are exempt from the requirements of subsection (3) and (5) above.

b. Buildings located along the shoreline shall not incorporate materials which are reflective or mirrored.

3. Mitigation Sequencing –

a. The applicant shall utilize the following mitigation sequencing guidelines, which appear in order of preference, during the design of all development proposals to ensure that the development proposal achieves no net loss of ecological functions to the greatest extent feasible:

1) Avoiding the impact altogether by not taking a certain action or parts of an action;

2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts;

3) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

4) Reducing or eliminating the impact over time by preservation and maintenance operations;

5) Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and

6) Monitoring the impact and the compensation projects and taking appropriate corrective measures.

b. The Planning Official may request a written analysis demonstrating how the project complies with the mitigation sequencing provisions listed above.

83.420 Parking

1. General -

a. Only parking associated with a permitted or conditional shoreline use shall be allowed, except that within the UM Shoreline Environment, surface or structured parking facilities may accommodate parking for surrounding uses and for-pay parking is allowed.

b. Parking as a primary use on a subject property is prohibited.

2. Number of Parking Spaces -

a. All uses must provide sufficient off-street parking spaces. The required number of parking stalls established in KZC Chapter 105, KZC 50.60 and in the applicable use zone charts shall be met.

3. Parking Location -

a. Intent – To reduce the negative impacts of parking and circulation facilities on visible public spaces within the shoreline, such as shoreline public pedestrian walkways, public use areas, and view corridors along public rights-of-way.

b. Standards - The applicant shall locate parking areas on the subject property according to the following requirements:

1) Parking is prohibited in the shoreline setback established in KZC 83.180, except as follows:

a) Subsurface parking is allowed, provided that:

i) The structure is designed to avoid the need for future shoreline stabilization as documented in a geotechnical report, prepared by a qualified geotechnical engineer or engineering geologist.

ii) The structure is designed to comply with shoreline vegetation standards established in KZC 83.370. As part of any proposal to install subsurface parking within the shoreline setback, the applicant shall submit site-specific documentation prepared by a qualified expert to establish that the design will adequately support the long-term viability of the required landscaping.

iii) The structure is designed to minimize impacts to public access and views to Lake Washington from the public right-of-way.

iv) Public access over subsurface parking structures shall be designed to minimize significant changes in grade.

b) The parking is designed as a short-term loading area to support a water-dependent use.

2) Parking is prohibited on structures located over water.

3) Parking, loading, and service areas for a permitted use activity shall not extend closer to the shoreline than a permitted structure unless:

a) The parking is incorporated within a structure, subject to the following standards:

i) The parking is subsurface, or

ii) The design of any above-grade structured parking incorporates landscaping and/or building surface treatment to provide an appearance comparable to the rest of the building not used for parking.

b) The parking is accessory to a Public Park.

c) The parking is designed as a short-term loading area to support a water-dependent use.

4. Design of Parking Areas -

a. General

1) Parking areas shall be designed to contain pedestrian connections to public pedestrian walkways and building entrances. Pedestrian connections shall either be a raised sidewalk, or, minimally, composed of a different material from the parking lot.

2) Pedestrian connections must be at least five feet wide, excluding vehicular overhang.

b. Design of Surface Parking Lots – In addition to the perimeter buffering and internal parking lot landscaping provisions established in KZC Chapter 95, the applicant shall buffer all parking areas and driveways that are visible from required public pedestrian pathways or public use areas with appropriate landscaping screening that is consistent with the landscaping and buffering standards for driving and parking areas contained in KZC Chapter 95.

c. Design of Structured Parking Facilities - Each facade of a garage or a building containing above-grade structured parking that is visible from a required view corridor, or is facing a public pedestrian walkway, public use area, or public park must incorporate landscaping and/or building surface treatment to mitigate the visual impacts of the structured parking.

83.430 Signage

1. Standards – The following standards shall apply to signs within the shoreline jurisdiction:

a. Signage shall not interfere or block designated view corridors within the shoreline jurisdiction.

b. Signage shall not be permitted to be constructed over water, except as follows:

1) For retail establishments providing gas and oil sales for boats, where the facility is accessible from the water, provided that:

a) Internally-illuminated signs are not permitted. Low-wattage external light sources that are not directed towards neighboring properties or Lake Washington are permitted, subject to approval by the Planning Official.

b) One sign, not exceeding 20 square feet per sign face, is permitted. The sign area for the water-oriented sign shall be counted towards the maximum sign are permitted in KZC Chapter 100.

c) The sign shall be affixed to a pier or wall-mounted. The maximum permitted height of a freestanding sign is five feet above the surface of the pier. A wall-mounted sign shall not project above the roofline of the building to which they are attached.

2) Boat traffic signs, directional signs and signs displaying a public service message installed by a governmental agency.

3) Interpretative signs in coordination with public access and recreation amenities.

4) Building addresses mounted flush to the end of a pier, with letters and numbers at least 4 inches high.

c. Signs shall comply with the shoreline setback standards contained in KZC 83.180.

83.440 Lighting

1. General - Exterior lighting shall be controlled using limits on height, light levels of fixtures, lights shields, time restrictions and other mechanisms in order to:

a. Prevent light pollution or other adverse effects that could infringe upon public enjoyment of the shoreline;

b. Protect residential uses from adverse impacts that can be associated with light trespass from higher-intensity uses; and

c. Prevent adverse effects on fish and wildlife species and their habitats.

2. Exceptions –

a. The following development activities are exempt from the submission and lighting standards established in this section:

1) Emergency lighting required for public safety;

2) Lighting for public rights-of-way;

3) Outdoor lighting for temporary or periodic events (e.g. community events at public parks);

4) Seasonal decoration lighting; and

5) Sign lighting, which is governed by KZC 83.430.

b. The following development activities are exempt from the submission standards established in (3) below, but are still subject to the lighting standards contained in (4) below:

1) Development of a detached dwelling unit or associated appurtenances;

2) Piers, docks, floats, boatlifts and canopies;

3) Public Access Pier or Boardwalk; and

4) Moorage buoy.

3. Submission Requirements - All development proposed within the shoreline jurisdiction, except as otherwise indicated in subsection 2) above, shall submit a lighting plan and photometric site plan for approval by the Planning Official. The plan shall contain the following:

   a. A brief written narrative, with accompanying plan or sketch, which demonstrates the objectives of the lighting.

   b. The location, fixture type, mounting height, and wattage of all outdoor lighting and building security lighting, including exterior lighting mounted on piers or illuminating piers.

   c. A detailed description of the fixtures, lamps, supports, reflectors, and other devices. The description shall include manufacturer's catalog specifications and drawings, including sections when requested.

   d. If building elevations are proposed for illumination, drawings shall be provided for all relevant building elevations showing the fixtures, the portions of the elevations to be illuminated, and the illuminance levels of the elevations.

   e. Photometric data, such as that furnished by manufacturers, showing the angle of light emissions.

   f. Computer generated photometric grid showing footcandle readings every 20 feet within the property or site, and 15 feet beyond the property lines, including Lake Washington, if applicable. Iso-footcandle contour line style plans are also acceptable.

4. Standards –

   a. Direction and Shielding –

      1) All exterior building-mounted and ground-mounted light fixtures shall be directed downward and use "fully shielded cut off" fixtures as defined by the Illuminating Engineering Society of North America (IESNA), or other appropriate measure to conceal the light source from adjoining uses and direct the light toward the ground. For detached dwelling unit or associated appurtenances, this requirement shall apply to any light fixtures which are directed towards or face Lake Washington.

      2) Exterior lighting mounted on piers or illuminating piers and water-dependent uses located at the shoreline edge shall be at ground or dock level, and be directed away from adjacent properties and the water.

      3) For properties located within the Natural shoreline environment, exterior lighting installations shall incorporate motion-sensitive lighting and lighting shall be limited to those areas where it is needed for safety, security, and operational purposes.

   b. Lighting Levels –

      1) Exterior lighting installations shall be designed to avoid harsh contrasts in lighting levels.

      2) For properties located adjacent to a Natural shoreline environment, exterior lighting fixtures shall produce a maximum initial luminance value of 0.1 foot-candles (as measured at three feet above grade) at the site or environment boundary.

      3) For properties in the Urban Mixed shoreline environment located adjacent to residential uses in another shoreline environment or for commercial uses located adjacent to residential uses in the Urban Residential environment, exterior lighting fixtures shall produce a maximum initial luminance value of 0.6 horizontal and vertical foot-candles (as measured at three feet above grade) at the site boundary, and drop to 0.1 foot-candles onto the abutting property as measured within 15 feet of the property line.

      4) Exterior lighting shall not exceed a strength of 1 foot-candles at the water surface of Lake Washington, as measured waterward of the ordinary high water mark.

c. Height of Light Fixtures - The maximum mounting height of ground-mounted light fixtures shall be 12 feet. Height of light fixtures shall be measured from the finished floor or the finished grade of the parking surface, to the bottom of the light bulb fixture.

d. Other –

1) Illuminance of a building façade to enhance architectural features is not permitted.

2) Where practical, exterior lighting installations shall include timers, dimmers, sensors, or photocell controllers that turn the lights off during daylight hours or hours when lighting is not needed, to reduce overall energy consumption and eliminate unneeded lighting.

5. Compliance – Exterior lighting in shoreline jurisdiction must be brought into compliance with the requirements of this section in any of the following situations:

a. Replacement – The shielding requirements of subsection (4)(a)(1) of this section shall be complied with when any nonconforming light fixture is replaced or moved.

b. Full Compliance – All other requirements of subsection (4) of this section shall be complied with when there is an increase in gross floor area of more than 50 percent to any structure on the subject property.

83.450 Water Quality, Stormwater, and Nonpoint Pollution

1. General - Shoreline development and use shall incorporate all known, available, and reasonable methods of prevention, control, and treatment to protect and maintain surface and/or ground water quantity and quality in accordance with KMC 15.52 and other applicable laws.

2. Submittal Requirements - All proposals for development activity or land surface modification located within the shoreline jurisdiction shall submit for approval a storm water plan with their application and/or request, unless exempted by the Public Works Official. The storm water plan shall include the following:

a. Provisions for temporary erosion control measure; and

b. Provisions for storm water detention, water quality treatment and storm water conveyance facilities, in accordance with the City's adopted surface water design manual in effect at the time of permit application.

3. Standards -

a. Shoreline development shall comply with the standards established in the City's adopted surface water design manual in effect at the time of permit application.

b. Shoreline uses and activities should utilize Best Management Practices (BMPs) to minimize any increase in surface runoff and to control, treat and release surface water runoff so that receiving properties, wetlands or streams, and Lake Washington are not adversely affected, consistent with the City's adopted surface water design manual. All types of BMPs require regular maintenance to continue to function as intended.

1) Low Impact Development techniques shall be considered and implemented to the greatest extent practicable, consistent with the City's adopted surface water design manual.

2)

c. New outfalls or discharge pipes to Lake Washington shall be avoided, where possible. If a new outfall or discharge pipe is demonstrated to be necessary, it shall be designed so that the outfall and energy dissipation pad is installed above the ordinary high water mark.

d. In addition to providing storm water quality treatment facilities as required in this section and the City's Surface Water Master Plan, the developer and/or property owner shall provide source control BMPs such as structures and/or a manual of practices designed to treat or prevent storm water pollution arising from specific activities expected to occur on the site. Examples of such specific activities include, but are not limited to, carwashing at multifamily residential sites and oil storage at marinas providing service and repair.

e. No release of oils, hydraulic fluids, fuels, paints, solvents or other hazardous materials shall be permitted into Lake Washington. If water quality problems occur, including equipment leaks or spills, work operations shall cease immediately and the City of Kirkland's Public Works Storm/Surface Water Division and other agencies with jurisdiction shall be contacted immediately to coordinate spill containment and cleanup plans. It shall be the responsibility of property owner to fund and implement the approved spill containment and cleanup plans and to complete the work by the deadline established in the plans.

f. All materials that come into contact with water shall be constructed of untreated wood, cured concrete, steel or other approved non-toxic materials. Materials used for over-water decking or other structural components that may come into contact with water shall comply with regulations of responsible agencies (i.e. Washington State Department of Fish and Wildlife or Department of Ecology) to avoid discharge of pollutants.

g. The application of pesticides, herbicides, or fertilizers shall comply with the following standards:

1) The application of pesticides, herbicides or fertilizers within shoreline setbacks shall utilize Best Management Practices (BMPs) outlined in the BMPs for Landscaping and Lawn/Vegetation Management Section of the 2005 Stormwater Management Manual for Western Washington, to prevent contamination of surface and ground water and/or soils, and adverse effects on shoreline ecological functions and values.

2) Pesticides, herbicides, or fertilizers shall be applied in a manner that minimizes their transmittal to adjacent water bodies. The direct runoff of chemical-laden waters into adjacent water bodies is prohibited. Spray application of pesticides shall not occur within 100 feet of open waters including wetlands, ponds, and streams, sloughs and any drainage ditch or channel that leads to open water except when approved by the City.

3) The use of pesticides, herbicides or fertilizers within the shoreline jurisdiction, including applications of herbicides to control noxious aquatic vegetation, shall comply with regulations of responsible agencies, including the Washington State Department of Agriculture, Department of Ecology, Department of Fish and Wildlife or the Federal Environmental Protection Agency.

4) A copy of the applicant's National Pollutant Discharge Elimination System (NPDES) permit, issued from Washington State Department of Ecology, authorizing aquatic pesticide (including herbicides) to Lake Washington must be submitted to the Kirkland Planning Department prior to the application.

Critical Areas – General Standards

4. The provisions of this Chapter do not extend the shoreline jurisdiction beyond the limits specified in this SMP. For regulations addressing critical area buffers that are outside of the shoreline jurisdiction, see KZC Chapter 85 and 90.

5. <u>Avoiding impacts to critical areas.</u>

a. An applicant for a land surface modification or development activity within a critical area or its associated buffer shall utilize the following mitigation sequencing guidelines, which appear in order of preference, during design of the proposed project:

1) Avoiding the impact or hazard by not taking a certain action, or redesigning the proposal to eliminate the impact. The applicant shall consider reasonable, affirmative steps and make best efforts to avoid critical area impacts. If impacts cannot be avoided through redesign, or because of site conditions or project requirements, the applicant shall then proceed with the sequence of steps in subsection (2)(a)(2) through (7) of this section.

2) Minimizing the impact or hazard by limiting the degree or magnitude of the action or impact with appropriate technology or by changing the timing of the action.

3) Restoring the impacted critical areas by repairing, rehabilitating or restoring the affected critical area or its buffer.

4) Minimizing or eliminating the hazard by restoring or stabilizing the hazard area through plantings, engineering or other methods.

5) Reducing or eliminating the impact or hazard over time by preservation or maintenance operations during the life of the development proposal, activity or alteration.

6) Compensating for the adverse impact by enhancing critical areas and their buffers or creating substitute critical areas and their buffers as required in the KZC.

7) Monitoring the impact, hazard or success of required mitigation and taking remedial action based upon findings over time.

In the required critical areas study, the applicant shall include a discussion of how the proposed project utilized mitigation sequencing to avoid, minimize, and mitigate impacts to critical areas and associated buffers. The applicant should seek to avoid, minimize and mitigate overall impacts based on the functions and values of all of the relevant critical areas.

b. In addition to the above steps, the specific development standards, permitted alteration requirements, and mitigation requirements of this chapter and elsewhere in the KZC apply.

c. In determining the extent to which the proposal should be further redesigned to avoid and minimize the impact, the City may consider the purpose, effectiveness, engineering feasibility, commercial availability of technology, best management practices, safety and cost of the proposal and identified modifications to the proposal. The City may also consider the extent to which the avoidance of one type or location of a critical area could require or lead to impacts to other types or locations of nearby or adjacent critical areas. The City shall document the decision-making process used under this section as a part of the critical areas review conducted pursuant to KZC XXX.

6. Trees in Critical Areas or Critical Area Buffers

a. General - The intent of preserving vegetation in and near streams and wetlands and in geologically hazardous areas is to support the functions of healthy sensitive areas and sensitive area buffers and/or avoid disturbance of geologically hazardous areas.

b. Submittal Requirements – When proposing to trim or remove any tree located within critical areas or critical area buffers, the property owner must submit a report to the City containing the following:

1) A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of structures, driveways, access ways and easements.

2) An arborist report explaining how the tree(s) fit the criteria for a nuisance or hazard tree. This requirement may be waived by the Planning Official if it is determined that the nuisance or hazard condition is obvious.

3) A proposal detailing how the trees will be made into a snag or wildlife tree, including access and equipment, snag height, and placement of woody debris.

4) For required replacement trees, a planting plan showing location, size and species of the new trees.

c. Tree Removal Standards

1) If a tree is considered a nuisance or hazard in a critical area or its buffer, the priority action is to create a “snag” or wildlife tree with the subject tree. If creation of a snag is not feasible, then the felled tree shall be left in place unless the Planning Official permits its removal in writing.

a) Hazard Tree Criteria. A hazard tree must meet the following criteria:

i) The tree must have a combination of structural defects and/or disease which makes it subject to a high probability of failure and is in proximity to moderate-high frequency of persons or property; and

ii) The hazard condition of the tree cannot be lessened with reasonable and proper arboricultural practices nor can the target be removed.

b) Nuisance Tree Criteria. A nuisance tree must meet the following criteria:

i) Tree is causing obvious, physical damage to private or public structures, including but not limited to: sidewalk, curb, road, driveway, parking lot, building foundation, roof;

ii) Tree has been damaged by past maintenance practices, that cannot be corrected with proper arboricultural practices; or

iii) The problems associated with the tree must be such that they cannot be corrected by any other reasonable practice. Including but not limited to the following:

1. Pruning of the crown or roots of the tree and/or small modifications to the site including but not limited to a driveway, parking lot, patio or sidewalk to alleviate the problem.

2. Pruning, bracing, or cabling to reconstruct a healthy crown.

2) The removal of any tree will require the planting of a native tree of a minimum of six feet in height in close proximity to where the removed tree was located. Selection of native species and timing of installation shall be coordinated with the Planning Official.

7. Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers.

a. Plants intended to mitigate for the loss of natural resource values are subject to the following requirements.

1) Plant Source. Plant materials must be native and selected from the Kirkland Plant List. 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.

2) Installation. Plant materials must be supported only when necessary due to extreme winds at the planting site. 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. All fertilizer applications to turf or trees and shrubs shall follow Washington State University, National Arborist Association or other accepted agronomic or horticultural standards.

3) Fertilizer Applications. Fertilizers shall be applied in such a manner as to prevent its entry into waterways and wetlands and minimize its entry into storm drains. No applications shall be made within 50 feet of a waterway or wetland, or a required buffer, whichever is greater, unless specifically authorized in an approved mitigation plan or otherwise authorized in writing by the Planning Official.

83.470 Wetlands

1. Applicability – The following provisions shall apply to wetlands and wetland buffers located within the shoreline jurisdiction, in replace of provisions contained in Chapter 90 KZC. Provisions contained in Chapter 90 KZC that are not addressed in this section continue to apply, with the exception of the following subsections, which shall not apply within the shoreline jurisdiction:

   a. KZC 90.20 – General Exceptions

   b. KZC 90.30 – Definitions

   c. KZC 90.75 – Minor Lakes

   d. KZC 90.140 – Reasonable Use Exception

   e. KZC 90.160 – Appeals

   f. KZC 90.170 – Planning/Public Works Official Decisions – Lapse of Approval

2. Wetland Determinations, Delineations, Regulations, Criteria, and Procedures - All determinations and delineations of wetlands shall be made using the criteria and procedures contained in the Washington State Wetlands Identification and Delineation Manual (Washington Department of Ecology, 1997). All determinations, delineations, and regulations of wetlands shall be based on the entire extent of the wetland, irrespective of property lines, ownership patterns, or other factors.

3. Wetland Determinations - Either prior to or during review of a development application, the Planning Official shall determine whether a wetland or its buffer is present on the subject property using the following provisions:

   a. During or immediately following a site inspection, the Planning Official shall make an initial assessment as to whether any portion of the subject property or surrounding area (which shall be the 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 surrounding area, no additional wetland studies will be required. However, if the initial site inspection or information subsequently obtained indicates the presence of a wetland on the subject property or surrounding area, then the applicant shall follow the procedure in subsection (2) of this section.

   b. If the initial site inspection or information subsequently obtained indicates that a wetland may exist on or near the subject property or surrounding area, the applicant shall either (a) fund a study and report prepared by the City's wetland consultant; or (b) submit a report prepared by a qualified professional approved by the City, and fund a review of this report by the City's wetland consultant.

   c. If a wetlands study and report are required, at a minimum the report shall include the following:

      1) A summary of the methodology used to conduct the study;

      2) A professional survey which is based on the KCAS or plat-bearing system and tied to a known monument, depicting the wetland boundary on a map of the surrounding area which shows the wetland and its buffer;

      3) A description of the wetland habitat(s) found throughout the entire wetland (not just on the subject property) using the U.S. Fish & Wildlife Service classification system (Classification of Wetlands and Deepwater Habitats in the U.S., Cowardin et al., 1979);

      4) A description of nesting, denning, and breeding areas found in the wetland or its surrounding area;

      5) A description of the surrounding area, including any drainage systems entering and leaving the wetland, and a list of observed or documented plant and wildlife species;

6) A description of historical, hydrologic, vegetative, topographic, and soil modifications, if any;

7) A proposed classification of the wetland as Category I, II, III, or IV wetland; and

8) A completed rating form using the *Washington State Wetland Rating System for Western Washington – Revised* (Washington State Department of Ecology Publication # 04-06-025, or latest version). [Note: When a wetland buffer outside of shoreline jurisdiction is proposed to be modified, the wetland in shoreline jurisdiction must be rated using the methodology required by KZC 90.40 to determine the appropriate buffer width. Ecology's rating system and the corresponding buffers only apply to those wetlands and buffers which are located in shoreline jurisdiction.]

d. Formal determination of whether a wetland exists on the subject property, as well as its boundaries and rating, shall be made by the Planning Official after preparation and review of the report, if applicable, by the City's wetland consultant. The Planning Official's decision under this section shall be used for review of any development activity proposed on the subject property for which an application is received within two (2) years of the decision; provided, that the Planning Official may modify any decision whenever physical circumstances have markedly and demonstrably changed on the subject property or the surrounding area as a result of natural processes or human activity.

4. Wetland Buffers and Setbacks

a. No land surface modification shall occur and no improvement may be located in a wetland or its buffer, except as provided in KZC 83.470.4 through 83.470.10. See also KZC 83.460, Trees in Critical Areas or Critical Area Buffers; and KZC 83.460, Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers. Required, or standard, buffers for wetlands are as follows, and are measured from the outer edge of the wetland boundary:

Wetland Buffers

WETLAND CATEGORY AND CHARACTERISTICS	BUFFER
Category I	
Natural Heritage Wetlands	215 feet
Bog	215 feet
Habitat score[1] from 29 to 36 points	225 feet
Habitat score from 20 to 28 points	150 feet
Other Category I wetlands	125 feet
Category II	
Habitat score from 29 to 36 points	200 feet
Habitat score from 20 to 28 points	125 feet
Other Category II wetlands	100 feet
Category III	
Habitat score from 20 to 28 points	125 feet
Other Category III wetlands	75 feet
Category IV	50 feet

[1] Habitat score is one of three elements of the rating form.

Note: Buffer widths were developed by King County for its urban growth areas using the best available science information presented in *Chapter 9: Wetlands* of *Best Available Science – Volume 1: A Review of Scientific Literature* http://www.metrokc.gov/ddes/cao/PDFs04ExecProp/BAS-Chap9-04.pdf.

Where a legally established, improved road right-of-way or structure divides a wetland buffer, the Planning Official may approve a modification of the required buffer in that portion of the buffer isolated from the wetland by the road or structure, provided the isolated portion of the buffer:

1) Does not provide additional protection of the wetland from the proposed development; and

2) Provides insignificant biological, geological or hydrological buffer functions relating to the portion of the buffer adjacent to the wetland.

b. Buffer Setback – Structures shall be set back at least 10 feet from the designated or modified wetland buffer. The City may allow within this setback minor improvements which would clearly have no adverse effect during their construction, installation, use, or maintenance, on fish, wildlife, or their habitat or any vegetation in the buffer or adjacent wetland.

c. Storm Water Outfalls – Necessary surface discharges of storm water through wetland buffers and buffer setbacks may be allowed on the surface, but piped system discharges are prohibited unless approved pursuant to this section. Storm water outfalls (piped systems) may be located within the buffer setback specified in subsection (b) of this section and within the buffers specified in subsection (a) of this section only when the City determines, based on a report prepared by a qualified professional under contract to the City and paid for by the applicant, that surface discharge of storm water through the buffer would clearly pose a threat to slope stability, and if the storm water outfall will not:

1) Adversely affect water quality;

2) Adversely affect fish, wildlife, or their habitat;

3) Adversely affect drainage or storm water detention capabilities;

4) Lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

5) Be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas.

Storm water facilities shall minimize potential impacts to the wetland or wetland buffer by meeting the following design standards:

6) Catch basins must be installed as far as feasible from the buffer boundary.

7) Outfalls must be designed to reduce the chance of adverse impacts as a result of concentrated discharges from pipe systems. This may include:

a) Installation of the discharge end as far as feasible from the sensitive area; and

b) Use of appropriate energy dissipation at the discharge end.

d. Water Quality Facilities – Detention and water quality treatment devices, and other similar facilities as determined by the City, shall not be located within the wetland buffers or buffer setbacks of this section except as provided below. Water quality facilities, as determined by the City, may be located within the wetland buffers of subsection 85.450.4 of this section. The City may only approve a proposal to install a water quality facility within the outer one-half (1/2) of a wetland buffer if a suitable location outside of the buffer is not available and only if:

1) It will not adversely affect water quality;

2) It will not adversely affect fish, wildlife, or their habitat;

3) It will not adversely affect drainage or storm water detention capabilities;

4) It will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

5) It will not be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas;

6) The existing buffer is already degraded as determined by a qualified professional;

7) Its installation would be followed immediately by enhancement of an area equal in size and immediately adjacent to the affected portion of the buffer; and

8) Once installed, it would not require any further disturbance or intrusion into the buffer.

The City may only approve a proposal by a public agency to install a water quality facility elsewhere in a wetland buffer if criteria 9 – 12 (below) are met in addition to 1 – 8 (above):

9) The project includes enhancement of the entire buffer;

10) The project would provide an exceptional ecological benefit off-site;

11) The water quality facility, once installed, would not require any further disturbance or intrusion into the buffer; and

12) There is no practicable or feasible alternative proposal that results in less impact to the buffer.

b. Utilities and Rights-of-Way – Provided that activities will not increase the impervious area or reduce flood storage capacity, the following work may only be allowed in critical areas and their buffers subject to City review after appropriate mitigation sequencing per KZC 83.460.2 has been considered and implemented:

1) All utility work in improved City rights-of-way;

2) All normal and routine maintenance, operation and reconstruction of existing roads, streets, and associated rights-of-way and structures; and

3) Construction of sewer or water lines that connect to existing lines in a sensitive area or buffer where no feasible alternative location exists based on an analysis of technology and system efficiency.

4) All affected critical areas and buffers will be expeditiously restored to their pre-project condition or better. For purposes of this subsection only, “improved City rights-of-way” include those rights-of-way that have improvements only underground, as well as those with surface improvements.

f. Minor Improvements – Minor improvements may be located within the sensitive area buffers specified in subsection (a) of this section. These minor improvements shall be located within the outer one-half of the sensitive area buffer, except where approved stream crossings are made. The City may only approve a proposal to construct a minor improvement within an environmentally sensitive area buffer if:

1) It will not adversely affect water quality;

2) It will not adversely affect fish, wildlife, or their habitat;

3) It will not adversely affect drainage or storm water detention capabilities;

4) It will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

5) It will not be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas; and

6) It supports public or private shoreline access.

The City may require the applicant to submit a report prepared by a qualified professional which describes how the proposal will or will not comply with the criteria for approving a minor improvement.

5. Wetland Buffer Fence or Barrier - Prior to beginning development activities, the applicant shall install a six (6) foot high construction-phase chain link fence or equivalent fence, as approved by the Planning Official and consistent with City standards, along the upland boundary of the entire wetland buffer with silt screen fabric. The construction-phase fence shall remain upright in the approved location for the duration of development activities.

   Upon project completion, the applicant shall install between the upland boundary of all wetland buffers and the developed portion of the site, either (1) a permanent three (3)- to four (4)-foot-tall split rail fence; or (2) equivalent barrier, as approved by the Planning Official. Installation of the permanent fence or equivalent barrier must be done by hand where necessary to prevent machinery from entering the wetland or its buffer.

6. Permit Process -

   a. The City shall consolidate and integrate the review and processing of the critical areas aspects of the proposal with the shoreline permit required for the proposed development activity, except as noted in subsection b.

   b. All Wetland Modification or Wetland Buffer Modification affecting > 25% of the standard buffer require a Shoreline Variance pursuant to Process IIA, described in Chapter 141, except as follows:

      1) Development activity or land surface modification approved under subsection 4 above (Wetland Buffers and Setbacks) or subsection 10 (Wetland Restoration) below, and

      2) Applicants for a detached dwelling who are unable to comply with the specific standards of this section may seek approval pursuant to the following standards and procedures:

         i. When allowed - A reasonable use exception may be granted if the strict application of this section would preclude all reasonable use of a site. The reasonable use process within the shoreline management area applies to lots that are significantly constrained by critical area and critical area buffers, but still contain a minimum of 20 percent of the land area of the subject property outside of wetlands, either in wetland buffer or as upland area.

         ii. Submittal Requirements – As part of the reasonable use request, in addition to submitting an application, the applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's qualified professional. The report shall include the following:

            a) A determination and delineation of the sensitive area and sensitive area buffer containing all the information specified in KZC 83.470(3) for a wetland or based on the definitions contained in this chapter for a stream;

            b) An analysis of whether any other reasonable use with less impact on the sensitive area and sensitive 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 sensitive area and sensitive area buffer;

            d) A description of the area of the site which is within the sensitive area or within the setbacks or buffers required by this chapter;

            e) A description of protective measures that will be undertaken such as siltation curtains, hay bales 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 sensitive area and the sensitive area buffer;

g) How the proposal minimizes to the greatest extent possible net loss of sensitive area and/or sensitive area buffer functions;

h) Whether the improvement is located away from the sensitive area and the sensitive area buffer to the greatest extent possible;

i) Information specified in KZC 83.470(8); and

j) Such other information or studies as the Planning Official may reasonably require.

iii. Decisional Criteria – The City shall grant approvals for reasonable use exceptions only if all of the following criteria are met:

a) That no permitted type of land use for the property with less impact on the sensitive area and associated buffer is feasible and reasonable, which in the Natural Environment shall be one single-family dwelling;

b) That there is no feasible on-site alternative to the proposed activities, 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 sensitive 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 or other land alteration, including but not limited to grading, utility installation, decks, driveways, paving, and landscaping, shall not exceed 3,000 square feet. The amount of allowable disturbance shall be that which will have the least practicable impact on the sensitive area and the sensitive area buffer given the characteristics and context of the subject property, sensitive area, and buffer;

d) The applicant shall pay for a qualified professional to help with the City's determination of the appropriate limit for disturbance;

e) 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 site constraints;

f) The proposal maximizes the amount of existing tree canopy that is retained;

g) 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 sensitive area functions and values;

h) The proposed development does not pose an unacceptable threat to the public health, safety, or welfare on or off the property;

i) The proposal meets the mitigation, maintenance, and monitoring requirements of this chapter;

j) The inability to derive reasonable use is not the result of actions by the applicant after the effective date of the ordinance codified in this chapter or its predecessor; and

k) 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.

iv. Modifications and Conditions – The City may approve reduction in required yards or buffer setbacks and may allow the maximum height of structures to be increased up to five feet to reduce the impact on the sensitive area and sensitive area buffer. The required front yard may be reduced by up to 50 percent where the applicant demonstrates that the development cannot meet the City's code requirements without encroaching into the sensitive area buffer. 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 exception.

7. Modification of Wetlands –

a. No land surface modification shall occur and no improvement shall be located in a wetland, except as provided in this subsection. Furthermore, all modifications of a wetland shall be consistent with *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998) and the *Kirkland Sensitive Areas Regulatory Recommendations Report* (Adolfson Associates, Inc., 1998).

b. Submittal Requirements - The applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's qualified professional. The report shall include the following:

1) A determination and delineation of the sensitive area and sensitive area buffer containing all the information specified in KZC 83.470(3) for a wetland or based on the definitions contained in this chapter for a stream;

2) An analysis of the mitigation sequencing as outlined in KZC 83.460.2;

3) Sensitive site design and construction staging of the proposal so that the development will have the least practicable impact on the sensitive area and sensitive area buffer;

4) A description of the area of the site which is within the sensitive area or within the setbacks or buffers required by this chapter;

5) A description of protective measures that will be undertaken such as siltation curtains, hay bales and other siltation prevention measures, and scheduling the construction activity to avoid interference with wildlife and fisheries rearing, nesting or spawning activities;

6) An analysis of the impact that the amount of development proposed would have on the sensitive area and the sensitive area buffer;

7) How the proposal minimizes to the greatest extent possible net loss of sensitive area and/or sensitive area buffer functions;

8) Whether the improvement is located away from the sensitive area and the sensitive area buffer to the greatest extent possible;

9) An assessment of the habitat, water quality, storm water detention, ground water recharge, shoreline protection, and erosion protection functions of the wetland and its buffer. The report shall also assess the effects of the proposed modification on those functions.

10) Information specified in KZC 83.470(8);

11) An evaluation of the project's consistency with the shoreline variance criteria contained in WAC 173-27-170; and

12) Such other information or studies as the Planning Official may reasonably require.

c. Decisional Criteria - The City may only approve an improvement or land surface modification in a wetland if:

1) The project demonstrates consideration and implementation of appropriate mitigation sequencing as outlined in KZC 83.460.2;
2) It will not adversely affect water quality;
3) It will not adversely affect fish, wildlife, or their habitat;
4) It will not have an adverse effect on drainage and/or storm water detention capabilities;
5) It will not lead to unstable earth conditions or create an erosion hazard or contribute to scouring actions;
6) It will not be materially detrimental to any other property or the City as a whole;
7) Compensatory mitigation is provided in accordance with the table in subsection 8 ;
8) Fill material does not contain organic or inorganic material that would be detrimental to water quality or fish and wildlife habitat;
9) All exposed areas are stabilized with vegetation normally associated with native wetlands and/or buffers, as appropriate; and
10) There is no practicable or feasible alternative development proposal that results in less impact to the wetland and its buffer.

8. Compensatory Mitigation – A modification may only be approved after the applicant has demonstrated consideration and implementation of appropriate mitigation sequencing as outlined in KZC 83.460.2. All approved impacts to regulated wetlands require compensatory mitigation so that the goal of no net loss of wetland function, value, and acreage is achieved. A mitigation proposal must utilize the mitigation ratios specified below as excerpted from: Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. March 2006. *Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance (Version 1)*. Washington State Department of Ecology Publication #06-06-011a. Olympia, WA.

Compensatory Mitigation

Category and Type of Wetland Impacts	Re-establishment or Creation	Rehabilitation Only[32]	Re-establishment or Creation (R/C) and Rehabilitation (RH)[1]	Re-establishment or Creation (R/C) and Enhancement (E)[1]	Enhancement Only[1]
All Category IV	1.5:1	3:1	1:1 R/C and 1:1RH	1:1 R/C and 2:1 E	6:1

[32] These ratios are based on the assumption that the rehabilitation or enhancement actions implemented represent the average degree of improvement possible for the site. Proposals to implement more effective rehabilitation or enhancement actions may result in a lower ratio, while less effective actions may result in a higher ratio. The distinction between rehabilitation and enhancement is not clear-cut. Instead, rehabilitation and enhancement actions span a continuum. Proposals that fall within the gray area between rehabilitation and enhancement will result in a ratio that lies between the ratios for rehabilitation and the ratios for enhancement

Category and Type of Wetland Impacts	Re-establishment or Creation	Rehabilitation Only[32]	Re-establishment or Creation (R/C) and Rehabilitation (RH)[1]	Re-establishment or Creation (R/C) and Enhancement (E)[1]	Enhancement Only[1]
All Category III	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1
Category II	3:1	6:1	1:1 R/C and 4:1 RH	1:1 R/C and 8:1 E	12:1
Category I Forested	6:1	12:1	1:1 R/C and 10:1 RH	1:1 R/C and 20:1 E	24:1
Category I - based on score for functions	4:1	8:1	1:1 R/C and 6:1 RH	1:1 R/C and 12:1 E	16:1
Category I Natural Heritage site	Not allowed	6:1 Rehabilitation of a Natural Heritage site	Not allowed	Not allowed	Case-by-case
Category I Bog	Not allowed	6:1 Rehabilitation of a bog	Not allowed	Not allowed	Case-by-case

On-site mitigation is presumed to be preferable to off-site mitigation. The City may approve a plan to implement all or a portion of the required mitigation off-site, if the off-site mitigation is within the same drainage basin as the property that will be impacted by the project. The applicant shall demonstrate that the off-site mitigation will result in higher wetland functions, values, and/or acreage than on-site mitigation. Required compensatory mitigation ratios shall be the same for on-site or off-site mitigation, or a combination of both.

If the proposed on-site or off-site mitigation plan will result in the creation or expansion of a wetland or its buffer on any property other than the subject property, the plan shall not be approved until the applicant submits to the City a copy of a statement signed by the owners of all affected properties, in a form approved by the City Attorney and recorded in the King County Department of Elections and Records, consenting to the wetland and/or buffer creation or increase on such property and to the required maintenance and monitoring that may follow the creation or expansion of a wetland or its buffer.

Applicants proposing to alter wetlands or their buffers shall submit a mitigation plan prepared by a qualified professional. The mitigation plan shall consist of a description of the existing functions and values of the wetlands and buffers affected by the proposed project, the nature and extent of impacts to those areas, and the mitigation measures to offset those impacts. The mitigation plan shall also contain a drawing that illustrates the compensatory mitigation elements. The plan and/or drawing shall list plant materials and other habitat features to be installed.

To ensure success of the mitigation plan, the applicant shall submit a monitoring and maintenance program prepared by a qualified professional. At a minimum, the monitoring and maintenance plan shall include the following:

1) The goals and objectives for the mitigation plan;
2) Success criteria by which the mitigation will be assessed;
3) Plans for a five (5) year monitoring and maintenance program;
4) A contingency plan in case of failure; and
5) Proof of a written contract with a qualified professional who will perform the monitoring program.

The monitoring program shall consist of at least two site visits per year by a qualified professional, with annual progress reports submitted to the City and all other agencies with jurisdiction.

The cost of producing and implementing the mitigation plan, the monitoring and maintenance program, reports, and drawing, as well as the review of each component by the City's wetland consultant, shall be borne by the applicant.

9. Wetland Buffer Modification

a. Departures from the standard buffer requirements shall be approved only after the applicant has demonstrated consideration and implementation of appropriate mitigation sequencing as outlined in KZC 83.460.2.

b. Approved departures from the standard buffer requirements of KZC 83.470.4(a) allow applicants to modify the physical and biological conditions of portions of the standard buffer for the duration of the approved project. These approved departures from the standard buffer requirements do not permanently establish a new regulatory buffer edge. Future development activities on the subject property may be required to reestablish the physical and biological conditions of the standard buffer.

c. Modification of Wetland Buffers when Wetland Is Also To Be Modified – Wetland buffer impact is assumed to occur when wetland fill or modification is proposed. Any proposal for wetland fill/modification shall include provisions for establishing a new wetland buffer to be located around the compensatory mitigation sites and to be equal in width to its standard buffer specified in KZC 83.470.4(a) or a buffer reduced in accordance with this section by no more than twenty-five percent (25%) of the standard buffer width in all cases, regardless of wetland category or basin type.

d. Modification of Wetland Buffers when Wetland Is Not To Be Modified – No land surface modification may occur and no improvement may be located in a wetland buffer, except as provided for in this subsection. Buffer widths may be decreased if an applicant receives a modification request approval.

1) Types of Buffer Modifications – Buffers may be reduced through one of two means, either (a) buffer averaging, or (b) buffer reduction with enhancement. A combination of these two buffer reduction approaches shall not be used:

a) Buffer averaging requires that the area of the buffer resulting from the buffer averaging is equal in size and quality to the buffer area calculated by the standards specified in KZC 83.470.4(a). Buffers may not be reduced at any point by more than twenty-five percent (25%) of the standards specified in KZC 83.470.(a). Buffer averaging calculations shall only consider the subject property.

b) Buffers may be decreased through buffer enhancement. The applicant shall demonstrate that through enhancing the buffer (by removing invasive plants, planting native vegetation, installing habitat features such as downed logs or snags, or other means), the reduced buffer will function at a higher level than the existing standard

buffer. The reduced on-site buffer area must be planted and maintained as needed to yield over time a reduced buffer that is equivalent to undisturbed Puget Lowland forests in density and species composition. At a minimum, a buffer enhancement plan shall provide the following: (a) a map locating the specific area of enhancement; (b) a planting plan that uses native species, including groundcover, shrubs, and trees; and (c) a monitoring and maintenance program prepared by a qualified professional consistent with the standards specified in KZC 83.470.5(d). Buffers may not be reduced at any point by more than twenty-five (25) percent of the standards in KZC 83.470.3(a). Buffer reductions of more than twenty-five (25) percent approved through a Shoreline Variance will be assumed to have direct wetland impacts that must be compensated for as described above under KZC 83.470.8.

2) Decisional Criteria – An improvement or land surface modification may only be approved in a wetland buffer only if:

a) The development activity or buffer modification demonstrates consideration and implementation of appropriate mitigation sequencing as outlined in KZC 83.460.2.

b) It is consistent with *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998) and the *Kirkland Sensitive Areas Regulatory Recommendations Report* (Adolfson Associates, Inc., 1998);

c) It will not adversely affect water quality;

d) It will not adversely affect fish, wildlife, or their habitat;

e) It will not have an adverse effect on drainage and/or storm water detention capabilities;

f) It will not lead to unstable earth conditions or create an erosion hazard;

g) It will not be materially detrimental to any other property or the City as a whole;

h) Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;

i) All exposed areas are stabilized with vegetation normally associated with native wetland buffers, as appropriate; and

j) There is no practicable or feasible alternative development proposal that results in less impact to the buffer.

As part of the modification request, the applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's wetland consultant. The report shall assess the habitat, water quality, storm water detention, ground water recharge, shoreline protection, and erosion protection functions of the buffer; assess the effects of the proposed modification on those functions; and address the ten (10) criteria listed in this subsection (d)(2) of this section.

10. Wetland Restoration - City approval is required prior to wetland restoration. The City may permit or require the applicant or property owner to restore and maintain a wetland and/or its buffer by removing material detrimental to the area, such as debris, sediment, or vegetation. The City may also permit or require the applicant to restore a wetland or its buffer through the addition of native plants and other habitat features. See also KZC 83.460, Trees in Critical Areas or Critical Area Buffers; and KZC 83.460, Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers. Restoration may be required whenever a condition detrimental to water quality or habitat exists. When wetland restoration is required by the City, the requirements of KZC 83.470.8, Compensatory Mitigation, shall apply.

11. Wetland Access - The City may develop access through a wetland and its buffer in conjunction with a public park, provided the purpose supports education or passive

recreation, and is designed to minimize environmental impacts during construction and operation.

83.480 Streams

1. Applicability – The following provisions shall apply to streams and stream buffers located within the shoreline jurisdiction, in replace of provisions contained in Chapter 90 KZC. Provisions contained in Chapter 90 KZC that are not addressed in this Section continue to apply, with the exception of the following subsections, which shall not apply within the shoreline jurisdiction:

   a. KZC 90.20 – General Exceptions

   b. KZC 90.30 – Definitions

   c. KZC 90.75 – Minor Lakes

   d. KZC 90.140 – Reasonable Use Exception

   e. KZC 90.160 – Appeals

   f. KZC 90.170 – Planning/Public Works Official Decisions – Lapse of Approval

2. Activities in or Near Streams - No land surface modification may occur and no improvements may be located in a stream or its buffer except as provided in KZC 83.480.3 through 83.480.11.

3. Stream Determinations - The Planning Official shall determine whether a stream or stream buffer is present on the subject property using the following provisions. During or immediately following a site inspection, the Planning Official shall make an initial assessment as to whether a stream exists on any portion of the subject property or surrounding area (which shall be the area within approximately 100 feet of the subject property).

   If the initial site inspection indicates the presence of a stream, the Planning Official shall determine, based on the definitions contained in this chapter and after a review of all information available to the City, the classification of the stream.

   If this initial site inspection does not indicate the presence of a stream on or near the subject property, no additional stream study will be required.

   If an applicant disagrees with the Planning Official's determination that a stream exists on or near the subject property or the Planning Official's classification of a stream, the applicant shall submit a report prepared by a qualified professional approved by the Planning Official that independently evaluates the presence of a stream or the classification of the stream, based on the definitions contained in this chapter.

   The Planning Official shall make final determinations regarding the existence of a stream and the proper classification of that stream. The Planning Official's decision under this section shall be used for review of any development activity proposed on the subject property for which an application is received within two years of the decision; provided, that the Planning Official may modify any decision whenever physical circumstances have markedly and demonstrably changed on the subject property or the surrounding area as a result of natural processes or human activity.

4. Stream Buffers and Setbacks

   a. Stream Buffers – No land surface modification shall occur and no improvement may be located in a stream or its buffer, except as provided in this section. See also KZC 83.460(1), Trees in Critical Areas or Critical Area Buffers; and KZC 83.460(2), Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers. Required, or standard, buffers for streams are as follows:

   Stream Buffers

Stream Class	Primary Basins	Secondary Basins
A	75 feet	N/A

B	60 feet	50 feet
C	35 feet	25 feet

Stream buffers shall be measured from each side of the ordinary high water mark of the stream except that where streams enter or exit pipes, the buffer shall be measured in all directions from the pipe opening. Essential improvements to accommodate required vehicular, pedestrian, or utility access to the subject property may be located within those portions of stream buffers which are measured toward culverts from culvert openings.

Where a legally established, improved road right-of-way or structure divides a stream buffer, the Planning Official may approve a modification of the required buffer in that portion of the buffer isolated from the stream by the road or structure, provided the isolated portion of the buffer:

1) Does not provide additional protection of the wetland from the proposed development; and

2) Provides insignificant biological, geological or hydrological buffer functions relating to the portion of the buffer adjacent to the wetland.

b. Buffer Setback – Structures shall be set back at least 10 feet from the designated or modified stream buffer. The City may allow within this setback minor improvements which would have no potential adverse effect during their construction, installation, use, or maintenance to fish, wildlife, or their habitat or to any vegetation in the buffer or adjacent stream.

c. Storm Water Outfalls – Necessary discharge of storm water through stream buffers and buffer setbacks may be allowed on the surface, but a piped system discharge is prohibited unless approved pursuant to this section. Storm water outfalls (piped systems) may be located within the buffer setback specified in subsection (b) of this section and within the buffers specified in subsection (a) of this section only when the Public Works and Planning Officials both determine, based on a report prepared by a qualified professional under contract to the City and paid for by the applicant, that surface discharge of storm water through the buffer would clearly pose a threat to slope stability; and if the storm water outfall will not:

1) Adversely affect water quality;

2) Adversely affect fish, wildlife, or their habitat;

3) Adversely affect drainage or storm water detention capabilities;

4) Lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

5) Be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas.

Storm water facilities shall minimize potential impacts to the wetland or wetland buffer by meeting the following design standards:

6) Catch basins must be installed as far as feasible from the buffer boundary.

7) Outfalls must be designed to reduce the chance of adverse impacts as a result of concentrated discharges from pipe systems. This may include:

   a) Installation of the discharge end as far as feasible from the sensitive area, and

   b) Use of appropriate energy dissipation at the discharge end.

d. Water Quality Facilities – Detention and water quality treatment devices, and other similar facilities as determined by the City, shall not be located within the stream buffers or buffer setbacks of this section except as provided below. The City may only approve a proposal to

install a water quality facility within the outer one-half (1/2) of a stream buffer if a suitable location outside of the buffer is not available and only if:

1) It will not adversely affect water quality;

2) It will not adversely affect fish, wildlife, or their habitat;

3) It will not adversely affect drainage or storm water detention capabilities;

4) It will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

5) It will not be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas;

6) The existing buffer is already degraded as determined by a qualified professional;

7) Its installation of the water quality facility would be followed immediately by enhancement of an area equal in size and immediately adjacent to the affected portion of the buffer; and

8) Once installed, it would not require any further disturbance or intrusion into the buffer.

The City may only approve a proposal by a public agency to install a water quality facility elsewhere in a stream buffer if Criteria 9 – 12 (below) are met in addition to 1 – 8 (above):

9) The project includes enhancement of the entire on-site buffer;

10) The project would provide an exceptional ecological benefit off-site;

11) The water quality facility, once installed, would not require any further disturbance or intrusion into the buffer; and

12) There is no practicable or feasible alternative proposal that results in less impact to the buffer.

e. Utilities and Rights-of-Way – Provided that activities will not increase the impervious area or reduce flood storage capacity, the following work shall be allowed in critical areas and their buffers subject to City review after appropriate mitigation sequencing per KZC 83.460.2 has been considered and implemented:

1) All utility work in improved City rights-of-way;

2) All normal and routine maintenance, operation and reconstruction of existing roads, streets, and associated rights-of-way and structures; and

3) Construction of sewer or water lines that connect to existing lines in a sensitive area or buffer where no feasible alternative location exists based on an analysis of technology and system efficiency.

All affected critical areas and buffers will be expeditiously restored to their pre-project condition or better. For purposes of this subsection only, “improved City rights-of-way” include those rights-of-way that have improvements only underground, as well as those with surface improvements.

f. Minor Improvements – Minor improvements may be located within the sensitive area buffers specified in subsection 83.460.4. These minor improvements shall be located within the outer one-half of the sensitive area buffer, except where approved stream crossings are made. The City may only approve a proposal to construct a minor improvement within a sensitive area buffer if:

1) It will not adversely affect water quality;

2) It will not adversely affect fish, wildlife, or their habitat;

3) It will not adversely affect drainage or storm water detention capabilities;

4) It will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

5) It will not be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas; and

6) It supports public or private shoreline access.

The City may require the applicant to submit a report prepared by a qualified professional which describes how the proposal will or will not comply with the criteria for approving a minor improvement.

5. Stream Buffer Fence or Barrier - Prior to beginning development activities, the applicant shall install a six-foot-high construction-phase chain link fence or equivalent fence, as approved by the Planning Official and consistent with City standards, along the upland boundary of the entire stream buffer with silt screen fabric. The construction-phase fence shall remain upright in the approved location for the duration of development activities.

   Upon project completion, the applicant shall install between the upland boundary of all stream buffers and the developed portion of the site, either (1) a permanent three- to four-foot-tall split rail fence; or (2) equivalent barrier, as approved by the Planning Official. Installation of the permanent fence or equivalent barrier must be done by hand where necessary to prevent machinery from entering the stream or its buffer.

6. Permit Process -

   a. The City shall consolidate and integrate the review and processing of the critical areas aspects of the proposal with the shoreline permit required for the proposed development activity, except as noted under subsection b.

   b. All Stream Relocation or Modification or Stream Buffer Modification affecting > one-third (1/3) of the standard buffer require a Shoreline Variance pursuant to Process IIA, described in Chapter 141, except as follows:

      Development activity or land surface modification approved under subsection 4 above (Stream Buffer and Setback) or subsection 10 (Stream Crossings) and 11 (Stream Rehabilitation) below.

      i. Applicants for a detached dwelling who are unable to comply with the specific standards of this section may seek approval pursuant to the following standards and procedures:

         1. When allowed **-** A reasonable use exception may be granted if the strict application of this section would preclude all reasonable use of a site. The reasonable use process within the shoreline management area applies to lots that are significantly constrained by critical area and critical area buffers.

         2. Submittal Requirements – As part of the reasonable use request, in addition to submitting an application, the applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's qualified professional. The report shall include the following:

            a) A determination and delineation of the sensitive area and sensitive area buffer containing all the information specified in KZC 83.480(3) for a wetland or based on the definitions contained in this chapter for a stream;

            b) An analysis of whether any other reasonable use with less impact on the sensitive area and sensitive 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 sensitive area and sensitive area buffer;

d) A description of the area of the site which is within the sensitive area or within the setbacks or buffers required by this chapter;

e) A description of protective measures that will be undertaken such as siltation curtains, hay bales 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 sensitive area and the sensitive area buffer;

g) How the proposal minimizes to the greatest extent possible net loss of sensitive area and/or sensitive area buffer functions;

h) Whether the improvement is located away from the sensitive area and the sensitive area buffer to the greatest extent possible;

i) Information specified in KZC 83.470(8); and

j) Such other information or studies as the Planning Official may reasonably require.

3. Decisional Criteria – The City shall grant approvals for reasonable use exceptions only if all of the following criteria are met:

a) That no permitted type of land use for the property with less impact on the sensitive area and associated buffer is feasible and reasonable, which in the Natural Environment shall be one single-family dwelling;

b) That there is no feasible on-site alternative to the proposed activities, 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 sensitive 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 or other land alteration, including but not limited to grading, utility installation, decks, driveways, paving, and landscaping, shall not exceed 3,000 square feet. The amount of allowable disturbance shall be that which will have the least practicable impact on the sensitive area and the sensitive area buffer given the characteristics and context of the subject property, sensitive area, and buffer;

d) The applicant shall pay for a qualified professional to help with the City's determination of the appropriate limit for disturbance;

e) 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 site constraints;

f) 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 sensitive area functions and values;

g) The proposed development does not pose an unacceptable threat to the public health, safety, or welfare on or off the property;

h) The proposal meets the mitigation, maintenance, and monitoring requirements of this chapter;

i) The inability to derive reasonable use is not the result of actions by the applicant after the effective date of the ordinance codified in this chapter or its predecessor; 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.

1) Modifications and Conditions – The City may approve reduction in required yards or buffer setbacks and may allow the maximum height of structures to be increased up to five feet to reduce the impact on the sensitive area and sensitive area buffer. The required front yard may be reduced by up to 50 percent where the applicant demonstrates that the development cannot meet the City's code requirements without encroaching into the sensitive area buffer. 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 exception.

7. Stream Buffer Modification

a. Approved departures from the standard buffer requirements of KZC 83.480.4(a) allow applicants to modify the physical and biological conditions of portions of the standard buffer for the duration of the approved project. These approved departures from the standard buffer requirements do not permanently establish a new regulatory buffer edge. Future development activity on the subject property may be required to reestablish the physical and biological conditions of the standard buffer.

b. Types of Buffer Modification – Buffers may be reduced through one of two means, either (1) buffer averaging; or (2) buffer reduction with enhancement. A combination of these two buffer reduction approaches shall not be used.

1) Buffer averaging requires that the area of the buffer resulting from the buffer averaging be equal in size and quality to the buffer area calculated by the standards specified in KZC 83.480.4(a). Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.480.4(a). Buffer averaging calculations shall only consider the subject property.

2) Buffers may be decreased through buffer enhancement. The applicant shall demonstrate that through enhancing the buffer (by removing invasive plants, planting native vegetation, installing habitat features such as downed logs or snags, or other means) the reduced buffer will function at a higher level than the standard existing buffer. The reduced on-site buffer area must be planted and maintained as needed to yield over time a reduced buffer that is equivalent to an undisturbed Puget Lowland forests in density and species composition. A buffer enhancement plan shall at a minimum provide the following: (1) a map locating the specific area of enhancement; (2) a planting plan that uses native species, including groundcover, shrubs, and trees; and (3) a monitoring and maintenance program prepared by a qualified professional consistent with the standards specified in KZC 83.470.8. Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.480.4(a).

a. Decisional Criteria – An improvement or land surface modification may only be approved in a stream buffer only if:

1) The project demonstrates consideration and implementation of appropriate mitigation sequencing as outlined in KZC 83.460.2.

2) It is consistent with *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998) and the *Kirkland Sensitive Areas Regulatory Recommendations Report* (Adolfson Associates, Inc., 1998);

3) It will not adversely affect water quality;

4) It will not adversely affect fish, wildlife, or their habitat;

5) It will not have an adverse effect on drainage and/or storm water detention capabilities;

6) It will not lead to unstable earth conditions or create an erosion hazard or contribute to scouring actions;

7) It will not be materially detrimental to any other property or the City as a whole;

8) Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;

9) All exposed areas are stabilized with vegetation normally associated with native stream buffers, as appropriate; and

10) There is no practicable or feasible alternative development proposal that results in less impact to the buffer.

As part of the modification request, the applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's wetland consultant. The report shall assess the habitat, water quality, storm water detention, ground water recharge, and erosion protection functions of the buffer; assess the effects of the proposed modification on those functions; and address the ten criteria listed in this subsection.

8. Stream Relocation or Modification - The City may only permit a stream to be relocated or modified if water quality, conveyance, fish and wildlife habitat, wetland recharge (if hydrologically connected to a wetland), and storm water detention capabilities of the stream will be significantly improved by the relocation or modification. Convenience to the applicant in order to facilitate general site design may not be considered.

A proposal to relocate or modify a Class A stream may only be approved only if the Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project. Furthermore, all modifications shall be consistent with *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998) and the *Kirkland Sensitive Areas Regulatory Recommendations Report* (Adolfson Associates, Inc., 1998).

If the proposed stream activity will result in the creation or expansion of a stream or its buffer on any property other than the subject property, the City shall not approve the plan until the applicant submits to the City a copy of a statement signed by the owners of all affected properties, in a form approved by the City Attorney and recorded in the King County Department of Elections and Records, consenting to the sensitive area and/or buffer creation or increase on such property.

Prior to the City's approval of a stream relocation or modification, the applicant shall submit a stream relocation/modification plan prepared by a qualified professional approved by the City. The cost of producing, implementing, and monitoring the stream relocation/modification plan, and the cost of review of that plan by the City's stream consultant shall be borne by the applicant. This plan shall contain or demonstrate the following:

a. A topographic survey showing existing and proposed topography and improvements;

b. The filling and revegetation of the existing stream channel;

c. A proposed phasing plan specifying time of year for all project phases;

d. The ability of the new stream channel to accommodate flow and velocity of 100-year storm events; and

e. The design and implementation features and techniques listed below, unless clearly and demonstrably inappropriate for the proposed relocation or modification:

1) The creation of natural meander patterns;

2) The formation of gentle and stable side slopes, no steeper than two feet horizontal to one-foot vertical, and the installation of both temporary and permanent erosion-control features (the use of native vegetation on stream banks shall be emphasized);

3) The creation of a narrow sub-channel (thalweg) against the south or west stream bank;

4) The utilization of native materials;

5) The installation of vegetation normally associated with streams, emphasizing native plants with high food and cover value for fish and wildlife;

6) The creation of spawning areas, as appropriate;

7) The re-establishment of fish population, as appropriate;

8) The restoration of water flow characteristics compatible with fish habitat areas;

9) Demonstration that the flow and velocity of the stream after relocation or 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;

10) A written description of how the proposed relocation or modification of the stream will significantly improve water quality, conveyance, fish and wildlife habitat, wetland recharge (if hydrologically connected to a wetland), and storm water detention capabilities of the stream; and

11) A monitoring and maintenance plan consistent with KZC 83.470.8.

Prior to diverting water into a new stream channel, a qualified 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. The cost for this inspection and report shall be borne by the applicant.

9. Bulkheads in Streams - Bulkheads are not permitted along a stream, except as provided in this subsection. The City shall allow a bulkhead to be constructed only if:

a. It is not located within a wetland or between a wetland and a stream;

b. It is needed to prevent significant erosion;

c. The use of vegetation and/or other biological materials would not sufficiently stabilize the stream bank to prevent significant erosion;

d. The applicant submits a plan prepared by a qualified professional approved by the City that shows a bulkhead and implementation techniques that meet the following criteria:

1) There will be no adverse impact to water quality;

2) There will be no adverse impact to fish, wildlife, and their habitat;

3) There will be no increase in the velocity of stream flow, unless approved by the City to improve fish habitat;

4) There will be no decrease in flood storage volumes;

5) Neither the installation, existence, nor operation of the bulkhead will lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

6) Neither the installation, existence, nor operation of the bulkhead will be detrimental to any other property or the City as a whole; and

e. The Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project.

The bulkhead shall be designed consistent with Washington Department of Fish and Wildlife's *Integrated Streambank Protection Guidelines* (2003, or as revised). The bulkhead shall be designed and constructed to minimize the transmittal of water current and energy to other properties. Changes in the horizontal or vertical configuration of the land shall be kept to a minimum. Fill material used in construction of a bulkhead shall be non-dissolving and non-decomposing. The applicant shall also stabilize all exposed soils by planting native riparian vegetation with high food and cover value for fish and wildlife.

10. Stream Crossings - Stream crossings are not permitted, except as specified in this section. The City shall review and decide upon an application to cross a stream with an access drive, driveway, or street. A stream crossing shall be allowed only if:

a. The stream crossing is necessary to provide required vehicular, pedestrian, or utility access to the subject property. Convenience to the applicant in order to facilitate general site design shall not be considered;

b. The Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project; and

c. The applicant submits a plan prepared by a qualified professional approved by the City that shows the crossing and implementation techniques that meet the following criteria:

1) There will be no adverse impact to water quality;

2) There will be no adverse impact to fish, wildlife, and their habitat;

3) There will be no increase in the velocity of stream flow, unless approved by the City to improve fish habitat;

4) There will be no decrease in flood storage volumes;

5) Neither the installation, existence, nor operation of the stream crossing will lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

6) Neither the installation, existence, nor operation of the stream crossing will be detrimental to any other property or to the City as a whole.

The stream crossing shall be designed and constructed to allow passage of fish inhabiting the stream or which may inhabit the stream in the future. The stream crossing shall be designed to accommodate a 100-year storm event. The applicant shall at all times maintain the crossing so that debris and sediment do not interfere with free passage of water, wood and fish. The City shall require a security or perpetual culvert maintenance agreement under KZC 90.145 for continued maintenance of the stream crossing.

A bridge is the preferred stream crossing method. If a bridge is not economically or technologically feasible, or would result in greater environmental impacts than a culvert, a proposal for a culvert may be approved if the culvert complies with the above criteria and the following additional criteria:

7) The culvert must be designed consistent with Washington Department of Fish and Wildlife's *Design of Road Culverts for Fish Passage* (2003, or as revised).

If a proposed project requires approval through a Shoreline Conditional Use, the City may require that any stream in a culvert on the subject property be opened, relocated, and restored, consistent with the provisions of this subsection.

11. Stream Rehabilitation - City approval is required prior to stream rehabilitation. The City may permit or require the applicant or property owner to restore and maintain a stream and/or its buffer by removing material detrimental to the stream and its surrounding area such as debris, sediment, or vegetation. The City may also permit or require the applicant to restore a stream or its buffer through the addition of native plants and other habitat features. See also KZC 83.460,

Trees in Critical Areas or Critical Area Buffers; and KZC 83.460, Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers. Restoration may be required at any time that a condition detrimental to water quality or habitat exists. When stream rehabilitation is required by the City, the mitigation plan and monitoring requirements of KZC 83.470.8, shall apply.

83.490 Geologically hazardous areas.

1. The City of Kirkland Geologically Hazardous Area Regulations, as codified in Chapter 85 KZC (dated XX, Ordinance # XX), are herein incorporated into this master program.
2. In addition to the required information contained in KZC 85.15.3, the geotechnical report shall also contain any additional information specified under the definition of Geotechnical Report contained in KZC Section 83.80.

83.500 Flood Hazard Reduction.

1. The City of Kirkland Flood Damage Regulations, as codified in Chapter 21.56 KMC (dated XX, Ordinance # XX), are herein incorporated into this master program.

83.510 Archaeological and Historic Resources

1. General - Uses, developments and activities on sites of historic or archeological significance or sites containing things of historic or archeological significance must not unreasonably disrupt or destroy the historic or archeological resource.
2. Standards -
   a. Permits submitted for land surface modification or development activity in areas documented by the Washington State Office of Archaeology and Historic Preservation to contain archaeological resources shall include a site inspection and a draft written report prepared by a qualified professional archaeologist, approved by the City, prior to the issuance of a permit. In addition, the archaeologist will provide copies of the draft report to the affected tribe(s) and the State Office of Archaeology and Historic Preservation. After consultation with these agencies, the archaeologist shall provide a final report that includes any recommendations from the affected tribe(s) and the State Office of Archaeology and Historic Preservation on avoidance or mitigation of the proposed project's impacts. The Planning Official will condition project approval, based on the final report from the archaeologist, to ensure that impacts to the site are avoided or minimized consistent with federal and state law.
   b. Shoreline permits shall contain provisions that require developers to immediately stop work and notify the City if any potential archaeological resources are uncovered during land surface modification or development activity. In such cases, the developer shall be required to provide for a site inspection and evaluation by a qualified professional archaeologist, approved by the City, to ensure that all possible valuable archaeological data is properly handled. The City shall subsequently notify the affected tribe and the State Office of Archaeology and Historic Preservation. Failure to comply with this requirement shall be considered a violation of the shoreline permit.
   c. If identified historical or archaeological resources are present, site planning and access to such areas shall be designed and managed to give maximum protection to the resource and surrounding environment.
   d. Interpretative signs, historical markers and other similar exhibits providing information about historical and archaeological features and natural areas shall be provided when appropriate.
   e. In the event that unforeseen factors constituting an emergency as defined in RCW 90.58.030 that necessitate rapid action to retrieve or preserve artifacts or data identified above, the project may be exempted from the permit requirement of these regulations. The City shall notify the State Department of Ecology, the State Attorney General's Office and the State Historic Preservation Office of such a waiver in a timely manner.

f. Archaeological sites are subject to RCW 2744 (Indian Graves and Records) and RCW 2753 (Archaeological Sites and Records) and shall comply with WAC 25-48 or its successor as well as the provisions of this chapter.

g. Proposed changes to historical properties which are registered on the State or National Historic Register are subject to review under the National and State Registers' review process.

83.520 Nonconformances

1. General - This section establishes when and under what circumstances nonconforming aspects of a use or development must be brought into conformance with this Chapter. You need to consult the provisions of this section if there is some aspect of the use or development on the subject property that is not permitted under this Chapter.

2. When Conformance is Required - If an aspect, element or activity of or on the subject property conformed to the applicable shoreline regulations in effect at the time the aspect, element or activity was constructed or initiated, that aspect, element or activity may continue and need not be brought into conformance with this Chapter unless a provision of this section requires conformance. Further, nonconforming structures may be maintained, remodeled, repaired and continued; provided that nonconforming development may not be enlarged, intensified, increased or altered in any way which increases its nonconformity, except as specifically permitted under this section.

3. Abatement of Nonconformance That Was Illegal When Initiated - Any nonconformance that was illegal when initiated must immediately be brought into conformance with this chapter. The City may, using the provisions of WAC 173-27, to abate any nonconformance that was illegal when initiated.

4. Special Provision for Damaged Improvements - Non-conforming structures that are damaged or destroyed by fire, explosion, flood, or other casualty may be restored or replaced in kind, if there is no feasible alternative that allows for compliance with the provisions of this Program; provided that, the following are met:

   a. The permit process is commenced within twelve (12) months of the date of such damage; and

   b. The reconstruction does not expand, enlarge, or otherwise increase the non-conformity, except as provided for in this section; and.

   c. The reconstruction locates the structure in the least environmentally damaging location relative to the shoreline and any critical areas; and

   d. For existing residential structures built over the water, appropriate measures are taken to mitigate adverse impacts to the maximum extent feasible while still retaining the existing residential density, including but not limited to:

      1) Reducing the overwater footprint;

      2) Reducing the number or size of pilings to the extent allowed by site-specific engineering or design considerations;

      3) Softening existing hard shoreline stabilization measures to the extent allowed by site-specific characteristics;

      4) Raising the height of the structure off the water, provided that the height of the existing building is not increased; and

      5) Incorporating grating into the re-built structure where feasible.

5. Certain Nonconformances Specifically Regulated –

a. General –

1) The provisions of this section specify when and under what circumstances certain nonconformances must be corrected. If a nonconformance must be corrected under this section, the applicant must submit all information necessary for the City to review the correction as part of the application for any development permit. In addition, the City will not permit occupancy until the correction is made.

2) If subsection 4 of this section applies to a specific nonconformance, then the provisions of this section do not apply to that same nonconformance.

b. Non-conforming structure –

1) A nonconforming structure which is moved any distance must be brought into conformance.

2) Any structural alteration of a roof or exterior wall which does not comply with height, shoreline setback, or view corridor standards will require that the nonconforming height, setback or view corridor be brought into conformance, except as provided otherwise in this Chapter. Excepted from this section is the repair or maintenance of structural members.

3) Increases in structure footprint outside of the shoreline setback or wetland or stream buffer shall be allowed, even if all or a portion of the previously approved footprint is within the shoreline setback.

4) Non-conforming structures that are expanded or enlarged within the shoreline setback must obtain a variance; provided that, a non-conforming detached dwelling unit may be expanded without a variance where the following provisions apply:

a) The non conforming structure must have been constructed prior to December, 2006;

~~a)~~b) The structure must be located landward of the ordinary high water mark.

~~b)~~c) The enlargement or expansion in the shoreline setback shall not exceed 10 percent of the gross floor area of the existing dwelling unit prior to the expansion.

~~c)~~d) The enlargement, expansion or addition shall not extend further waterward than the existing primary residential structure. For purposes of this section, the improvements allowed within the shoreline setback as established in Section 83.180, will not be used in determining the most waterward location of the building. ~~, not including appurtenances permitted under Section 83.180, such as bay windows or eaves.~~ Encroachments that extend waterward of the existing structure footprint require a shoreline variance (see Figure XX).

~~d)~~e) The applicant must restore a portion of the shoreline setback area to offset the impact, such that the shoreline setback area will function at a higher level than the existing conditions. The restoration plan shall be prepared by a qualified professional and shall be reviewed by the Planning Official and City's consulting biologist, who may approve, approve with conditions, or deny the request. The cost of producing and implementing the plan, as well as the review of the proposal by the City's consulting biologist, shall be borne by the applicant. Examples include, but are not limited to:

i) Installation of additional native vegetation within the shoreline setback that would otherwise not be required under this Chapter. At minimum, the area of shoreline setback restoration and/or enhancement shall be equivalent to the area impacted by the improvement.

ii) Removal of an existing hard shoreline stabilization structure covering at least 15 linear feet of the lake frontage which is located at, below, or within 5 feet landward of the lake's OHWM and subsequent restoration of the shoreline to a

natural or semi-natural state, including creation or enhancement of nearshore shallow-water habitat.

iii) Setting back hard shoreline stabilization structures or portions of hard shoreline stabilization structures from the ordinary high water mark and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography and beach/substrate composition.

~~iv)Placing fill material for purposes of habitat enhancement (creation or restoration of nearshore shallow-water habitat) waterward of the ordinary high water mark.~~

~~v)~~iv) Other shoreline restoration projects that are demonstrated to result in an improvement to existing shoreline ecological functions and processes.

~~vi)~~v) The applicant must comply with the best management practices contained in KZC Section 83.430.3.h addressing the use of fertilizer, herbicides and pesticides as needed to protect lake water quality.

~~e)~~f) The applicant shall use of "fully shielded cut off" light fixtures as defined by the Illuminating Engineering Society of North America (IESNA), or other appropriate measure to conceal the light source from adjoining uses and direct the light toward the ground for any exterior light sources located on the west façade of the residence or other façades with exterior light sources that is directed towards the lake.

~~f)~~g) The remodel or expansion will not cause adverse impacts to shoreline ecological functions and/or processes.

~~g)~~ This allowance shall only be used once within a five-year period.

5) A nonconforming detached dwelling unit that is located on a lot that has less than 3,000 square feet of building area lying landward of the shoreline setback and upland of required wetland or stream buffers (see Figure XX), may be rebuilt or otherwise replaced within the shoreline setback and required wetland or stream buffer without a shoreline variance, provided the following standards are met:

a) The structure must be located landward of the ordinary high water mark.

b) The major exterior dimensions of the portion of the structure that is nonconforming shall not exceed the major exterior dimensions of the previous structure.

c) The reconstruction does not expand, enlarge, or otherwise increase the non-conformity.

d) The reconstruction locates the structure in the least environmentally damaging location relative to the shoreline and any critical areas.

e) The structure must comply with any requirements of the shoreline master program, zoning, building, or fire codes in effect when the structure is built.

6) A primary structure that does not conform to the required shoreline setback and is located on a lot that has less than 3,000 square feet of building area lying landward of the shoreline setback, not including the area located within the required side yard setbacks and up to 10 feet of a required front yard (see Figure XX), may be rebuilt or otherwise replaced in its current location within the shoreline setback, provided the following standards are met:

a) The structure must be located landward of the ordinary high water mark.

b) The major exterior dimensions of the portion of the structure that does not comply with the shoreline setback shall not exceed the major exterior dimensions of the previous structure.

c) The reconstruction does not expand, enlarge, or otherwise increase the non-conformity.

d) The structure must comply with any requirements of the shoreline master program, zoning, building, or fire codes in effect when the structure is built.

c. Nonconforming Use –

1) A nonconforming use may be continued by successive owners or tenants.

2) Any nonconforming use except for a detached dwelling unit must be brought into conformance or discontinued if:

a) The applicant is making a structural alteration or increasing the gross floor area of any structure that houses or supports the nonconforming use; or

b) The nonconforming use has ceased for 90 or more consecutive days. It shall not be necessary to show that the owner of the property intends to abandon such nonconforming use in order for the nonconforming rights to expire; or

c) The nonconforming use is replaced by another use; the City may allow a change from one nonconforming use to another such use if, through a Shoreline Conditional Use process, the City determines that the proposed new use will comply with the following standards:

i) No reasonable alternative conforming use is practical because of the configuration of the structure and/or the property;

ii) The proposed use will be at least as consistent with the policies and provisions of the Act and this Program and as compatible with the uses in the area as the preexisting use;

iii) The use or activity is not enlarged, intensified, increased or altered in a manner than increases the extent of the non-conformity;

iv) The structure(s) associated with the non-conforming use shall not be expanded in a manner that increases the extent of the non-conformity including encroachment into areas, such as setbacks, and any wetlands, streams and/or associated buffers established by this Chapter, where new structures, development or use would not be allowed;

v) The change in use will not create adverse impacts to shoreline ecological functions and/or processes; and

vi) Uses which are specifically prohibited or which would thwart the intent of the Act or this Program shall not be authorized.

d. Non-conforming wetland or stream buffer –

1) Structural modification of, addition to, or replacement of an existing legally constructed structure that does not further alter or increase the impact to the wetland, stream or associated buffer and there is no increased risk to life or property as a result of the proposed modification or replacement, provided that restoration of structures substantially damaged by fire, flood, or act of nature must be initiated within one (1) year of the date of such damage, as evidenced by the issuance of a valid building permit, and diligently pursued to completion;

2) If existing structures or other improvements are located within the wetland, stream, or associated buffers, these improvements must be brought into conformance if the applicant is making an alteration to any structure(s) or other improvements in shoreline jurisdiction, the cost of which exceeds 50 percent of the replacement cost of the structure(s).

e. Non-conforming lot size - An undeveloped lot, tract, parcel, site or division which was ~~was~~ created or segregated pursuant to all applicable laws, ordinances and regulations in effect at the time, but which is nonconforming as to the present lot size or density standards may be

developed so long as such development conforms to other requirements of the applicable master program and the act.

f. Nonconforming Waterfront Access Trails -

1) Nonconforming waterfront access trails which were legally created shall not be required to comply with the dimensional standards or setback standards of this Chapter.

~~2)~~The waterfront access trail requirements established in this Chapter must be brought into conformance as much as is feasible, based on available land area if the applicant completes an alteration to any structure(s) in shoreline jurisdiction, the cost of which exceeds 50 percent of the replacement cost of the structure(s)~~; or~~

~~3)~~2)~~Any increase in gross floor area.~~.

g. Nonconforming Landscaping. The landscaping requirements of this Chapter must be brought into conformance as much as is feasible, based on available land area, in either of the following situations:

1) An increase of at least 10 percent in gross floor area of any structure located in shoreline jurisdiction; or

2) An alteration to any structure(s) in shoreline jurisdiction, the cost of which exceeds 50 percent of the replacement cost of the structure(s).

h. Prior approval of Shoreline Variance - A structure for which a variance has been issued shall be considered a legal nonconforming structure and the requirements of this section shall apply as they apply to preexisting nonconformities.

i. Prior approval of Shoreline Conditional Use - A use which is listed as a conditional use but which existed prior to adoption of the master program or any relevant amendment and for which a conditional use permit has not been obtained shall be considered a nonconforming use. A use which is listed as a conditional use but which existed prior to the applicability of the master program to the site and for which a conditional use permit has not been obtained shall be considered a nonconforming use.

j. Any Other Nonconformance

1) If any nonconformance exists on the subject property, other than as specifically listed in the prior subsections of this section, these must be brought into conformance if:

a) The applicant is making any alteration or change or doing any other work in a consecutive 12-month period to an improvement that is nonconforming or houses, supports or is supported by the nonconformance, and the cost of the alteration, change or other work exceeds 50 percent of the replacement cost of that improvement; or

b) The use on the subject property is changed and this code establishes more stringent or different standards or requirements for the nonconforming aspect of the new use than this code establishes for the former use.

Photograph of boat lift canopy with translucent cover

Photographs of site with multiple canopies (note: translucent fabric, as shown above, would need to be used as opposed to opaque fabrics used in these photographs)

LCOG: H:\Templates\WordXP\Normal.dot
Last Saved: Wednesday, May 13, 2009

Chapter 141 – SHORELINE ADMINISTRATION

141.10 User guide.

1. This chapter contains the provisions regarding the city's administration and enforcement of the Shoreline Management Act and the Kirkland shoreline master program (Chapter 83 of the Kirkland Zoning Code), as well as the permit system applicable to the Shoreline Management Act and shoreline master program of the city.

141.20 Administrative responsibilities in general.

1. Except as otherwise specifically established in this chapter or Chapter 83 of the Kirkland Zoning Code, the Department of Planning and Community Development of the city is responsible for the administration of the Shoreline Management Act and the shoreline master program of the city.

141.30 Permit Required.

1. Within the shoreline jurisdiction, as described in KZC 83.90, development shall be allowed only as authorized in a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit or Shoreline Variance Permit, unless specifically exempted from obtaining such a permit under Section 141.50. Chapter 83 of the Kirkland Zoning Code specifies which permit is required. Enforcement action by the City or Department of Ecology may be taken whenever a person has violated any provision of the Shoreline Management Act or any City of Kirkland Shoreline Master Program provision, or other regulation promulgated under the Shoreline Management Act. Procedures for enforcement action and penalties shall be as specified in WAC 173-27-240 through 173-27-310, which are hereby adopted by this reference.

2. Where a proposed development activity encompasses both shoreline and non-shoreline areas, a shoreline substantial development permit or other required permit must be obtained before any part of the development, even the portion of the development activity that is entirely confined to the upland areas, can proceed.

141.40 Exemption from permit requirements.

1. General - Proposals identified under WAC 173-27-040 are exempt from obtaining a Shoreline Substantial Development; however, a Shoreline Variance or Shoreline Conditional Use may still be required. Applicants shall have the burden to demonstrate that the proposal complies with the requirements for the exemption sought as described under WAC 173-27-040.
2. Authority - The Planning Official shall review the proposed development activity for compliance with the shoreline regulations contained in Chapter 83 KZC.
3. Application –
   a. As part of any request for a determination of exemption, the applicant shall show compliance with the regulations in Chapter 83 KZC by submitting an application on a form provided by the Planning Department. The application shall include all documents and exhibits listed on the application form. Alternatively, the applicant may use the Joint Aquatic Resources Permit Application form and any other application forms deemed appropriate by the Planning Official. Applications may be

deemed complete when required forms and attachments are provided consistent with a Shoreline Exemption Development Application Checklist. The applicant shall identify whether the proposal requires an Army Corps of Engineers Section 10 or Section 404 Approval. If so, a copy of the Letter of Exemption shall be filed with the Department of Ecology.

b. The Planning Official may waive the application for any proposal that does not require an Army Corps of Engineers Section 10 or Section 404 Approval. In these circumstances, the Planning Official shall conduct a review for compliance with the shoreline regulations contained in Chapter 83 of the Zoning Ordinance in conjunction with a related development permit.

4. Approval - The Planning Official may grant, deny, or conditionally approve the shoreline exemption request. The approval or conditional approval will become conditions of approval for any related development permit, and no development permit will be issued unless it is consistent with the shoreline exemption approval or conditional approval.
5. Lapse of Approval – The lapse of approval for the shoreline exemption approval shall be to the same as the expiration date of the development permit and all conditions of the approval shall be included in the conditions of approval granted for that development permit.
6. Revisions to WAC 173-27-040 - With subsequent revisions to WAC 173-27-040, the Planning Director shall determine administratively whether a Letter of Exemption is required and issue said decision as an Administrative Interpretation under KZC Section 83.50.

141.50 Pre-Submittal

1. General – Before applying for a permit or approval under this chapter, the applicant shall attend a pre-submittal meeting with the Planning Official consistent with the provisions of this section.
2. Scheduling – The Planning Department will arrange a time for the pre-submittal meeting as soon as is reasonably practicable after the meeting is requested by the applicant.
3. Purpose – The purpose of the pre-submittal meeting is for the Planning Official to provide information to the applicant regarding what information needs to be submitted for a complete application.
4. Time Limits – The City will not process an application under this chapter unless the applicant attended a pre-submittal meeting under this section, regarding the proposal for which application is made, within the six months immediately prior to the date the application is submitted.

141.60 Applications

1. Who May Apply – Any person may, personally or through an agent, apply for a decision regarding property he/she owns.
2. How To Apply – The applicant shall file the following information with the Planning Department:
   a. A complete application, with supporting affidavits, on forms provided by the Planning Department. Alternatively, the applicant may use the Joint Aquatic Resources Permit Application form;

b. Any information or material that is specified in the provisions of Chapter 83 of the Kirkland Zoning Ordinance; and
c. Any additional information or material that the Planning Official specifies at the pre-submittal meeting.

3. Fee – The applicant shall submit the fee established by ordinance with the application.

141.70 Procedures

1. Substantial development permits.

a. General –
1) Applications for a Shoreline Substantial Development Permit shall follow the procedures for a Process I Permit review pursuant to Chapter 145, except as otherwise provided in this Section.
2) If the proposal that requires a substantial development permit is part of a proposal that requires additional approval through Process IIA or Process IIB under Chapter 150 or Chapter 152, respectively, the entire proposal will be decided upon using that other process.
3) If the proposal that requires a substantial development permit is part of a proposal that requires additional approval through the Design Review Board (DRB) under Chapter 142, the design review proceedings before the DRB shall be conducted in accordance with Chapter 142.
4) ~~In the event a SEPA or DRB Appeal is filed in connection with a Shoreline Substantial Development Permit to be heard under Process I, the matter shall instead be heard under Process IIA with the SEPA or DRB appeal to be heard at the open record hearing before the Hearing Examiner. In this circumstance, the applications for a Shoreline Substantial Development Permit shall follow the procedures for a Process IIA Permit review pursuant to Chapter 150, except as otherwise provided in this Section. In addition, the Planning Official shall distribute notice of the public hearing at least 15 calendar days before the public hearing.~~

b. Notice of Application and Comment Period –
1) In addition to the notice of application content established in Chapter 145, notice of applications for Shoreline Substantial Development Permits must also contain the information required under WAC 173-27-110.
2) The minimum notice of application comment period for Shoreline Substantial Development Permits shall be no fewer than 30 days. However, the minimum comment period for applications for Shoreline Substantial Development Permits for limited utility extensions and bulkheads, as described by WAC 173-27-120, shall be 20 days.

c. Burden of Proof –
1) WAC 173-27-140 establishes general review criteria that must be met.
2) WAC 173-27-150 establishes that a substantial development permit may only be granted when the proposed development is consistent with all of the following:
a) The policies and procedures of the Shoreline Management Act;
b) The provisions of Chapter 173-27 WAC;
c) Chapter 83 of the Kirkland Zoning Code.

d. Decision -

1) At the time of a final decision, the Planning Official shall mail a copy of the decision, staff advisory report, transmittal sheet and Shoreline checklist to the applicant, Department of Ecology, and the Washington State Attorney General's Office, pursuant to RCW 90.58.140 and WAC 173-27-130. The permit shall state that construction pursuant to a permit shall not begin or be authorized until twenty-one days from the date the permit decision was filed as provided in RCW 90.58.140(6); or until all review proceedings are terminated if the proceedings were initiated within twenty-one days from the date of filing as defined in RCW 90.58.140(5) and (6). "Date of Filing" is that date that the Department of Ecology received a copy of the decision.
2) An appeal of a Shoreline Substantial Development Permit shall be to the State Shorelines Hearings Board and shall be filed within 21 days of the receipt of the City's decision by the Department of Ecology as set forth in RCW 90.58.180.

e. Effect of Decision – For Shoreline Substantial Development Permits, no final action or construction shall be taken until 21 days after notice of the final action taken by the City is filed with the Department of Ecology.

f. Complete Compliance Required –
1) General – Except as specified in subsection (2) of this section, the applicant must comply with all aspects, including conditions and restrictions, of an approval granted under this chapter in order to do everything authorized by that approval.
2) Exception – Subsequent Modification – WAC 173-27-100 establishes the procedure and criteria under which the city may approve a revision to a permit issued under the Shoreline Management Act and the shoreline master program.

g. Time Limits – Construction and activities authorized by a Shoreline Substantial Development Activity are subject to the time limitations of WAC 173-27-190.

2. Conditional use permits.

a. General - Applications for a Shoreline Conditional Use Permit shall follow the procedures for a Process IIA Permit review pursuant to Chapter 150, except as otherwise provided in this Section. If the proposal that requires a conditional use permit is part of a proposal that requires additional approval through a Process IIB, the entire proposal will be decided upon using that other process.

b. Notice of Application and Comment Period –
1) In addition to the notice of application content established in Chapter 150, notice of applications for Shoreline Conditional Use Permits must also contain the information required under WAC 173-27-110.
2) The minimum notice of application comment period for Shoreline Conditional Use Permits shall be no fewer than 30 days.

c. Notice of Hearing – The Planning Official shall distribute notice of the public hearing at least 15 calendar days before the public hearing.

d. Burden of Proof –
1) WAC 173-27-140 establishes general review criteria that must be met.
2) WAC 173-27-160 establishes that a conditional use permit may be granted.
3) In addition, the city will not issue a conditional use permit for a use which is not listed as allowable in the shoreline master program unless the applicant can demonstrate that the proposed use has impacts on nearby uses and the

environment essentially the same as the impacts that would result from a use allowed by the shoreline master program in that shoreline environment.

e. Decision -
   1) Approval by Department of Ecology. Once the city has approved a conditional use permit it will be forwarded to the State Department of Ecology for its review and approval/disapproval jurisdiction under WAC 173-27-200.
   2) At the time of a final decision for a Shoreline Conditional Use Permit, the Planning Official shall, pursuant to RCW 90.58.140 and WAC 173-27-130, mail a copy of the decision, staff advisory report, transmittal sheet, and Shoreline Checklist to the applicant, Department of Ecology, and the State of Washington's Office of the Attorney General. The permit shall state that construction pursuant to a permit shall not begin or be authorized until twenty-one days from the date the permit decision was filed as provided in RCW 90.58.140(6); or until all review proceedings are terminated if the proceedings were initiated within twenty-one days from the date of filing as defined in RCW 90.58.140(5) and (6). "Date of Filing" is that date that the Department of Ecology received a copy of the decision.
   3) Appeals of a Shoreline Conditional Use Permit or shall be to the State Shoreline Hearings Board and shall be filed within 21 days of the receipt of the City's decision by the Department of Ecology, as set forth in RCW 90.58.180.

f. Effect of Decision – For Shoreline Conditional Use Permits, no final action or construction shall be taken until all review proceedings initiated within 21 days from the date DOE transmits its decision on the Shoreline Conditional Use Permit.

g. Complete Compliance Required –
   1) General – Except as specified in subsection (2) of this section, the applicant must comply with all aspects, including conditions and restrictions, of an approval granted under this chapter in order to do everything authorized by that approval.
   2) Exception – Subsequent Modification – WAC 173-27-100 establishes the procedure and criteria under which the city may approve a revision to a permit issued under the Shoreline Management Act and the shoreline master program.

h. Time Limits – Construction and activities authorized by a Shoreline Substantial Conditional Use are subject to the time limitations under WAC 173-27-190.

3. Variances.

a. General - Applications for a Shoreline Variance Permit shall follow the procedures for a Process IIA Permit review pursuant to Chapter 150, except as otherwise provided in this Section. If the proposal that requires a conditional use permit is part of a proposal that requires additional approval through a Process IIB, the entire proposal will be decided upon using that other process.

b. Notice of Application and Comment Period –
   1) In addition to the notice of application content established in Chapter 150, notice of applications for Shoreline Conditional Use Permits must also contain the information required under WAC 173-27-110.
   2) The minimum notice of application comment period for Shoreline Conditional Use Permits shall be no fewer than 30 days.

c. Notice of Hearing – The Planning Official shall distribute notice of the public hearing at least 15 calendar days before the public hearing.
d. Burden of Proof –
   1) WAC 173-27-140 establishes general review criteria that must be met.
   2) WAC 173-27-170 establishes that a conditional use permit may be granted.
e. Decision -
   1) Approval by Department of Ecology. Once the city has approved a variance permit it will be forwarded to the State Department of Ecology for its review and approval/disapproval jurisdiction under WAC 173-27-200.
   2) At the time of a final decision for a Shoreline Variance Permit, the Planning Official shall, pursuant to RCW 90.58.140 and WAC 173-27-130, mail a copy of the decision, staff advisory report, transmittal sheet, and Shoreline Checklist to the applicant, Department of Ecology, and the State of Washington's Office of the Attorney General. The permit shall state that construction pursuant to a permit shall not begin or be authorized until twenty-one days from the date the permit decision was filed as provided in RCW 90.58.140(6); or until all review proceedings are terminated if the proceedings were initiated within twenty-one days from the date of filing as defined in RCW 90.58.140(5) and (6). "Date of Filing" is that date that the Department of Ecology received a copy of the decision.
   3) Appeals of a Shoreline Variance Permit shall be to the State Shoreline Hearings Board and shall be filed within 21 days of the receipt of the City's decision by the Department of Ecology, as set forth in RCW 90.58.180.
f. Effect of Decision – For Shoreline Variance Permits, no final action or construction shall be taken until all review proceedings initiated within 21 days from the date DOE transmits its decision on the Shoreline Variance Permit.
g. Complete Compliance Required –
   1) General – Except as specified in subsection (2) of this section, the applicant must comply with all aspects, including conditions and restrictions, of an approval granted under this chapter in order to do everything authorized by that approval.
   2) Exception – Subsequent Modification – WAC 173-27-100 establishes the procedure and criteria under which the city may approve a revision to a permit issued under the Shoreline Management Act and the shoreline master program.
h. Time Limits – Construction and activities authorized by a Shoreline Substantial Conditional Use are subject to the time limitations under WAC 173-27-190.

141.80 Enforcement authority.

1. WAC Chapter 173-27 contains enforcement regulations, including authority for the city to issue regulatory orders to enforce the Shoreline Management Act and the shoreline master program. In addition, the city shall have any and all other powers and authority granted to or devolving upon municipal corporations to enforce ordinances, resolutions, regulations, and other laws within its territorial limits.

141.90 Annexation

The City may adopt shoreline environment pre-designations for shorelines located outside of city limits but within the urban growth area. In the event of annexation of a shoreline not pre-designated in the shoreline master program, the City shall develop or amend shoreline policies and regulations to include the annexed area. Such policies and regulations for annexed areas shall be consistent with RCW 90.58 and WAC 173-26 and shall be submitted to the Department of Ecology for approval.

LCOG: H:\Templates\WordXP\Normal.dot
Last Saved: Wednesday, May 13, 2009

ATTACHMENT 5
HCC 5/20/09

City of Kirkland
Grant No. G0600236

DRAFT

Shoreline Restoration Plan Component of the Shoreline Master Program for the City of Kirkland

Prepared for:

City of Kirkland
Planning and Community Development
123 Fifth Avenue
Kirkland, Washington 98033

Prepared by:

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland WA 98033

City of Kirkland
Planning and Community Development
123 Fifth Avenue
Kirkland, Washington 98033

May 2009

Table of Contents

Section Page

1. Introduction 1

2. Purpose of Restoration Plan 2

3. Shoreline Inventory Summary 4

3.1 Introduction 4
3.2 Shoreline Boundary 4
3.3 Shoreline Inventory 4
3.3.1 Land Use and Physical Conditions 5
3.3.2 Biological Resources and Critical Areas 6

4. Restoration Goals and Objectives 7

4.1 Introduction 7
4.2 Goals and Objectives 8
4.2.1 System-wide Restoration Objectives 8
4.2.2 Lake Washington Restoration Objectives 9

5. List of Existing and Ongoing Projects and Programs 10

5.1 Water Resource Inventory Area (WRIA) 8 Participation 10
5.2 Comprehensive Plan Policies 13
5.3 Natural Resources Management Plan 13
5.4 Critical Areas Regulations 14
5.5 Stormwater Management and Planning 15
5.6 Kirkland's Green Building Program 17
5.7 Comprehensive Park, Open Space and Recreation Plan 2001 17
5.8 Green Kirkland Partnership 18
5.9 Other Parks & Community Services Department Activities 18
5.9.1 Parks & Community Services Department Planning and Management 18
5.9.2 Juanita Bay Park Rangers 19
5.9.3 Eagle Scouts 19
5.10 Public Education 20
5.11 Public Works Programs 20
5.12 Capital Improvement Program (CIP) 20
5.12.1 Surface Water Management Utility 20
5.12.2 Parks 21
5.13 Cascade Land Conservancy 21
5.14 Eastside Audubon 21
5.15 Moss Bay Diving Club 22

6. List of Future Projects and Programs to Achieve Local Restoration Goals 22

6.1 Unfunded WRIA 8 Projects 22
6.2 Recommended Projects - Public 22
6.3 Recommended Projects - Private 26
6.4 Public Education/Outreach 27

7. Proposed Implementation Targets and Monitoring Methods 29

8. Restoration Priorities 32

8.1 Priority 1 – Continue Water Resource Inventory Area (WRIA) 8 Participation 33
8.2 Priority 2 – Public Education and Involvement 33
8.3 Priority 3 – Reduce Shoreline Armoring along Lake Washington, Create or Enhance Natural Shoreline Conditions 34
8.4 Priority 4 – Reduction of In-water and Over-water Structures 35
8.5 Priority 5 – Restore Mouths of Tributary Streams, Reduce Sediment and Pollutant Delivery to Lake Washington 35
8.6 Priority 6 – Improve Riparian Vegetation, Reduce Impervious Coverage 36
8.7 Priority 7 – Reduce Aquatic Non-Native Invasive Weeds**Error! Bookmark not defined.**
8.8 Priority 8 –Improve Water Quality and Reduce Sediment and Pollutant Delivery .. 37
8.9 Priority 9 – Acquisition of Shoreline Property for Preservation, Restoration, or Enhancement Purposes 38
8.10 Priority 10 – City Zoning, Regulatory, and Planning Policies 38

9. Conclusions 39

10. References 40

Appendix A: City of Kirkland Resolution R-4510 Ratifying the WRIA 8 Chinook Salmon Conservation Plan
Appendix B: Blank Restoration Project Ranking Form
Appendix C: Project Ranking Forms
Appendix D: Proposed Outreach and Education Actions
Appendix E: Funding Opportunities

List of Tables

Table 1. WRIA 8 Action Start-List for Lake Washington and Status of Implementation in Kirkland 10

Table 2. List of Recommended Projects - Public. 22

Table 3. Project Ranking Results. 25

Table 4. Implementation Schedule and Funding for Restoration Projects, Programs and Plans. 29

SHORELINE MASTER PROGRAM UPDATE
SHORELINE RESTORATION PLAN

1. INTRODUCTION

Shorelines are a major feature in the City of Kirkland, providing both a valuable setting for land use and recreation and performing important ecological functions. Development along the shoreline is addressed through the City's Shoreline Master Program, the local goals and policies adopted under the guidance and provisions of the Shoreline Management Act (SMA) of 1971. Under the SMA, each city and county with "shorelines of the state" must adopt a Shoreline Master Program (SMP) that is based on state laws and rules but tailored to the specific geographic, economic and environmental needs of the community. The goal of the SMA is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." To implement this goal, the SMA and its implementing guidelines, provide guidance and requirements to local governments addressing how shorelines should be developed, protected, and restored. The SMA has three broad policies:

1) encourage water-dependent uses,
2) protect shoreline natural resources, and
3) promote public access.

The City's SMP was developed in 1974 to help regulate shoreline development in an ecologically sensitive manner with special attention given to public access. These policy objectives are reflected in today's protection of significant natural areas within the City's shoreline area as open space, as well as the extensive shoreline trail system and network of shoreline parks which have been established over time.

Over the time that has spanned since the original adoption of the City's SMP, there have been substantial changes to the lakefront environment. Industrial uses, such as the shipyard previously located at Carillon Point, have left Kirkland's environment. The City has added publicly owned properties to its waterfront park system, most significantly the Yarrow Bay Wetlands, Juanita Bay Park, Juanita Beach Park, and David E. Brink Park. Water quality within Lake Washington, once severely impacted by nutrient loading from sewage, has remarkably improved since regional wastewater treatment plants were constructed and the final plant discharging from the lake was closed.

The lake environment has also been impacted by new challenges. The shoreline character has continued to change over time, as additional docks and bulkheads have been built, contributing to a loss of woody debris, riparian vegetation, and other complex habitat features along the shoreline. Impervious surfaces have increased both within the shoreline area and in adjacent watersheds, and this, together with the consequent reduction in soil infiltration, have been correlated with increased velocity, volume, and frequency of surface water flows into the lake. These and other changes have impacted the habitat for salmonids. In 1999, chinook salmon and bull trout were listed as Threatened species under the Federal Endangered Species Act. The region's response to this listing has resulted in new scientific data and research that has improved our understanding of shoreline ecological functions and their value in terms of fish and wildlife, water quality and human health.

Kirkland's SMP is being updated to comply with the SMA requirements (RCW 90.58), and new SMP Guidelines (Washington Administrative Code [WAC] 173-26, Part III), which went into effect in 2003. One of the key objectives that the SMP must address is "no net loss of ecological shoreline functions necessary to sustain shoreline natural resources" (Ecology 2004). The no net loss goal, if carried out successfully, would maintain the existing ecological condition of shorelines within the City of Kirkland. However, SMP updates seek not only to maintain conditions, but to improve them:

> "…[shoreline master programs] include planning elements that when implemented, serve to improve the overall condition of habitat and resources within the shoreline area of each city and county (WAC 173-26-201(c))."

The SMP Guidelines require that local governments develop SMP goals that promote restoration of impaired shoreline ecological functions and a "real and meaningful" strategy to implement restoration objectives. Local governments are also encouraged to contribute to restoration by planning for and supporting restoration of shoreline functions through the SMP and other regulatory and non-regulatory programs.

Restoration planning is an important component of the environmental protection policy of the Act. The City of Kirkland's SMP includes shoreline protection and restoration elements achieved through planning, regulation, preservation of high quality shoreline areas, and the provisions established in this Restoration Plan, which provides the framework for the community's efforts to restore degraded portions of the City's shorelines.

The City's Shoreline Inventory and Characterization (The Watershed Company, December 2006) describes how natural shoreline processes have been modified and identifies the restoration potential and opportunities within each shoreline reach. This Shoreline Restoration Plan builds on that analysis to further identify overall goals and priorities for restoration, as well as projects and programs that are designed to contribute to local restoration goals, and mechanisms or strategies to ensure that restoration projects and programs will be implemented.

This document represents the Restoration Plan that, done in conjunction with mitigation resulting from implementation of the new regulations and policies, will result in improvements to the shoreline ecology along the Kirkland shoreline. This plan represents a long-term vision for restoration that will be implemented over time, resulting in incremental improvement over the existing conditions.

2. PURPOSE OF RESTORATION PLAN

A jurisdiction's Shoreline Master Program applies to uses and activities in the jurisdiction's shoreline zone. To assure no net loss of shoreline ecological functions, master programs are required to include provisions that require proposed individual uses and developments to analyze environmental impacts of the proposal and include measures to mitigate environmental impacts not otherwise avoided or mitigated by compliance with the master program and other applicable regulations. Despite these efforts, it is recognized that the impacts from all reasonably anticipated activities and uses cannot be fully mitigated under the SMP regulations. For instance, some allowed uses and developments, such as a new pier, cannot always be mitigated fully, resulting in incremental and unavoidable degradation of the baseline condition.

How then can the shoreline be improved over time in areas where the baseline condition is severely, or even marginally, degraded?

Section 173-26-201(2)(f) of the State Guidelines says:

> "master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded nonregulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or nonregulatory programs under other local, state, and federal laws, as well as any restoration effects that may flow indirectly from shoreline development regulations and mitigation standards."

However, degraded shorelines are not just a result of pre-Shoreline Master Program activities or allowed uses or activities that cannot be fully mitigated, but also of unregulated activities and exempt development. The new Guidelines also require that "[l]ocal master programs shall include regulations ensuring that exempt development in the aggregate will not cause a net loss of ecological functions of the shoreline." While some actions within shoreline jurisdiction are exempt from a permit, the Shoreline Master Program should clearly state that those uses and actions are not exempt from compliance with the Shoreline Management Act or the local Shoreline Master Program. Because the shoreline environment is also affected by uses and activities taking place outside of a specific local master program's jurisdiction (e.g., outside of city limits and outside of the shoreline zone within the city), review of actions, programs and policies that affect the greater area outside of the shoreline jurisdiction is essential for understanding how the City overall fits into the larger watershed context. The latter is critical when establishing realistic goals and objectives for improving the dynamic and highly inter-connected environments.

As directed by the State Guidelines, the following Restoration Plan provides a summary of baseline shoreline conditions, lists restoration goals and objectives, discusses existing or potential programs and projects that positively impact the shoreline environment, and provide a ranking analysis of designated projects based on both ecological benefit and overall feasibility. Finally, funding options and a monitoring plan of these various comprehensive restoration projects and programs are provided. In total, implementation of the Shoreline Master Program (with mitigation of project-related impacts) in combination with this Restoration Plan (for restoration of lost ecological functions that occurred either prior to a specific project or as part of a project that cannot fully mitigate its own impacts) should result in a net improvement in the City of Kirkland's shoreline environment in the long term.

In addition to meeting the requirements of the Guidelines, this Restoration Plan is also intended to support the City's or other non-governmental organizations' applications for grant funding, and to provide the interested public with contact information for the various entities working within the City to enhance the environment.

3. SHORELINE INVENTORY SUMMARY

3.1 Introduction

The City conducted a comprehensive inventory of its Lake Washington shoreline in 2006. The purpose of the shoreline inventory was to facilitate the City of Kirkland's compliance with the SMA and updated SMP Guidelines. The inventory describes existing physical and biological conditions in the Lake Washington shoreline zone within City limits, including recommendations for restoration of ecological functions where they are degraded. The *Final Shoreline Analysis Report* is summarized below.

3.2 Shoreline Boundary

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the state plus their associated "shorelands." Shorelands are defined as:

> "those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter…Any county or city may determine that portion of a one-hundred-year-floodplain[1] to be included in its master program as long as such portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom (RCW 90.58.030)"

Shorelands in the City of Kirkland include only areas within 200 feet of the ordinary high water mark, as established by the U.S. Army Corps of Engineers for Lake Washington, and any associated wetlands within shoreline jurisdiction. Lake Washington does not have a floodway or floodplain. As part of the shoreline jurisdiction assessment, Forbes Creek, Juanita Creek, and Yarrow Creek were reviewed. All features were found to have mean annual flows of less than 20 cubic feet per second and thus are not subject to regulation under the Shoreline Management Act. Two areas of known associated wetlands were identified, one contained within Juanita Bay and extending up the lower Forbes Creek riparian corridor, and the second within the lower Yarrow Bay wetlands. The shoreline jurisdiction extends up to the wetland boundary in these two areas and up to 200 feet from the Lake Washington ordinary high water mark in all other areas.

3.3 Shoreline Inventory

The shoreline inventory is divided into five main sections: Introduction, Current Regulatory Framework Summary, Shoreline Inventory, Conditions by Inventory Segment, and Analysis of Ecological Functions and Ecosystem-wide Processes. Four segments were established (A through D), and have been delineated based on existing land use and current location within either the City or the Potential Annexation Area (PAA). For the purposes of this Restoration

[1] According to RCW 173-220-030, 100-year floodplain is "that land area susceptible to being inundated by stream derived waters with a one percent chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulation maps or a reasonable method which meets the objectives of the act;"

Plan, the City has not included the PAA (Segment A), which has been separately addressed by King County.

3.3.1 Land Use and Physical Conditions

1. Existing Land Use: The City of Kirkland shoreline area is fully developed, with existing land uses largely consistent with planned land uses as illustrated in the Comprehensive Plan. Areas not occupied by residential or commercial/office developments are either formal and informal City parks and open spaces, or large wetland areas. The City's shoreline contains a total of 336 lots. Of these, only 32 undeveloped lots remain within shoreline jurisdiction. The majority of these undeveloped lots are located within Segment B (24); two are located in Segment C and six in Segment D. In Segment B, the relatively large number of undeveloped lots is due to a number of lots along the southwest corner of the Yarrow Bay wetlands. These figures indicate that only 10 percent of all properties within the shoreline area are vacant. This also illustrates that if future development occurs, it will likely be in the form of redevelopment consistent with adopted plans and regulations. Except for a few properties held in private ownership, the high-functioning portions of the shoreline have been appropriately designated and preserved as park/open space. The privately held properties have been protected through critical areas provisions, including buffers. Land uses along the shoreline are only expected to change minimally, if at all, although re-builds, substantial remodels, and some redevelopment of one type of commercial into another type of commercial, multi-family or mixed-use are anticipated.

2. Parks and Open Space/Public Access: Developing public shoreline access is a priority of the City, as evidenced by the goals and policies included in the Public Access element of the City's SMP, prepared in the early 1970s and last amended in 1989. Except for single-family residential areas or environmentally sensitive areas, the prior SMP required that all development provide public access to the water's edge and along the shoreline as much as possible. As a result of this requirement, the City has made significant progress towards establishing continuous pedestrian access along the water's edge in Segment D as many of the multi-family and commercial properties have redeveloped. Overall, the City has approximately 6.8 miles of trails within shoreline jurisdiction. The trails and parks combined provide 2.5 miles of public waterfront access. The SMP continues these provisions in order to allow for any gaps in this system to be infilled as redevelopment occurs.

   The City contains twelve designated parks or street-ends, some with extended areas of open space, such as the Forbes Creek riparian corridor. Juanita Beach Park is one of the City's largest multi-use parks located on the Lake Washington waterfront. The City commissioned the *Juanita Beach Park Draft Master Plan Report* (J.A. Brennan Associates, PLLC 2005) after assuming ownership from King County in 2002. The *Master Plan Report* includes goals for a number of areas, including environmental stewardship and recreation. The plan addresses potential day boat moorage, swimming beach improvements (to address water and sediment quality and excessive sediment deposition), a new non-motorized boat rental facility, hand-carried boat launch, and restoration of Juanita Creek, its buffer, and wetlands.

3. Shoreline Modifications: A combination of recent aerial photographs and a field inventory conducted by boat in March 2006 were used to collect information about shoreline

modifications in the City. The Kirkland shoreline is heavily modified with approximately 60 percent of the overall shoreline armored at or near the ordinary high water mark and an overall pier density of approximately 26 piers per mile. However, these numbers include the undeveloped shorelines in Segment B. Considering just Segments C and D, these numbers would rise to 86 percent armoring and 39 piers per mile. Comparatively, an evaluation of the entire Lake Washington shoreline found 71 percent of the shoreline armored and with approximately 36 piers per mile (Toft 2001). Thus, for Kirkland overall, both pier density and shoreline armoring are slightly lower than the lake-wide figures. However, when evaluating the developed shorelines of Segments C and D, these figures exceed the lake-wide average. Many of the piers have one or more boatlifts, and approximately one-quarter of the boatlifts have canopies.

As expected, the urban segment (Segment D) has the most altered shoreline, with 90 percent armored with either vertical or boulder bulkheads, and Juanita and Yarrow Bays (Segment B) have the least altered shorelines, with only 7 percent armoring. The residential segments (Segments A and C) are 76 and 83 percent armored, respectively. It is not uncommon around Lake Washington for some historic fills to be associated with the original bulkhead construction, usually to create a more level or larger yard. Most of these shoreline fills occurred at the time that the lake elevation was lowered during construction of the Hiram Chittenden Locks.

Also as expected, the highest amount of overwater cover per lineal foot of shoreline can be found in Segment D, which is nearly triple the amount of cover found in the residential segment (C). This can be attributed to the presence of several marinas, large park-associated piers, multiple large piers that serve condominiums, and a couple of over-water condominiums. However, the total number of individual pier/dock structures in the urban segment is about half of that in the residential segments, due to the abundance of single-family residential pier structures. Segment B had the lowest area of overwater cover and the lowest number of overwater structures.

The full shoreline inventory includes a more in-depth of discussion of the above topics, as well as information about transportation, stormwater and wastewater utilities, impervious surfaces, and historical/archaeological sites, among others.

3.3.2 Biological Resources and Critical Areas

With the exception of the Yarrow Bay wetlands and the Forbes Creek/Juanita Bay wetlands, the shoreline zone itself within the City of Kirkland is generally deficient in high-quality biological resources and critical areas, primarily because of the extensive residential and commercial development and their associated shoreline modifications. There are numerous City parks, but these are mostly well manicured and include extensive shoreline armoring and large pier and dock structures. There are few forested areas along the lakeshore, as most forested areas are surrounded by development and are not generally contiguous with Lake Washington. Landslide hazard areas are located within the shoreline zone along Segment C, between the south end of Rose Point Lane and Heritage Park. Wetlands mapped within shoreline jurisdiction include both the Yarrow Bay wetlands and the Forbes Creek/Juanita Bay wetlands. Additional unmapped areas of wetland fringe may also exist. Important fish-bearing streams in the shoreline zone include Juanita Creek, Forbes Creek, and Yarrow Creek. These streams are used by salmon, but have been impacted extensively by basin development, resulting in increased peak flows,

unstable and eroding banks, loss of riparian vegetation, and fish and debris passage barriers. These changes have altered their contributions of sediment, organic debris, and invertebrates into Lake Washington. Each of these systems continues to be targeted for restoration by one or more local or regional restoration groups. There are also other mapped smaller streams in the shoreline zone, including Carillon Creek and Cochran Springs.

WDFW mapping of Priority Habitat and Species (WDFW 2006) also indicates the presence of other Fish and Wildlife Habitat Conservation Areas and Priority Habitats within and adjacent to the shoreline zone. These include pileated woodpecker breeding areas, historic and current bald eagle nest locations, great blue heron nest colony, wetlands, urban natural open space, and riparian zones.

4. RESTORATION GOALS AND OBJECTIVES

4.1 Introduction

The City of Kirkland is located within the Lake Washington/Cedar/Sammamish Watershed. The Lake Washington/Cedar/Sammamish Watershed is home to three populations of Chinook salmon: Cedar River, North Lake Washington, and Issaquah. Studies indicate that Chinook salmon in this watershed are in trouble; they are far less abundant now than they were even in recent decades, and all three populations are at high risk of extinction. In March 1999, the federal government listed Puget Sound Chinook salmon as threatened under the Endangered Species Act (ESA).

The salmon's decline is an indicator of the overall health of the watershed. Concerned about the need to protect and restore habitat for Chinook salmon for future generations, 27 local governments in the watershed, including Kirkland, signed an interlocal agreement in 2001 to jointly fund the development of a conservation plan to protect and restore salmon habitat. The Final Chinook Salmon Conservation Plan is the result of this collaborative effort and is the conservation strategies and implementation efforts are referenced herein as a result of the City's commitment to this conservation strategy.

According to the *Lake Washington/Cedar/Sammamish Watershed (WRIA) Near-Term Action Agenda For Salmon Habitat Conservation*, Lake Washington suffers from "Altered trophic interactions (predation, competition), degradation of riparian shoreline conditions, altered hydrology, invasive exotic plants, poor water quality (phosphorus, alkalinity, pH), [and] poor sediment quality" (WRIA 8 Steering Committee 2002). Kirkland's *Final Shoreline Analysis Report* (The Watershed Company 2006) provides supporting information that validates these claims specifically in the City's shoreline jurisdiction. The *WRIA 8 Action Agenda* established four "ecosystem objectives," which are intended to guide development and prioritization of restoration actions and strategies. The objectives are as follows:

- "Maintain, restore, or enhance watershed processes that create habitat characteristics favorable to salmon.
- Maintain or enhance habitat required by salmon during all life stages and maintain functional corridors linking these habitats.

- Maintain a well-dispersed network of high-quality refuge habitats to serve as centers of population expansion.

- Maintain connectivity between high-quality habitats to allow for population expansion into recovered habitat as degraded systems recover."

The WRIA 8 restoration objectives, in combination with the results of the City's *Final Shoreline Analysis Report*, the direction of Ecology's *Shoreline Master Program Guidelines*, and the City's commitment (Appendix A) to support the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*, are the foundation for the following goals and objectives of the City of Kirkland's restoration strategy. Although the *WRIA 8 Action Agenda* and the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* are salmon-centered, pursuit of ecosystem-wide processes and ecological functions performance that favors salmon generally captures those processes and functions that benefit all fish and wildlife. Therefore, the results of these efforts are appropriate tools for Kirkland, and are consistent with the intent of the Shoreline Management Act

4.2 Goals and Objectives

The Goals and Objectives of the Restoration Plan are as follows:

Goal 1 – Maintain, restore or enhance watershed processes, including sediment, water, wood, light and nutrient delivery, movement and loss.

Goal 2 – Maintain or enhance fish and wildlife habitat during all life stages and maintain functional corridors linking these habitats.

Goal 3 – Contribute to conservation and recovery of chinook salmon and other anadromous fish, focusing on preserving, protecting and restoring habitat with the intent to recover listed species, including sustainable, genetically diverse, harvestable populations of naturally spawning chinook salmon.

4.2.1 System-wide Restoration Objectives

- Continue to work collaboratively with other jurisdictions and stakeholders in WRIA 8 to implement the Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan.

- Use the scientific foundation and the conservation strategy as the basis for local actions recommended in the Chinook Salmon Conservation Plan and as one source of best available science for future projects, ordinances, and other appropriate local government activities.

- Use the comprehensive list of actions, and other actions consistent with the Chinook Salmon Conservation Plan, as a source of potential site-specific projects and land use and public outreach recommendations.

- Use the start-list to guide priorities for regional funding in the first ten years of Chinook Salmon Conservation Plan implementation, and implementing start-list actions through local capital improvement projects, ordinances, and other activities.

- Continue to work to implement the goals and recommended actions for flood reduction, water quality improvement and aquatic habitat restoration contained within the City of Kirkland Surface Water Master Plan.

- Seek funding for various restoration actions and programs from local sources and by working with other WRIA 8 jurisdictions and stakeholders to seek federal, state, grant and other funding opportunities.

- Continue the City's efforts to develop and implement a public education plan to inform private property owners in the shoreline zone and in the remainder of the City about the effects of land management practices and other unregulated activities (such as vegetation removal, pesticide/herbicide use, car washing) on fish and wildlife habitats.

4.2.2 Lake Washington Restoration Objectives

- Improve Lake Washington and Lake Washington tributary stream health by managing the quality and quantity of stormwater runoff, consistent at a minimum with the latest Washington Department of Ecology *Stormwater Management Manual for Western Washington*. Make any additional efforts to meet and maintain state and county water quality standards in Lake Washington tributary streams.

- Improve Lake Washington tributary stream health by eliminating man-made barriers to anadromous fish passage, preventing the creation of new barriers, and providing for transport of water, sediment and organic matter at all stream crossings.

- Improve Lake Washington and Lake Washington tributary stream health by identifying hardened and eroding lakeshores and streambanks, and correcting to the extent feasible with bioengineered stabilization solutions.

- Improve Lake Washington and Lake Washington tributary stream health by increasing large woody debris recruitment potential through plantings of trees in the riparian corridors, particularly conifers. Where feasible, install large woody debris to meet short-term needs.

- Increase quality, width and diversity of native vegetation in protected corridors adjacent to stream and lake habitats to provide safe migration pathways for fish and wildlife, food, nest sites, shade, perches, and organic debris. Strive to control non-indigenous plants or weeds that are proven harmful to native vegetation or habitats.

- Reconnect and enhance small creek mouths as juvenile rearing areas.

- Habitat in small Lake Washington tributaries, such as those in the City of Kirkland, should be restored for coho so that production of cutthroat trout, which prey on juvenile chinook salmon in Lake Washington, is reduced.

- Decrease the amount and impact of overwater and in-water structures through minimization of structure size and use of innovative materials such as grated decking.
- Participate in lake-wide efforts to reduce populations of non-native aquatic vegetation.

5. LIST OF EXISTING AND ONGOING PROJECTS AND PROGRAMS

The following series of existing projects and programs are generally organized from the larger watershed scale to the City-scale, including City projects and programs and finally non-profit organizations that are also active in the Kirkland area.

5.1 Water Resource Inventory Area (WRIA) 8 Participation

The City was one of 27 members of the WRIA 8 Forum, which participated in financing and developing the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*. The *Chinook Salmon Conservation Plan* includes the City of Kirkland's implementation commitment in the form of City Council Resolution R-4510, approved 21 June 2005 (Appendix A).

The City's preparation of the *Shoreline Analysis Report Including Shoreline Inventory and Characterization of the City of Kirkland's Lake Washington Shoreline* (The Watershed Company 2006) and this *Shoreline Restoration Plan* are important steps toward furthering the goals and objectives of the WRIA 8 *Chinook Salmon Conservation Plan*. In its Resolution, the City committed to, among other things, "using the scientific foundation and the conservation strategy as the basis for local actions recommended in the plan and as one source of best available science for future projects, ordinances, and other appropriate local government activities." The City's Resolution also states that the City will use the "comprehensive list of actions, and other actions consistent with the *Chinook Salmon Conservation Plan*, as a source of potential site specific projects and land use and public outreach recommendations." The City's Shoreline Master Program update products rely heavily on the science included in the WRIA 8 products, and incorporate recommended projects and actions from the WRIA 8 products.

Table 1. WRIA 8 Action Start-List for Lake Washington and Status of Implementation in Kirkland

Action Item	Kirkland Implementation
Reduce predation to outmigrating juvenile Chinook by: reducing bank hardening, restoring overhanging riparian vegetation, replacing bulkhead and rip-rap with sandy beaches with gentle slopes, and use of mesh dock surfaces and/or community docks.	
• Encourage salmon friendly shoreline design during new construction or redevelopment by offering incentives and regulatory flexibility to improve bulkhead and dock design and revegetate shorelines.	The SMP includes incentives for homeowners to improve nearshore ecological functions.
• Increase enforcement and address nonconforming structures over long run by requiring that major redevelopment projects meet current standards.	Code enforcement is responsible for enforcing regulations which address

Action Item	Kirkland Implementation
	public health and safety issues, including regulations related to rubbish, garbage, specific nuisances, removal of vegetation, zoning, housing, dangerous buildings, and inoperable and unlicensed vehicles on private property. Enforcement actions are taken both proactively and in response to requests for action received from citizens.
• Discourage construction of new bulkheads; offer incentives (e.g., provide expertise, expedite permitting) for voluntary removal of bulkheads, beach improvement, riparian revegetation.	The SMP includes limitations on construction of new bulkheads and promotes voluntary improvements to nearshore ecological functions.
• Support joint effort by NOAA Fisheries and other agencies to develop dock/pier specifications to streamline federal/state/local permitting; encourage similar effort for bulkhead specifications.	The SMP includes dimensional and material standards which are intended to be in-line with state and federal permitting guidelines.
• Promote value of light-permeable docks, smaller piling sizes, and community docks to both salmon and landowners through direct mailings to lakeshore landowners or registered boat owners sent with property tax notice or boat registration tab renewal.	Kirkland has implemented this Action Item through development of its updated Shoreline Master Program, both in public outreach conducted during the update process and in the pier regulations.
• Offer financial incentives for community docks in terms of reduced permit fees, loan fees/percentage rates, taxes, and permitting time, in addition to construction cost savings.	Currently, incentives are not a tool used by the City to encourage community docks.
• Develop workshop series specifically for lakeshore property owners on lakeside living: natural yard care, alternatives to vertical wall bulkheads, fish friendly dock design, best management practices for aquatic weed control, porous paving, and environmentally friendly methods of maintaining boats, docks, and decks.	King County has led this effort Kirkland has also implemented training as part of the shoreline tour conducted as part of the SMP update process.
Protect and restore water quality in tributaries and along shoreline. Restore coho runs in smaller tributaries as control mechanism to reduce the cutthroat population. Reconnect and enhance small creek mouths as juvenile rearing areas.	
• Address water quality and high flow impacts from creeks and shoreline development through NPDES Phase 1 and Phase 2 permit updates, consistent with Washington Department of Ecology's 2001 Stormwater Management Manual, including low impact development techniques, on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into the lakes.	The City implements Ecology's 2005 *Stormwater Management Manual for Western Washington* through its NPDES Phase II permit. The NPDES Phase II permit is required to cover the City's stormwater discharges into regulated lakes and streams. Under the conditions of the permit, the City must protect and improve water quality through public education and outreach, detection and elimination of illicit non-stormwater discharges (e.g.,

Action Item	Kirkland Implementation
	spills, illegal dumping, wastewater), management and regulation of construction site runoff, management and regulation of runoff from new development and redevelopment, and pollution prevention and maintenance for municipal operations.
• Encourage low impact development through regulations, incentives, education/training, and demonstration projects.	The Comprehensive Plan and the SMP contain provisions which promote LID. Implementation of the 2005 *Stormwater Management Manual for Western Washington* also places greater emphasis on LID strategies. The City has incorporating LID techniques in a number of demonstration projects and has completed education/training for both homeowners and developers. The City's Planning Department coordinates the implementation of the *Natural Resource Management Plan,* which recognizes the complexity of the interaction of its water, land and air systems and identifies action items intended protect Kirkland's environmentally sensitive areas.
• Protect and restore water quality and other ecological functions in tributaries to reduce effects of urbanization and reduce conditions which encourage cutthroat. Protect and restore forest cover, riparian buffers, wetlands, and creek mouths by revising and enforcing critical areas ordinances and Shoreline Master Programs, incentives, and flexible development tools.	The City updated the Critical Areas Ordinance in 2003, and revised it further as part of the SMP update process for application in shoreline jurisdiction. Management of the City's critical areas using these regulations should help insure that ecological functions and values are not degraded, and impacts to critical areas are mitigated. The City will also update its Critical Areas Ordinance, as needed. The next current update is scheduled to be completed by December, 2011.
• Promote through design competitions and media coverage the use of "rain gardens" and other low impact development practices that mimic natural hydrology.	The City's *Currently Kirkland* cable program airs a show of local residents installing a rain garden at the Forbes House located at Juanita Beach Park. The City offers educational seminars and events on LID practices as part of its Green Building Program and Developer's Forum series. The City

Action Item	Kirkland Implementation
	has also prepared a brochure highlighting different LID techniques as well as a map of different installations that are available for viewing.

5.2 Comprehensive Plan Policies

In 1995 and again in 2004, the City completed major updates of the Kirkland Comprehensive Plan pursuant to Growth Management Act requirements. Additional amendments have been made to the Comprehensive Plan since 2004, most recently in 2008 which included amendments to the *Natural Environment Element*. The updated Comprehensive Plan contains a number of general and specific goals and policies that direct the City to permit and condition development in such a way that the natural environment is preserved and enhanced. The specific goals in the *Natural Environment Element* include:

Goal NE-1: Protect natural systems and features from the potentially negative impacts of human activities, including, but not limited to, land development.

Goal NE-2: Manage the natural and built environments to achieve no net loss of the functions and values of each drainage basin; and, where possible, to enhance and restore functions, values, and features. Retain lakes, ponds, wetlands, and streams and their corridors substantially in their natural condition.

Goal NE-3: Manage the natural and built environments to protect and, where possible, to enhance and restore vegetation.

Goal NE-4: Manage the natural and built environment to maintain or improve soils/geologic resources and to minimize risk to life and property.

Goal NE-5: Improve air quality and reduce Kirkland's contribution to climate change.

Techniques suggested by the various policies to protect the natural environment include requiring setbacks from sensitive areas, preserving habitats for sensitive species, preventing adverse alterations to water quality and quantity, promoting low impact development, preserving existing native vegetation, educating the public, and mitigating necessary sensitive area impacts, among others.

5.3 Natural Resources Management Plan

In 2003, the City adopted its Natural Resource Management Plan that calls for strategies intended to comprehensively manage Kirkland's natural resources. The Plan identifies three compelling reasons for managing natural resources in Kirkland: (1) the community's vision could not be attained without it, (2) the law requires it, and (3) without it, community assets become liabilities. The Plan recognizes the complexity of the interaction of

its water, land and air systems and identifies action items intended protect Kirkland's environmentally sensitive areas.

The Natural Resources Management Plan contains a number of general and specific goals and policies that address the shoreline, such as:

Look for opportunities to enhance the ecological functions of the Lake Washington shoreline wherever feasible. Actions that would aid recovery of the salmonids in Lake Washington include:

- Identify areas where it will be feasible to protect and restore natural lake shorelines and shallow water habitat and to remove bank armoring and docks.
- Identify, protect, and restore tributary mouths entering the lake. Studies show that juvenile chinook salmon hold and feed near the mouths of tributaries, even very small streams and drainages, during rearing and migration.
- Construct demonstration projects on public lands at key locations, such as at the mouth of Juanita Creek in Juanita Beach Park or where street ends meet the shoreline. Remove bulkheads, regrade shorelines, improve substrate, and plant overhanging vegetation in order to enhance rearing and refuge habitat for juvenile Chinook. Monitor to evaluate stability, sedimentation rates, and juvenile/adult use and predation. Consideration of containment issues in site selections is important.
- Identify opportunities to preserve, enhance, or restore lakeshore wetlands.
- Identify opportunities to treat stormwater entering Lake Washington through biofiltration or other water quality techniques. Consider experimental projects.
- Explore alternative dock design/migration packages that use bank softening to replace docks and bank armoring.
- Identify critical areas of juvenile and adult Chinook salmon migration for aquatic weeds management; control invasive aquatic weeds in those parts of the lake.

The Plan also addresses the need to integrate local, state and federal regulations for lakes, shorelines, streams, wetlands and aquifer recharge areas.

5.4 Critical Areas Regulations

The City of Kirkland critical areas regulations are found in Kirkland Zoning Code Chapter 90. In the early 1990s, Kirkland adopted regulations to designate and protect critical areas pursuant to the Washington State Growth Management Act (GMA) (RCW 36.70A). In response to later GMA amendments, the City adopted in 2002 a revised Critical Areas Ordinance (CAO) contained in the KZC consistent with best available science and all other requirements of the GMA. All activities which require a substantial development permit, conditional use or variance under the SMP or are exempt from a permit under the SMP are reviewed under the City's CAO for consistency. As stated above, if there is a conflict between the CAO and SMP, the regulations that offer the greatest environmental protection apply.

The regulations categorize streams based on salmonid use and duration of flow, with standard buffers ranging from 25 feet to 75 feet. Wetlands are classified into three categories based on size, presence of habitat for listed species or the species themselves, relationship to Lake Washington, general habitat function and value, and soils. Buffers range from 25 to 100 feet; all wetlands contiguous with Lake Washington have a 100-foot buffer.

As part of the SMP update, the critical areas regulations that apply in shoreline jurisdiction were updated to include Ecology's wetland rating system, increased wetland buffers and mitigation ratios, and other changes consistent with the latest scientific information.

Management of the City's critical areas both inside and outside of shoreline jurisdiction using these regulations should help insure that ecological functions and values are not degraded, and impacts to critical areas are mitigated. These critical areas regulations are one important tool that will help the City meet its restoration goals.

5.5 Stormwater Management and Planning

Although much of the City of Kirkland's Surface Water Utility's jurisdiction is outside of the shoreline zone, all of the regulated surface waters, both natural and piped, are discharged ultimately into Lake Washington and thus affect shoreline conditions. There are more than 70 outfalls directly into the shoreline area, and many more that discharge just outside of shoreline jurisdiction, but subsequently flow into the shoreline area (The Watershed Company 2006). The City's 2005 *Surface Water Master Plan* contains the following goals:

> Flood Reduction – minimize existing flooding and prevent increase in future flooding through construction of projects that address existing problems, increased inspection and rehabilitation of the existing system, and increased public education.
>
> Water Quality Improvement - increase efforts to maintain and improve water quality by increasing public education (source control), identifying pollution "hot spots" for possible water quality treatment and by examining City practices and facilities to identify where water quality improvements could be achieved.
>
> Aquatic Habitat – increase efforts to slow the decline of aquatic habitat and create improved conditions that will sustain existing fish populations. Combine hydrological controls, such as regional detention, with in-stream habitat improvement projects in Juanita and Forbes creeks watersheds that currently support fish populations.

Since preparation of the first *Surface Water Master Plan* in 1994, the Utility has accomplished a number of actions that further achieve its goals (excerpted from the 2005 *Surface Water Master Plan*).

> Flood Reduction
>
> - Eliminated most major flooding problems.
> - Mapped surface water infrastructure.

- Implemented a program to inspect and clear flooding "hot spots" during storm events

Water Quality

- Adopted an ordinance to prohibit illicit discharges (spills and dumping), require use of pollution prevention practices, require maintenance of private drainage facilities, and require pre- and post-development control of stormwater runoff.
- Established a water quality monitoring program.
- Implemented a volunteer program to conduct water quality monitoring, planting of native vegetation, and other activities.
- Increased frequency of system cleaning, resulting in removal of an average of 200 cubic yards of sediment per year
- Conducted regional water quality related outreach programs in Kirkland, including "Natural Yard Care" and "Horses for Clean Water."
- Distributed educational brochures regarding pollution prevention, car washing practices, and leaf blower use.
- Conducted storm drain stenciling with community groups.

The City applied for coverage under the Western Washington permit which was issued by Ecology and became effective on February 16, 2007. The NPDES Phase II permit is required to cover the City's stormwater discharges into regulated lakes and streams. Under the conditions of the permit, the City must protect and improve water quality through public education and outreach, detection and elimination of illicit non-stormwater discharges (e.g., spills, illegal dumping, wastewater), management and regulation of construction site runoff, management and regulation of runoff from new development and redevelopment, and pollution prevention and maintenance for municipal operations.

The City subsequently released a Stormwater Management Program (SWMP) in February 2008 (City of Kirkland 2008-a) which details implementation of the NPDES Phase II permit. The SWMP identifies programs to reduce pollutants in stormwater to the "maximum extent possible" by conducting programs and activities in the following program areas:

- Public Education and Outreach
- Public Involvement
- Illicit Discharge Detection and Elimination
- Construction and Post-construction runoff controls
- Pollution Prevention and Municipal Operations and Maintenance
- Monitoring

In 2007, the Department of Ecology published information about toxics levels in fish, including fish sampled in Lake Washington (Department of Ecology 2007). Lake Washington ranked second only to the Wenatchee River near Leavenworth for a site contaminant score. Although this report does not identify specific point sources, it represents a clear need to better understand contaminant sources and control.

5.6 Kirkland's Green Building Program

Kirkland's Green Building pilot program offers a priority permit processing incentive designed to encourage sustainable building in the construction of new single family residential development. Additionally, the program offers educational resources, such as this website, and hosts seminars on green building topics to help educate builders and the public about the benefits of sustainable building.

The goal of the Green Building Program, through certain design and construction techniques, is to reduce the environmental impact of buildings by:

- Protecting environmentally sensitive lands and plant species
- Minimizing the size of the building footprint
- Incorporating energy efficiency in the design and construction
- Using environmentally-friendly building materials that will create a healthy indoor and outdoor environment
- Providing for efficient water use
- Reducing the generation of solid waste

5.7 Comprehensive Park, Open Space and Recreation Plan 2001

The 2001 Comprehensive Park, Open Space and Recreation Plan provides policies and planning for parks, open space and recreating within the City of Kirkland, including waterfront parks.

The three primary goals of the Parks and Community Services Department are to:

- acquire, develop, and renovate a system of parks, recreational facilities, and open spaces that is attractive, safe, functional, and available to all segments of the population,
- enhance the quality of life in the community by providing services and programs that offer positive opportunities for building healthy productive lives, and
- protect and preserve publicly-owned natural resource areas.

The Plan contains policies and goals that address waterfront access and waterfront parks, including the following:

Policy 1.4 (KCP Policy 2.2): Small craft water-oriented activities/programs should be

encouraged along the shoreline where appropriate and consistent with public interest and needs.

Policy 1.11 (KCP Policy 3.1): The City should work cooperatively with numerous resource management agencies and citizens to care for streams, enhance degraded forests and wetlands, improve wildlife habitat, and provide limited public access.

Policy 1.12 (KCP Policy 3.2): The City should preserve opportunities for people to observe and enjoy wildlife and wildlife habitats.

5.8 Green Kirkland Partnership

The Green Kirkland Partnership is an alliance between the City, the Cascade Land Conservancy, and the local community focused on restoring natural areas within the City, including many City parks located along Lake Washington. This partnership aims to remove invasive plants in City parks and replant with native species, while enhancing community stewardship by coordinating volunteer efforts to restore natural open spaces.

This partnership includes a 20-year Forest Restoration Plan (City of Kirkland 2008b), which focuses on protecting Kirkland's forests for a sustainable future. Implementation of this plan includes coordination of volunteers to remove ivy and other invasive plants and replant with native plants. In 2008, the Green Kirkland Partnership had 36 volunteer restoration events held in the following City parks: Carillon Woods, Everest, Heritage, Juanita Bay, Kiwanis, McAuliffe, North Rose Hill Woodlands, South Rose Hill and Watershed parks. This work included Kiwanis and Juanita Bay Parks, which are located within the shoreline jurisdiction, but also other upland parks which contain streams and wetlands that drain into Lake Washington.

As part of the Green Kirkland Partnership, the City is also embarking on a multi-year habitat restoration project focusing on improving wildlife habitat in the extensive wetland and forest complex at Juanita Bay Park. Invasive and noxious species such as Himalayan blackberry are a large problem within the park. A Restoration Action Plan has been developed by the Seattle Urban Nature (SUN) that identified restoration priorities and a menu of specific tasks along with planting plans and maintenance schedules necessary to implement these tasks. This action plan is available on their website at: http://www.seattleurbannature.org/Resources/publications.html. In Spring 2009, the City of Kirkland hired EarthCorps to organize volunteer events in conjunction with trained crews to implement the projects identified in the Action Plan. This project will remove Himalayan blackberry, English ivy, and Scot's broom (which are all classified as noxious weeds in King County) and replace these with native plants to improved habitat to native and migrating birds and wildlife. Implementation of the plan also relies on the work of five Stewards trained by the Washington Native Plant Society who will lead volunteer events and involve the community to clear Himalayan blackberry from the trail and wetland buffer.

5.9 Other Parks & Community Services Department Activities

5.9.1 Parks & Community Services Department Planning and Management

The City commissioned the *Juanita Beach Park Master Plan Report* (J.A. Brennan Associates, PLLC 2005) after assuming ownership from King County in 2002. The *Master Plan Report*

includes goals for a number of areas, including environmental stewardship and recreation. The plan's Environmental Stewardship goals include:

- Enhance Juanita Creek to create a healthy stream environment. (This could include the reach within the park and up-stream reaches)
- Create a salmon and wildlife friendly shoreline
- Enhance and restore wetlands
- Educate the visitors about habitat values

Since 1998, the Kirkland Parks Department has been following an Integrated Pest Management (IPM) program. IPM is a sustainable approach to managing pests by combining cultural, mechanical, biological and chemical methods in a way that provides efficient maintenance of the City's park system.

The Kirkland Parks Department has also initiated a program to install water intakes in Lake Washington for use as irrigation of Kirkland Parks. The water withdrawn from Lake Washington by Parks would be used to irrigate eight parks, which are currently being provided with irrigation water from the City's potable water system. In conjunction with this project, the Parks Department plans to install vegetation along the shoreline edge.

The Kirkland Parks Department undertakes aquatic vegetation efforts at Houghton and Waverly Beach Parks, as well as Juanita Bay Park.

The City's Parks and Community Services Department has several other programs that could be leveraged to enact additional restoration projects to benefit shoreline conditions, including Juanita Bay Park Rangers, Eagle Scout/Capstone Projects, and the Youth Tree Education Program. All of these programs enable volunteers to donate time and energy to improving the park system.

Contact Information: City of Kirkland Parks & Community Services, (425) 587-3300

5.9.2 Juanita Bay Park Rangers

Juanita Bay Park Rangers provide educational and interpretative services at Juanita Bay Park. Rangers greet visitors, answer questions, monitor park usage, record wildlife activity, perform minor maintenance, and lead park tours.

5.9.3 Eagle Scouts

Eagle Scouts, the highest advancement rank in Scouting, have provided many services to the City's parks system. The Parks and Community Services Department provides project ideas that Eagle Scout candidates may choose from. Potential projects include the installation of park benches, fencing, boardwalks, trail improvements, and landscaping improvements.

5.10 Public Education

The City of Kirkland's Comprehensive Plan, *Natural Environment Element*, identifies the following policy statement based on the goal of protecting natural systems from human impacts (excerpted below). This helps guide City staff and local citizen groups in developing mechanisms to educate the public and broaden the interest in protecting and enhancing local environmental resources.

> Goal NE-1: Protect natural systems and features from the potentially negative impacts of human activities, including, but not limited to, land development.
>
> Policy NE-1.5: Provide to all stakeholders information concerning natural systems and associated programs and regulations. Work toward creating a culture of stewardship by fostering programs that support sound practices, such as low impact development and sustainable building techniques. Model good stewardship techniques in managing trees, streams, wetlands, shorelines and other natural features and systems in the public realm.

As part of the City of Kirkland's efforts to abide by this goal and policy, the City supports several volunteer efforts, such as the Green Kirkland Partnership and Eastside Audubon (see description below). Additional specific education efforts are described in other sections of Chapter 5.

5.11 Public Works Programs

The Public Works Department periodically produces educational materials for local citizens, including the quarterly "Reuse – Recycle - Conserve" publication, which is produced in both single-family and multi-family focused issues, and brochures, such as the "Low Impact Development Elements for Residential Stormwater Management." The Department also administers the Adopt a Storm Drain program based on volunteer involvement to reduce flooding by keeping storm drain covers clear of leaves and debris.

Contact Information: City of Kirkland Public Works, (425) 587-3800

5.12 Capital Improvement Program (CIP)

5.12.1 Surface Water Management Utility

The Public Works Department funds a number of Surface Water Management Utility projects through the Capital Improvement Program, including improvements to the City's storm drain system and streambed mitigation on public and private property. The CIP contains both funded and unfunded projects that range in size and scope from maintenance and replacement of aging infrastructure or damaged improvements, planting of riparian understory vegetation along stream edges to provide shading, as well as maintenance to prevent flooding and property damage, and installation of regional detention in the Forbes and Juanita Creek Basins.

The CIP contains several funded and unfunded projects addressing Juanita Creek to provide flood relief and habitat improvement.

The CIP also funds the annual streambank stabilization program. Goals of the streambank stabilization program are to provide the public benefits of improved water quality and decreased

flooding by stabilizing and restoring stream channels which may in many cases be located on private property. Most common stabilization methods funded through this program will be upstream detention and in-stream stabilization/restoration using bioengineering techniques.

Contact Information: City of Kirkland Public Works, (425) 587-3800

5.12.2 Parks

The Kirkland Public Works Department completes park renovation projects through the Capital Improvement Program. The CIP contains both funded and unfunded projects that range in size and scope from dock renovations, to park renovation, and park and open space acquisition.

The CIP helps to fund the Open Space and Park Land Acquisition Grant Match Program, which assists with or provides funding for acquisition of key sites as they become available. Acquiring more sites would fill gaps in the City's park system, provide open space contiguous to existing parks or provide important linkages. This project also allows the City to remain eligible for State-funded grant programs.

Shoreline Park renovation projects provide an opportunity to complete shoreline or stream restoration, new landscaping, and to implement Low Impact Development (LID) practices within the shoreline parks.

Dock renovations funded through the CIP offer the opportunity to replace dock decking material and conform to environmental regulations pertaining to decking material and construction.

Contact Information: City of Kirkland Parks & Community Services, (425) 587-3300

5.13 Cascade Land Conservancy

The Cascade Land Conservancy (CLC) has been actively working with the City of Kirkland, partnering with CLC on implementing the Cascade Agenda Vision – a 100-year vision focused on sustaining the local community, natural environment, and economy through the future growth of Puget Sound. The CLC also works with the City through the Green Kirkland Partnership (described above).

Contact Information: http://www.cascadeland.org/

5.14 Eastside Audubon

The Eastside Audubon (formerly the East Lake Washington Audubon Society) was formed in 1980 dedicated to the appreciation, study and conservation of birds and their habitats, primarily along the east side of Lake Washington. Volunteers have been instrumental in preserving many areas for birds, including Juanita Bay Park in Kirkland, Lake Hills Greenbelt in Bellevue, and Hazel Wolf Wetlands in King County. Recently, Eastside Audubon has been working with the Green Kirkland Partnership with invasive plant removal at Kirkland's Watershed Park.

Contact Information: http://www.eastsideaudubon.org/

5.15 Moss Bay Diving Club

The Moss Bay Diving Club, located in Kirkland, periodically performs in-water SCUBA cleanup events to remove submerged debris from Lake Washington.

Contact Information: http://www.mossbaydiveclub.org/

6. LIST OF FUTURE PROJECTS AND PROGRAMS TO ACHIEVE LOCAL RESTORATION GOALS

The following are potential projects and programs that would contribute to achieving the local restoration goals. The potential projects and programs are generally organized from the larger watershed scale to the City-scale, including City projects and programs and WRIA 8 Public Education/Outreach programs.

6.1 Unfunded WRIA 8 Projects

The *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* (WRIA 8 Steering Committee 2005) includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet as Project C296 on the "Lake Washington - Tier I - Initial Habitat Project List." It is identified as a low-priority project, however, because of its limited benefit to chinook salmon and perceived low feasibility.

6.2 Recommended Projects - Public

The following list of recommended projects (Table 2) is developed from a list of opportunity areas identified within the *Final Shoreline Analysis Report* (The Watershed Company 2006) and is intended to contribute to improvement of impaired functions on public property. The list of potential projects was created after assessing field conditions during the shoreline inventory and characterization phase and later evaluated on a project specific basis during the development of this Restoration Plan. The projects are listed in order from North to South.

Table 2. List of Recommended Projects - Public.

Site Number	Park	Restoration Type	Description
1	Juanita Beach Park	Reduce overwater cover	The large overwater boardwalk with skirting, which forms the designated swimming area, has the potential for impact reduction by installing deck grating in the pier decking and potentially removing or redesigning the breakwater in order to improve migratory conditions for juvenile salmonids and water circulation.
2	Juanita Beach Park	In-stream habitat improvement	Potential in-stream habitat improvements exist at the mouth of Juanita Creek (delta), including large woody debris installation and improvements to native vegetative cover. The *WRIA 8 Chinook Salmon Conservation Plan* includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet.

Site Number	Park	Restoration Type	Description
3	Forbes Creek - Juanita Bay Park	Remove invasive vegetation	Invasive vegetation, primarily reed canarygrass, purple and garden loosestrife, and Himalayan blackberry in the terrestrial zones and white water lily in the aquatic zone, is currently growing throughout the Forbes Creek riparian corridor and Juanita Bay Park. The primary objective for the less developed landscape zones is removal of invasive species and replacement with native species, as well as supplementation of existing native vegetation to increase species and habitat diversity.
4	Forbes Creek - Juanita Bay Park	Reduce overwater cover	The pedestrian trail/trestle across Juanita Bay to the west of 98th Street covers the mouth of Forbes Creek, potentially inhibiting salmon migration. The surface of the walkway could be re-decked with a grated material to reduce shading impacts to the aquatic environment.
5	Forbes Creek - Juanita Bay Park	Reduce in-water structures	Many remnant pier piles located within Juanita Bay could be removed.
6	Lake Ave W Street End Park	Remove invasive vegetation	This small street-end park consists of primarily lawn area with a moderate amount of shoreline vegetation (trees and shrubs). An abundance of invasive vegetation (ivy/reed canarygrass) could be removed and replaced with additional native vegetation to improve shoreline conditions for juvenile salmonids.
7	Lake Ave W Street End Park	Reduce in-water structures	An old remnant moorage slip located near the south property line that is not connected to shore could be removed to reduce in- and overwater structures.
8	Waverly Beach Park	Reduce overwater cover	Reduction of overwater cover by the existing pier through the installation of deck grating and removing pier skirting as feasible.
9	Waverly Beach Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
10	Waverly Beach Park	Enhance shoreline vegetation	Supplementation of nearshore native vegetation to improve habitat conditions for juvenile salmonids.
11	Waverly Beach Park	Reduce stormwater runoff	The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.
12	Marina Park	Reduce overwater cover	Reducing overwater cover through the installation of deck grating on the existing piers.
13	Marina Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
14	Marina Park	Enhance shoreline vegetation	Improving nearshore native vegetation.
15	Street-End Park	Reduce stormwater runoff	This small street-end park consists of an adjacent parking area located within the shoreline jurisdiction that likely drains surface runoff directly to Lake Washington. Future

Site Number	Park	Restoration Type	Description
			use of pervious material should be explored any time repairs are proposed.
16	David Brink Park	Reduce overwater cover	Reducing overwater cover through the installation of deck grating on the existing piers.
17	David Brink Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
18	David Brink Park	Reduce in-water structures	Removing unused remnant pier piles.
19	David Brink Park	Enhance shoreline vegetation	Improving nearshore native vegetation.
20	Settler's Landing	Enhance shoreline vegetation	This small street-end park contains the opportunity to improve shoreline habitat by improving native vegetative cover.
21	Settler's Landing	Reduce overwater cover	The existing shared use pier (public and private) could potentially be re-decked with grated materials to reduce shading impacts.
22	Marsh Park	Reduce overwater cover	Reduction of overwater cover by the existing pier through the installation of deck grating.
23	Marsh Park	Reduce shoreline armoring	Removal or minimization of shoreline armoring.
24	Marsh Park	Enhance shoreline vegetation	Improvement of nearshore native vegetation.
25	Marsh Park	Reduce stormwater runoff	The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.
26	Houghton Beach Park	Reduce overwater cover	Reducing overwater cover through the installation of deck grating on the existing piers and removing pier skirting as feasible.
27	Houghton Beach Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
28	Houghton Beach Park	Enhance shoreline vegetation	Improving nearshore native vegetation.
29	Yarrow Bay	Remove invasive vegetation	The biological need for control of aquatic invasive species in Yarrow Bay should be assessed. Both Yarrow Shores Condominiums and the Carillon Point Marina and condominiums have permits from Ecology to use chemical controls on milfoil and white water lily, which have become a nuisance to boaters and swimmers.

After identifying and describing these projects, each proposed action was ranked using evaluation criteria developed for this study and compiled on a questionnaire form. Evaluation criteria were grouped into two sections: (A) ecological considerations and (B) feasibility/public benefit considerations. Scoring was based on assumptions and project understanding within

the context of conceptual-level project elements, needs, and requirements. A weighting factor was included, where appropriate, to give certain criteria more or less emphasis than others.

A sample ranking form (Appendix B) is included to show the varying levels of consideration and their respective weighting factors. Notes were developed (Appendix B) to assist with completing the form and ensuring consistency between sites. The ecological considerations were completed with the aid of GIS mapping and best professional judgment. Feasibility/public benefit considerations were completed based on experience with shoreline design and construction projects, familiarity with permit processes, and public input over time. The individual ranking forms with tallied scores for each project are included in Appendix C of this report.

Numerical results from the project ranking are summarized in Table 3 from highest to lowest total score. Based on these results, projects with in-water habitat improvement, reduction of shoreline armoring, and large-scale invasive vegetation removal generally ranked highest in total score. However, it should be noted that the ranking of potential projects is intended to serve as a guide to developing restoration priorities and implementation targets, and does not necessarily require completion in the order presented. Some projects, due to their simplicity, rank high in terms of feasibility, and subsequently may be easier to implement than larger projects which may have high scores for ecological benefit. In general, ecological considerations have been given more weight than feasibility/public benefit considerations and, as a result, larger, more complex projects tend to have higher total scores.

Table 3. Project Ranking Results.

Site Number	Park	Restoration Type	Ecological Score	Feasibility Score	Total Score
2	Juanita Beach Park	In-stream habitat improvement	34.5	6.0	**40.5**
1	Juanita Beach Park	Reduce overwater cover	23.0	8.0	**31.0**
27	Houghton Beach Park	Reduce shoreline armoring	22.3	7.5	**29.8**
29	Yarrow Bay	Remove invasive vegetation	20.0	9.5	**29.5**
3	Forbes Creek - Juanita Bay Park	Remove invasive vegetation	20.0	9.0	**29.0**
17	David Brink Park	Reduce shoreline armoring	20.0	7.5	**27.5**
23	Marsh Park	Reduce shoreline armoring	20.0	7.5	**27.5**
9	Waverly Beach Park	Reduce shoreline armoring	19.0	8.0	**27.0**
13	Marina Park	Reduce shoreline armoring	19.0	7.0	**26.0**
5	Forbes Creek - Juanita Bay Park	Reduce in-water structures	17.5	6.5	**24.0**
28	Houghton Beach Park	Enhance shoreline vegetation	12.3	11.5	**23.8**

Site Number	Park	Restoration Type	Ecological Score	Feasibility Score	Total Score
4	Forbes Creek - Juanita Bay Park	Reduce overwater cover	14.0	9.5	**23.5**
10	Waverly Beach Park	Enhance shoreline vegetation	10.0	11.5	**21.5**
19	David Brink Park	Enhance shoreline vegetation	10.0	11.5	**21.5**
24	Marsh Park	Enhance shoreline vegetation	10.0	11.5	**21.5**
12	Marina Park	Reduce overwater cover	13.5	7.5	**21.0**
6	Lake Ave W Street End Park	Remove invasive vegetation	8.8	11.0	**19.8**
14	Marina Park	Enhance shoreline vegetation	6.5	11.5	**18.0**
26	Houghton Beach Park	Reduce overwater cover	8.3	8.5	**16.8**
8	Waverly Beach Park	Reduce overwater cover	7.0	7.5	**14.5**
16	David Brink Park	Reduce overwater cover	5.0	9.0	**14.0**
22	Marsh Park	Reduce overwater cover	5.0	8.5	**13.5**
21	Settler's Landing	Reduce overwater cover	4.8	8.5	**13.3**
20	Settler's Landing	Enhance shoreline vegetation	2.8	10.0	**12.8**
7	Lake Ave W Street End Park	Reduce in-water structures	3.0	9.5	**12.5**
25	Marsh Park	Reduce stormwater runoff	3.0	9.0	**12.0**
18	David Brink Park	Reduce in-water structures	2.6	9.0	**11.6**
11	Waverly Beach Park	Reduce stormwater runoff	3.0	8.5	**11.5**
15	Street-End Park	Reduce stormwater runoff	2.0	6.0	**8.0**

6.3 Recommended Projects - Private

General: Many shoreline properties have the potential for improvement of ecological functions through: 1) reduction or modification of shoreline armoring, 2) reduction of overwater cover and in-water structures (grated pier decking, pier size reduction, pile size and quantity reduction, moorage cover removal), 3) improvements to nearshore native vegetative cover, and/or 4) reductions in impervious surface coverage. Similar opportunities would also apply to undeveloped lots which may be used as community lots for upland properties or local street-

ends and utility corridors. Other opportunities may exist to improve either fish habitat or fish passage for those properties which have streams discharging to Lake Washington.

An example of how shoreline armoring might be reduced on some lots along the City's residential areas is depicted in Figure 1 below. This example displays before and after images of a typical lot in which the existing bulkhead is partially pulled back to create a shallow cove beach combined with natural materials. This example combines the effort to improve habitat conditions with improved access and aesthetics.

The SMP includes incentives for removing bulkheads and similar hard shoreline structures. The incentives allow property owners to reduced buffer widths when they agree to use alternative (soft-shore) armoring. The City could also explore additional development incentives for restoration, such as waiving some or all permit fees when shoreline restoration is included in a project. Further, the City could develop resource materials for property owners that want to be involved in restoration that would provide guidance with permitting and design issues. Examples could include the development of pre-approved plans.

Another potential incentive to encourage property owners to protect habitat and retain forest on their property is the Public Benefit Rating Program (PBRS), a current-use taxation program that reduces property taxes in exchange for property owners protecting habitat beyond what is required by regulations.

Expanded use of incentives programs to achieve restoration on privately owned shorelines should be considered whenever feasible and beneficial.

Restoration of Multiple Contiguous Properties: Through grant funding sources, restoration opportunities may be available to multiple contiguous shoreline properties, including residential lots that are interested in improving shoreline function. Restoring shoreline properties that are connected to one another would provide significantly more benefits than a more piecemeal approach. Therefore, priority should be given to restoration projects which involve multiple lots (such as accelerated permit processes).

6.4 Public Education/Outreach

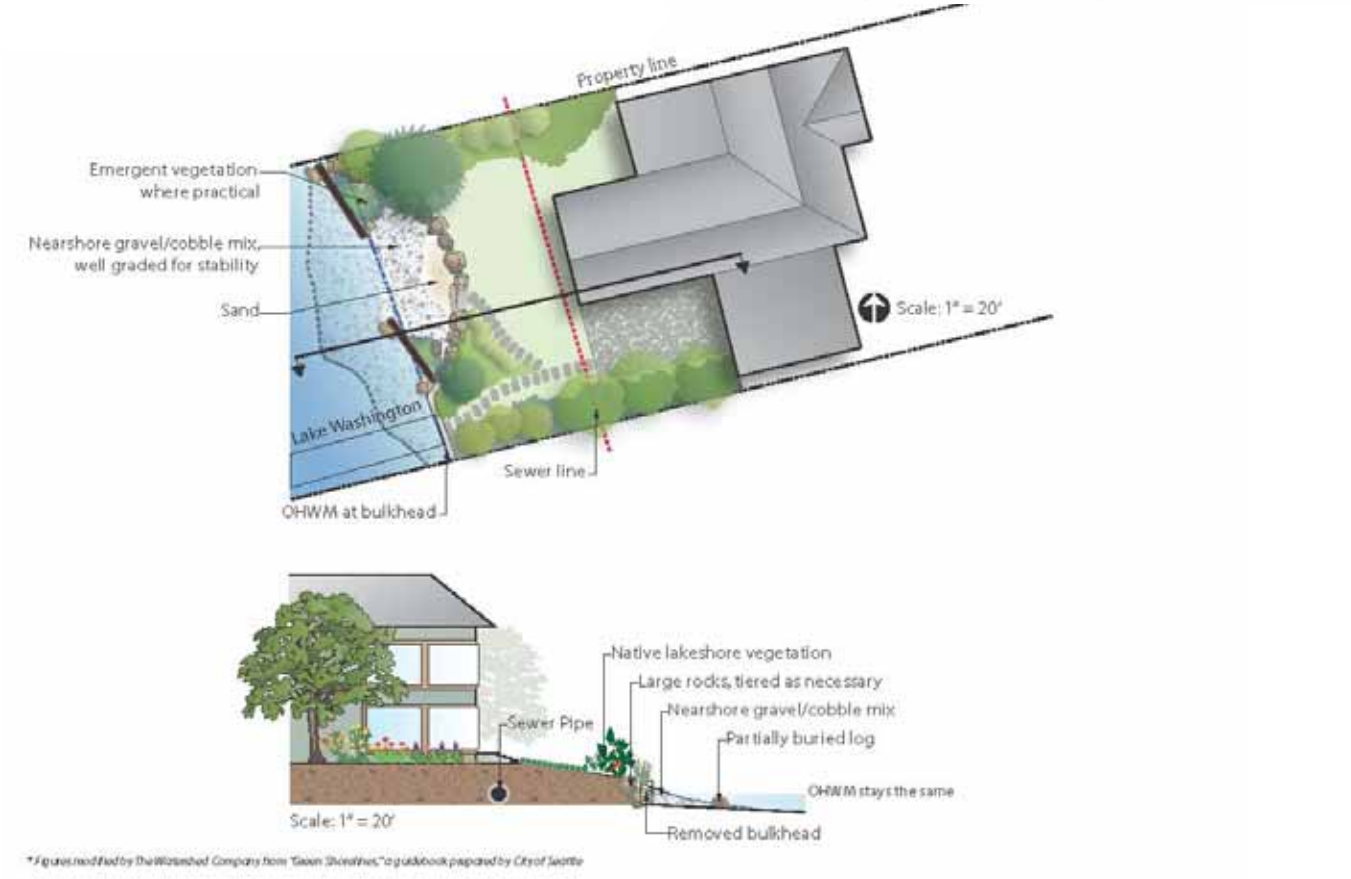
The *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* includes a table outlining 53 "Outreach and Education Actions" with target audiences for each action ranging from the general public, to shoreline property owners in general, to lakeshore property owners specifically, to businesses, to youth, and others. The complete list of WRIA 8 "Outreach and Education Actions" is included as Appendix D.

The City could also work with other local jurisdictions and the County to establish a Shore Stewards program within King County. Shore Stewards is a program operating in several counties throughout the State and provides a forum for waterfront and stream-side property owners to share ideas, information and resources and sets up guidelines for shoreline residents to preserve and enhance the shoreline environment.

Figure 1

Before

After



*Figures modified by The Watershed Company from "Green Shorelines," a guidebook prepared by City of Seattle

7. PROPOSED IMPLEMENTATION TARGETS AND MONITORING METHODS

As previously noted, the City's shoreline area is occupied by multi- and single-family residences, commercial, and public recreation/open space areas. Therefore, efforts should be made to improve shoreline ecological function through the promotion of restoration and healthy practices at all levels, from large-scale marina users to single-family property owners. The City of Kirkland already has a very active environmental community with a restoration and education focus. Continued improvement of shoreline ecological functions on the shoreline requires a more comprehensive watershed approach, which combines upland and shoreline projects and programs.

7.1 Implementation Targets

The following table (Table 4) outlines a possible schedule and funding sources for implementation of a variety of efforts that could improve shoreline ecological function, and are described in previous sections of this report.

Table 4. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Schedule	Funding Source or Commitment
5.1 WRIA 8 Participation	Ongoing	The City is an active member of the WRIA 8 Forum and has membership on the Salmon Recovery Council. Membership at this time entails a commitment of staff and Council member time. In addition, the City contributes funding to support watershed salmon habitat recovery.
5.2 Comprehensive Plan Policies	Ongoing	The City makes a substantial commitment of staff time in the course of project and program reviews to determine consistency and compliance with the recently updated Comprehensive Plan. The next full GMA update to the Comprehensive Plan will occur in 2011, but other amendments will be made on an annual basis.
5.3 Natural Resources Management Plan	Ongoing	As an implementation measure for this plan, the City has established an interdepartmental team to focus on natural resource issues, requiring a commitment of staff time.
5.4 Critical Areas Regulations	Ongoing with update in 2011	The City makes a substantial commitment of staff time in the course of project and program reviews to determine consistency and compliance with their Critical Areas Regulations. In addition, the City is scheduled to update its Critical Area Regulations in 2011.

Restoration Project/Program	Schedule	Funding Source or Commitment
5.5 Stormwater Planning	Ongoing	Currently, the City commits to staff time, materials, and projects in its CIP. The City currently follows its *2008 Stormwater Management Program* which implements the City's Phase II NPDES permit and reports annually to Ecology. The City is also involved in the implementation of the 2005 *Surface Water Master Plan*, which goals includes flood reduction, water quality improvements and aquatic habitat improvements.
5.6 Green Building Program	Ongoing	Currently, staff time and materials support these programs. A Green Shoreline component may be added to the program to encourage shoreline mitigation beyond what the shoreline regulations could require for building permits. The City is also working with the Master Builders Association to determine whether shoreline restoration strategies could be added to the BuiltGreen certification program.
5.7 Comprehensive Park, Open Space and Recreation Plan 2001	Ongoing, with update underway	Currently, the City commits to staff time, materials, and projects in its CIP.
5.8 Green Kirkland Partnership	Ongoing	Currently, the City commits staff time, materials, and funding through the CIP to support these programs.
5.9 Other Kirkland Parks and Community Services Department Activities	Ongoing, with demonstration projects as funds and opportunity allow	Currently, staff time, materials and funding support these programs. The public parks along the shoreline provide a unique opportunity to create a restoration strategy demonstration area, which can serve as a valuable education tool, providing property owners with information to restore their own property. As the City considers implementation of CIP projects in shoreline parks, it should consider restoration strategies as well as interpretative signage and materials.
5.10 Public Education	Ongoing	Currently, staff time and materials are provided in developing public education and outreach efforts, which are highlighted in the Comprehensive Plan policy statement based on the goal of natural resource protection. These items help guide City staff and local citizen groups in developing mechanisms to educate the public and broaden the interest in protecting and enhancing local environmental resources.
5.11 Public Works Programs	Ongoing	Currently, staff time, materials and an unspecified amount of funding support these programs.
5.12 Capital Improvement Program	Ongoing	The City funds a number of projects through its Capital Improvement Program that will minimize impacts to and enhance the shoreline environment, including work within the larger drainage basin to improve water quality as well as park renovation and acquisitions to protect and restore shoreline functions.

Restoration Project/Program	Schedule	Funding Source or Commitment
5.13 Cascade Land Conservancy	As funds and opportunity allow	These private organizations are either a source of grant funds for restoration projects, an advocate for specific restoration projects, independently obtains grants for restoration projects, or a partner in implementing restoration or education projects.
5.14 Eastside Audubon		
5.15 Moss Bay Diving Club	As volunteer opportunity allow	This organization periodically performs volunteer cleanup services in Lake Washington.
6.1 Unfunded WRIA 8 Projects	As funds and opportunity allow	The City Council passed a resolution in 2005 expressing its approval and support for the *Chinook Salmon Conservation Plan* (Steering Committee 2005). Projects will be funded by the City, partnering agencies and non-profit organizations, and grants as projects and funding opportunities arise. The City continues to identify funds for the implementation of the WRIA 8 projects in the City of Kirkland
6.2 Recommended Projects - Public	As funds and opportunity allow	Projects identified in this section would likely be implemented either when grant funds are obtained, when partnerships are formed between the City and other agencies or non-profit groups, or as may be required by the critical areas regulations and the Shoreline Master Program during project-level reviews by the City.
6.3 Recommended Projects - Private		
6.4 Public Education/ Outreach	As funds and opportunity allow	On-going and future education efforts should be coordinated with the City and partnering agencies, including funding sources (grant funding, monetary donations, volunteer hours)

7.2 Potential Additional Funding Sources

Potential funding opportunities for restoration projects could include both federal and state grants and legislative funds administered by state agencies, private non-governmental grant funding, as well as funding through participation in the WRIA 8 Steering Committee, and/or strategic partnering with King County agencies. A list of potential funding sources is included in Appendix E. While this list does not contain an exhaustive review of potential funding opportunities, it is a resource that can continually be maintained and updated.

7.3 Monitoring

In the context of the SMP update, restoration planning is a long-term effort. The SMP guidelines include the general goal that local master programs "include planning elements that, when implemented, serve to improve the overall condition of habitat and resources within the shoreline area" (WAC 173-26-201(c)).

The legislature has provided an overall timeframe for future amendments to the SMP. In 2003, Substitute Senate Bill 6012 amended the Shoreline Management Act (RCW 90.58.080) to establish an amendment schedule for all jurisdictions in the state. Once the City of Kirkland

amends its SMP (on or before December 1, 2009), the City is required to review, and amend if necessary, its SMP once every seven years (RCW 90.58.080(4)). During this review period, the City should document progress toward achieving shoreline restoration goals. The review could include:

- Re-evaluating adopted restoration goals, objectives, and policies;
- Summarizing both planning efforts (including application for and securing grant funds) and on-the-ground actions undertaken in the interim to meet those goals; and
- Revising the SMP restoration planning element to reflect changes in priorities or objectives.

In preparation and as part of its Shoreline Master Program updates, the City will review project monitoring information and shoreline conditions, and reevaluate restoration goals, priorities and opportunities.

In order to accomplish this task, City planning staff will track all land use and development activity, including exemptions, within shoreline jurisdiction, and shoreline actions and programs of the Parks and Public Works departments as well development activity on private property. A tracking system will be established that provides basic project information, including location, permit type issued, project description, impacts, mitigation (if any), and monitoring outcomes as appropriate. Examples of data categories might include square feet of non-native vegetation removed, square feet of native vegetation planted or maintained, reductions in chemical usage to maintain turf in City parks, linear feet of eroding bank stabilized through plantings, linear feet of shoreline armoring removed, square feet of overwater cover reduced or converted to grating, or number of fish passage barriers corrected.

A staff report will be prepared, on a seven (7) year cycle of adoption of the SMP, that summarizes the information from the tracking system, updates Tables 1 and 4 above, and outlines implementation of various programs and restoration actions (by the City or other groups) that relate to watershed health. The staff report will be used, in light of the goals and objectives of the Shoreline Master Program, to determine whether implementation of the SMP is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the *Shoreline Analysis Report* (The Watershed Company 2006). In the long term, the City should be able to demonstrate a net improvement in the City of Kirkland's shoreline environment.

Based on the results of the assessment in the staff report, the City may make recommendations for changes to the SMP.

8. RESTORATION PRIORITIES

The process of prioritizing actions that are geared toward restoration of Kirkland's shoreline areas involves balancing ecological goals with a variety of site-specific constraints. Briefly restated, the City's environmental protection and restoration goals include: 1) protecting watershed processes, 2) protecting fish and wildlife habitat, and 3) contributing to chinook conservation efforts. Constraints that are specific to Kirkland include a highly developed

residential shoreline along Lake Washington with large percentage of public open space/access. While some areas may already offer fairly good ecological functions (Juanita Bay/Forbes Creek wetland and Yarrow Bay wetland), they tend to include some additional opportunities to further enhance ecological functions. These goals and constraints were used to develop a hierarchy of restoration actions to rank different types of projects or programs associated with shoreline restoration.

Programmatic actions, like continuing WRIA 8 involvement and conducting outreach programs to local residents, tend to receive relatively high priority opposed to restoration actions involving private landowners. Other factors that influenced the hierarchy are based on scientific recommendations specific to WRIA 8, potential funding sources, and the projected level of public benefit. Restoration projects on public property, such as those identified in Section 6.2, have received a high priority ranking due to their availability to be funded by a variety of sources, such as CIP program, Parks Department, grants, and non-profit groups.

Although restoration project/program scheduling is summarized in the previous section (Table 4), the actual order of implementation may not always correspond with the priority level assigned to that project/program. This results from the balancing of various interests that must occur with limited funds and staff time. Some projects, such as those associated with riparian planting, are *relatively* inexpensive and easy to permit and should be implemented over the short and intermediate term despite the perception of lower priority than projects involving extensive shoreline restoration or large-scale capital improvement projects. Straightforward projects with available funding should be initiated immediately for the worthwhile benefits they provide and to preserve a sense of momentum while permitting, design, site access authorization, and funding for the larger, more complicated, and more expensive projects are under way.

8.1 Priority 1 – Continue Water Resource Inventory Area (WRIA) 8 Participation

Of basic importance is the continuation of ongoing, programmatic, basin-wide programs and initiatives such as the WRIA 8 Forum. Continue to work collaboratively with other jurisdictions and stakeholders in WRIA 8 to implement the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*. This process provides an opportunity for the City to keep in touch with its role on a basin-wide scale and to influence habitat conditions beyond its borders, which, in turn, come back to influence water quality and quantity and habitat issues within the City.

8.2 Priority 2 – Public Education and Involvement

Public education and involvement has a high priority in the City of Kirkland due to the predominance of residential development along the shoreline. Recent outreach efforts by other jurisdictions, such as the handbook *Green Shorelines: Bulkhead Alternatives for a Healthier Lake Washington* (City of Seattle 2008), have begun to change the perception of shoreline aesthetics, use, and ecological health. This and other outreach efforts (i.e. workshops, websites, example projects) are clear motivating and contributing factors for restoration activities on private property.

While many opportunities for shoreline restoration exist within City parks (see Section 6.2), multiple other opportunities also exist along community-owned properties and commercial

development. Whether the focus is on single-family residential, community-owned, or commercial properties, providing education opportunities and involving the public is key to success, and would possibly entail coordinating the development of a long-term Public Education and Outreach Plan (Section 6.2). This could also include focusing on gaining public support for restoration along City parks.

Specific projects from the Action Start List include developing a workshop series and website that is tailored to lakeshore property owners, and that promotes natural yard care, alternatives to vertical bulkheads, fish-friendly dock design, best management practices for aquatic weed control, porous paving, and environmentally friendly methods of maintaining boats, docks, and decks. Collaborative efforts with other jurisdictions (i.e City of Seattle and Bellevue) could be completed to meet the Action Start List goals. Additionally, design competitions and media coverage could be used to promote the use of "rain gardens" and other low impact development practices that mimic natural hydrology. A home/garden tour or "Street of Dreams" type event might serve to showcase these landscape/engineering treatments.

8.3 Priority 3 – Reduce Shoreline Armoring along Lake Washington, Create or Enhance Natural Shoreline Conditions

The preponderance of shoreline armoring and its association with impaired habitat conditions, specifically for juvenile chinook salmon, has been identified as one of the key limiting factors along Lake Washington (Kerwin 2001). Nearly 86 percent of the developed shoreline within the City of Kirkland (not including Juanita Bay and Yarrow Creek Wetland) is armored at or below the ordinary high water mark (The Watershed Company 2006). While there are no specifically identified projects in the *Final Lake Washington/ Cedar/ Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* that are located within Kirkland, there are many opportunities listed in this Restoration Plan which focus on the potential reduction in shoreline armoring and subsequent restoration and enhancement of shoreline ecological functions. Examples of opportunities to reduce shoreline armoring on public property, in order of priority rank, include (see Section 6.2 and Appendix C):

Site Number	Location
27	Houghton Beach Park
17	David Brink Park
23	Marsh Park
9	Waverly Park
13	Marina Park

However, emphasis should also be given to future project proposals that involve or have the potential to restore privately-owned shoreline areas to more natural conditions. The City should explore ways in which to assist local property owners, whether through technical or financial assistance, permit expediting, or guidance, to team together with restoration of multiple contiguous lots.

Recommendations from the Action Start List reflect this focus and encourage salmon friendly shoreline design during new construction or redevelopment by offering incentives and regulatory flexibility to improve bulkhead and dock design and revegetate shorelines. Other recommendations from the List that support this priority include: 1) increasing enforcement that addresses nonconforming structures over the long run by requiring that major redevelopment

projects meet current standards; 2) discouraging construction of new bulkheads and offer incentives (e.g., provide expertise, expedite permitting) for voluntary removal of bulkheads, beach improvement, riparian revegetation; 3) utilizing interpretive signage where possible to explain restoration efforts.

8.4 Priority 4 – Reduction of In-water and Over-water Structures

Similar to Priority 3 listed above, in-water and over-water structures, particularly piers, docks, and covered moorages, have been identified as one of the key limiting factors in Lake Washington (Kerwin 2001). Pier density along the City's developed shoreline is 39 piers per mile – very similar to a lake-wide average of 36 piers per mile. The density of residential development along the City's lakeshore is the main reason for the slightly higher-than-average pier density. While the pier density along residential shorelines is much higher than what is typically found along City-owned park property, the overall footprint of each public pier is generally much greater than is found along single-family residential sites. Opportunities exist for reduction in pier size and overall shading impacts through pier modifications on public sites. Examples, in order of priority rank, include (see Section 6.2 and Appendix C):

Site Number	Location
1	Juanita Beach Park
4	Forbes Creek/Juanita Bay Park
13	Marina Park
27	Houghton Beach Park
9	Waverly Park
17	David Brink Park
23	Marsh Park
21	Settler's Landing

Although no specific privately-owned project sites to reduce in-water and over-water structures within residential areas are identified here, future project proposals involving reductions in the size and/or quantity of such structures should be emphasized. Such future projects may involve joint-use pier proposals or pier reconstruction and may be allowed an expedited permit process.

Action Start List Recommendations in support of Priority 4 above include: 1) supporting the joint effort by NOAA Fisheries and other agencies to develop consistent and standardized dock/pier specifications that streamline federal/state/local permitting; 2) promoting the value of light-permeable docks, smaller piling sizes, and community docks to both salmon and landowners through direct mailings to lakeshore landowners or registered boat owners sent with property tax notice or boat registration tab renewal; and 3) offering financial incentives for community docks in terms of reduced permit fees and permitting time, in addition to construction cost savings. Similarly, the *WRIA 8 Conservation Plan* identified a future project (C302) to explore opportunities to reduce the number of docks by working with private property owners.

8.5 Priority 5 – Restore Mouths of Tributary Streams, Reduce Sediment and Pollutant Delivery to Lake Washington

Although most of the streams and their basins located within the City are outside of shoreline jurisdiction, except the lower sections of Yarrow Creek and Forbes Creek which are both within

the boundaries of shoreline associated wetlands, their impacts to shoreline areas should not be discounted. Many of these streams have the potential to provide fish and wildlife habitat. Specific projects in this category include the unfunded WRIA 8 project (C296) listed in Section 5.1 to restore the downstream section and mouth of Juanita Creek which feeds into Lake Washington. This would include working closely with the City's Park Department to provide revegetation, installation of habitat features, and other habitat modifications.

For juvenile chinook, once they enter Lake Washington, they often congregate near the mouths of tributary streams, and prefer low gradient, shallow-water habitats with small substrates (Tabor and Piaskowski 2002; Tabor et al. 2004b; Tabor et al. 2006). Chinook fry entering Lake Washington early in the emigration period (February and March) are still relatively small, typically do not disperse far from the mouth of their natal stream, and are largely dependent upon shallow-water habitats in the littoral zone with overhanging vegetation and complex cover (Tabor and Piaskowski 2002; Tabor et al 2004b). The mouths of creeks entering Lake Washington (whether they support salmon spawning or not), as well as undeveloped lakeshore riparian habitats associated with these confluence areas, attract juvenile chinook salmon and provide important rearing habitat during this critical life stage (Tabor et al. 2004b; Tabor et al. 2006).

Later in the emigration period (May and June), most chinook juveniles have grown to fingerling size and begin utilizing limnetic areas of the Lake more heavily (Koehler et al. 2006). As the juvenile chinook salmon mature to fingerlings and move offshore, their distribution extends throughout Lake Washington. Although early emigrating chinook fry from the Cedar River and North Lake Washington tributaries (primary production areas) initially do not disperse to shoreline areas in Kirkland, any salmon fry from smaller tributaries such as Juanita Creek, Forbes Creek, or Yarrow Creek, would depend on nearshore habitats of the Kirkland waterfront. Later in the spring (May and June), however, juvenile chinook are known to be well distributed throughout both limnetic and littoral areas of Lake Washington, and certainly utilize shoreline habitats in Kirkland.

Action Start List Recommendations in support of Priority 5 above include: 1) addressing water quality and high flow impacts from creeks and shoreline development through NPDES Phase 1 and Phase 2 permit updates, consistent with Washington Department of Ecology's 2005 Stormwater Management Manual, including low impact development techniques, on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into the lakes; and 2) Protecting and restoring water quality and other ecological functions in tributaries to reduce effects of urbanization. This involves protecting and restoring forest cover, riparian buffers, wetlands, and creek mouths by revising and enforcing critical areas ordinances and Shoreline Master Programs, incentives, and flexible development tools.

Priority 6 – Improve Riparian Vegetation, Reduce Impervious Coverage

Similar to the priorities listed above, improved riparian vegetation and reduction in impervious surfaces are emphasized in the *WRIA 8 Conservation Plan*. Nearly all of the specific project sites listed in Tables 2 and 3 include some form of protecting and improving riparian vegetation and several include reduction in impervious surface coverage. Examples of opportunities on public property, in order of priority rank, include (see Section 6.2 and Appendix C):

Site Number	Location
27	Houghton Beach Park (vegetation)
9	Waverly Park (vegetation)
17	David Brink Park (vegetation)
23	Marsh Park (vegetation)
13	Marina Park (vegetation)
21	Settler's Landing (vegetation)
23	Marsh Park (impervious surfaces)
11	Waverly Park (impervious surfaces)
15	Street-end Park (impervious surfaces)

8.6 Priority 7 – Reduce Aquatic Non-Native Invasive Weeds

While not specifically listed in the *WRIA 8 Conservation Plan*, reduction of aquatic invasive weeds from Lake Washington, particularly Eurasian watermilfoil and white water lily, is emphasized in Section 6.2. In particular, the nearshore areas surrounding both Juanita Bay and Yarrow Bay have large monocultures of these invasive aquatic plants. Growth of white water lily is particularly troublesome near the mouth of Forbes Creek, extending south along the shoreline of Juanita Bay Park.

Additionally, many other areas along the City's waterfront have also been subject to extensive growth of Eurasian watermilfoil. Not only are aquatic weeds a problem for boats and swimmers, but they also tend to reduce dissolved oxygen to lethal levels for fish, hampering foraging opportunities. As noted previously, nuisance-motivated control of invasive vegetation using herbicides has been approved by Ecology for the Yarrow Shores Condominiums, and the Carillon Point Marina and condominiums through 2011 (The Watershed Company 2006). Long-term control of aquatic non-native invasive plants in Lake Washington will be very difficult to achieve without coordinated inter-jurisdictional collaboration, including involvement and leadership from Washington State..

8.7 Priority 8 –Improve Water Quality and Reduce Sediment and Pollutant Delivery

Although most of the streams and their basins located within the City are outside of shoreline jurisdiction, except the lower sections of Yarrow Creek and Forbes Creek which are both within the boundaries of shoreline associated wetlands, their impacts to shoreline areas should not be discounted. Many of these streams have the potential to provide fish and wildlife habitat. They are also a common receiving body for non-point source pollution, which in turn delivers those contaminants to shoreline waterbodies.

Several actions focused on addressing water quality and stormwater controls include (derived from WRIA 8 watershed-wide actions list).

- Expand/Improve Incentives Programs
- Improve Enforcement of Existing Land Use and Other Regulations

- Increase Use of Low Impact Development and Porous Concrete
- Provide Incentives for Developers to Follow Built Green™ Checklist Sections Benefiting Salmon

These recommendations emphasize the use of low impact development techniques, on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into surface waters. They involve protecting and restoring forest cover, riparian buffers, wetlands, and creek mouths by revising and enforcing critical areas ordinances and Shoreline Master Programs, incentives, and flexible development tools.

8.9 Priority 9 – Acquisition of Shoreline Property for Preservation, Restoration, or Enhancement Purposes

The City should explore opportunities to protect natural areas or other areas with high ecological value or restoration potential via property acquisition. Mechanisms to purchase property would likely include collaboration with other stakeholder groups including representatives from local government, businesses and the general public in order to develop a prioritized list of actions. Many of the undeveloped properties located along the western edge of the Yarrow Bay wetland, which are highly encumbered by the presence of this high quality wetland, may be available for acquisition geared at preserving their overall function. Other properties throughout the more developed shoreline areas within the City may be available for acquisition both for preservation but also to act as a showcase for restoration potential.

8.10 Priority 10 – City Zoning, Regulatory, and Planning Policies

City Zoning, Regulatory, and Planning Policies are listed as being of lower priority in this case simply because they have been the subject of a thorough review and have recently been updated accordingly. Notably, the City's Critical Areas Ordinance was updated (April 2003) consistent with the Best Available Science for critical areas, including those within the shoreline area. For the time being, it is considered more important to capitalize on this Restoration Plan by focusing on implementing projects consistent with the updated SMP policies. Unimplemented or unused policies, by themselves, will not improve habitat. As time goes by, further review and potential updating of these policies may increase in priority. Policy-related items in this category as listed in previous sections include Comprehensive Plan Policies (Section 5.2), Critical Areas Regulations (Section 4.3), and Stormwater Planning (Section 5.4).

The City received its final NPDES Phase II permit in February 2007 from Ecology. The NPDES Phase II permit is required to cover the City's stormwater discharges into regulated lakes and streams. Under the conditions of the permit, the City must protect and improve water quality through public education and outreach, detection and elimination of illicit non-stormwater discharges (e.g., spills, illegal dumping, wastewater), management and regulation of construction site runoff, management and regulation of runoff from new development and redevelopment, and pollution prevention and maintenance for municipal operations.

The City conducts all of the above at some level already, but significant additional effort may be needed to document activities and to alter or upgrade programs. The City has various programs to control stormwater pollution through maintenance of public facilities, inspection of private facilities, water quality treatment requirements for new development, source control

work with businesses and residents, and spill control and response. Monitoring may be required as part of an illicit discharge detection and elimination program, for certain construction sites, or in waterbodies with a Total Maximum Daily Load (TMDL) Plan for particular pollutants. General water quality monitoring concerns include: a) stormwater quality; b) effectiveness of best management practices; and c) effectiveness of the stormwater management program.

9. CONCLUSIONS

This plan provides multiple programmatic and site-specific opportunities for restoring the City's shoreline areas that outline opportunities to achieve a net benefit in ecological conditions. The *Final Shoreline Analysis Report* has documented the following as key ecological impairments within the Kirkland shoreline areas: Lack of riparian vegetation and large woody debris, extensive shoreline armoring, extensive overwater coverage, nutrient and toxic inputs from runoff, and invasive aquatic vegetation. Ecological benefits that would be realized by implementing this plan include: increased use of soft approaches for shoreline stability and corresponding reductions in low-functioning hard shorelines; increased organic inputs, habitat, and filtration from shoreline riparian vegetation; improved wildlife corridor connectivity; improved habitat for salmon; displacement of noxious vegetation; and eventual introduction of woody debris.

Restoration planning is a new element of the SMP. As such, implementation of this plan will require additional City efforts and resources to implement the policies of this plan.

10. REFERENCES

City of Kirkland. 2008a. 2008 Stormwater Management Program (SWMP). February 2008.

City of Kirkland. 2008b. 20-year Forest Restoration Plan. March 2008.

City of Seattle. 2008. Green Shorelines: Bulkhead Alternatives for a Healthier Lake Washington. City of Seattle, Department of Planning and Development. 35pp.

Koehler, M.E., K.L. Fresh, D.A. Beauchamp, J.R. Cordell, C.A. Simenstad, and D.E. Seiler. 2006. Diet and bioenergetics of Lake-rearing juvenile chinook salmon in Lake Washington. Transactions of the American Fisheries Society 135:1580-1591.

Toft, J. D. 2001. Shoreline and dock modifications in Lake Washington. Prepared for King County Department of Natural Resources. October 2001. SAFS-UW-0106.

Tabor, R.A. and R.M. Piaskowski. 2002. Nearshore habitat use by juvenile chinook salmon in lentic systems of the Lake Washington Basin, Annual Report, 2001. U.S. Fish and Wildlife Service, Lacey, WA.

Tabor, R.A., H.A. Gearns, C.M. McCoy III, and S. Camacho. 2006. Nearshore habitat use by juvenile chinook salmon in lentic systems of the Lake Washington Basin, Annual Report, 2003 and 2004. U.S. Fish and Wildlife Service, Lacey, WA.

Tabor, R.A., J.A. Schuerer, H.A. Gearns, and E.P. Bixler. 2004. Nearshore habitat use by juvenile chinook salmon in lentic systems of the Lake Washington basin, annual report, 2002. U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office, Lacey, Washington.

The Watershed Company. 2006. Final Shoreline Analysis Report Including Shoreline Inventory and Characterization for the City of Kirklands's Lake Washington Shoreline. Prepared for City of Kirkland.

Washington Department of Ecology. 2007. Washington State Toxics Monitoring Program: Contaminants in Fish Tissue from Freshwater Environments in 2004 and 2005. Publication No. 07-03-024. June 2007. http://www.ecy.wa.gov/pubs/0703024.pdf

Washington Department of Fish and Wildlife (WDFW). 2006. Priority Habitats and Species database search results prepared for The Watershed Company, 17 March 2006.

WRIA 8 Steering Committee. 2002. Lake Washington/Cedar/Sammamish Watershed (WRIA) Near-Term Action Agenda For Salmon Habitat Conservation. August, 2002. http://dnr.metrokc.gov/wrias/8/near-term-action-agenda.htm.

WRIA 8 Steering Committee. 2005. Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan. July 2005.

APPENDIX A

CITY OF KIRKLAND RESOLUTION R-4510
RATIFYING THE WRIA 8 CHINOOK SALMON CONSERVATION PLAN

APPENDIX B

BLANK RESTORATION PROJECT RANKING FORM

Ranking Form

Number
Site
Activity

Description

Section A: Ecological Considerations		**Area or Distance**	**Rating**	**Weighting Factor**	**Total**
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)			1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)			1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)			2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)			1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).			0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)			1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)			0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).			0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).			0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)			1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)			1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)			1	0.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).			1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter			1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)			0.5	0
	Section A Subtotal				0.0
Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)			0.5	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)			0.5	0
B3	Cost of the project (high cost = 0, low cost = 5)			0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)			0.5	0
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)			0.5	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)			0.5	0
	Section B Subtotal				0
	Grand Total				0.0

	Notes
A1	Enter the square footage of riparian buffer area that will be enhanced with native vegetation. If the enhancement area is greater than 4,000 square feet, enter 4,000.
A2	Enter the linear footage of shoreline where gradient will be restored. If the project restores gradient over a distance greater than 100 feet, enter 100 feet)
A3	Enter the linear footage of shoreline where armoring will be removed. If the project removes armoring over a distance greater than 100 feet, enter 100 feet)
A4	Enter the square footage of overwater cover that will be removed near the shoreline (0 to 30 feet from the OHWM). If more than 200 square feet of overwater cover will be removed, enter 200.
A5	Enter the square footage of overwater cover that will be removed more than 30 feet from shore. If more than 300 square feet of overwater cover will be removed, enter 300.
A6	Enter the number of piles that will be removed near the shoreline (0 to 30 feet from the OHWM). If more than 20 , enter 20.
A7	Enter the number of piles that will be removed more than 30 feet from shore. If more than 30, enter 30.
A8	If the project increases light transmission through an existing nearshore structure (pier) without reducing its overwater footprint (i.e. by replacing wooden decking with grating), enter the square footage of overwater cover that will be daylighted (0 to 30 feet from the OHWM). If more than 200 square feet of nearshore overwater cover will be daylighted, enter 200.
A9	If the project increases light transmission through an existing off-shore structure (pier) without reducing its overwater footprint (i.e. by replacing wooden decking with grating), enter the square footage of overwater cover that will be daylighted (More than 30 feet from the OHWM). If more than 300 square feet of off-shore overwater cover will be daylighted, enter
A10	Enter the straight-line distance (in feet) to the nearest tributary. If the project is more than 1/4 mile (1,320 feet) from the nearest tributary, enter "0" in the rating column.
A11	Enter the distance, measured along the shoreline in feet, to the edge of the nearest high-quality shoreline habitat. If the project is more than 1/4 mile (1,320 feet) from the nearest high-quality shoreline habitat, enter "0" in the rating column.
A12	Enter 5 if the project has a high liklihood of improving ecological functions in the local area, 3 if the project may improve local ecological functions but there is some uncertainty of success, and 0 if there is little chance of improvement or there is a great deal of uncertainty associated with the success of the project.
A13	Enter "1" if there is some active environmental problem that will be addressed by the project, such as shoreline erosion or flooding.
A14	Enter the number of the shoreline segment where the project is located. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; if it is in Segment C, enter 2; if it is in Segment D, enter 1.

APPENDIX C

PROJECT RANKING FORMS

Number 1
Site Juanita Beach Park
Activity Install deck grating
Description The large overwater boardwalk with skirting, which forms the designated swimming area, has the potential for impact reduction by installing deck grating in the pier decking and potentially removing or redesigning the breakwater in order to improve migratory conditions for juvenile salmonids and water circulation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	20	1	1	5.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	30	1	0.5	2.5
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	300	1	1	3.9
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	100	1	1	4.6
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				23.0

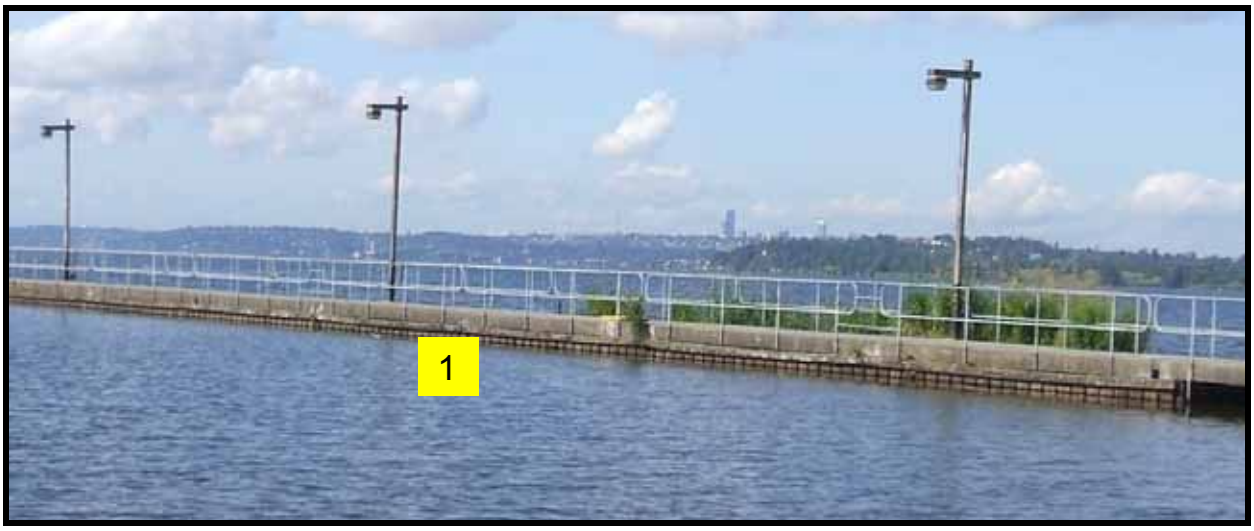
Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	4	0.5	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	2	0.5	1
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8
	Grand Total				31.0

Number	2
Site	Juanita Beach Park
Activity	In-stream habitat improvement
Description	Potential in-stream habitat improvements exist at the mouth of Juanita Creek (delta), including large woody debris installation and improvements to native vegetative cover. The WRIA 8 Chinook Salmon Conservation Plan includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet.

Section A: Ecological Considerations		**Area or Distance**	**Rating**	**Weighting Factor**	**Total**
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	5	0.5	2.5
	Section A Subtotal				34.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	0.5	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	1	0.5	0.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	0.5	1.5
	Section B Subtotal				6
	Grand Total				40.5

2/2/2007 1:40 PM
1
2


1

Number	3
Site	Forbes Creek - Juanita Bay Park
Activity	Remove invasive vegetation
Description	Invasive vegetation, primarily reed canarygrass, purple and garden loosestrife, and Himalayan blackberry in the terrestrial zones and white water lily in the aquatic zone, is currently growing throughout the Forbes Creek riparian corridor and Juanita Bay Park. The primary objective for the less developed landscape zones is removal of invasive species and replacement with native species, as well as supplementation of existing native vegetation to increase species and habitat diversity.

Section A: Ecological Considerations		**Area or Distance**	**Rating**	**Weighting Factor**	**Total**
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	1	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	0.5	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	0.5	1.5
	Section B Subtotal				9
	Grand Total				29.0

Number 4
Site Forbes Creek - Juanita Bay Park
Activity Improve fish passage and habitat
Description The pedestrian trail/trestle across Juanita Bay to the west of 98th Street covers the mouth of Forbes Creek, potentially inhibiting salmon migration. The surface of the walkway could be re-decked with a grated material to reduce shading impacts to the aquatic environment.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				14.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	4	0.5	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9.5
	Grand Total				23.5

Number 5
Site Forbes Creek - Juanita Bay Park
Activity Old pier pile removal

Description Many remnant pier piles located within Juanita Bay could be removed.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	20	1	1	5.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	30	1	0.5	2.5
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	800	1	1	2.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				17.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	0	0.5	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				6.5
	Grand Total				24.0

3
4
4
4
5

Number 6
Site Lake Ave W Street End Park
Activity Remove invasive vegetation
Description This small street-end park consists of primarily lawn area with a moderate amount of shoreline vegetation (trees and shrubs). An abundance of invasive vegetation (ivy/reed canarygrass) could be removed and replaced with additional native vegetation to improve shoreline conditions for juvenile salmonids.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	1000	1	1.4	1.8
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)			0	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A	4	1	4.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				8.8

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				11
	Grand Total				19.8

Number 7
Site Lake Ave W Street End Park
Activity Reduce in-water structures

Description An old remnant moorage slip located near the south property line that is not connected to shore could be removed to reduce in- and overwater structures.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	30	1	1	0.8
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	56	1	0.5	0.5
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	2	1	1	0.5
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	3	1	0.5	0.3
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				3.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9.5
	Grand Total				12.5

6
7

WELCOME TO KIRKLAND
LAKE AVENUE WEST PARK
CLOSED FROM 10:00 PM - DAWN

6

Number 8
Site Waverly Beach Park
Activity Reduce overwater cover

Description Reduction of overwater cover by the existing pier through the installation of deck grating and removing pier skirting as feasible.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				7.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				14.5

Number 9
Site Waverly Beach Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				19.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	4	0.5	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8
	Grand Total				27.0

Number 10
Site Waverly Beach Park
Activity Enhance shoreline vegetation

Description Supplementation of nearshore native vegetation to improve habitat conditions for juvenile salmonids.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				10.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				21.5

Number 11
Site Waverly Beach Park
Activity Reduce stormwater runoff

Description The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				3.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				11.5

11
9
10
8

8

Number 12
Site Marina Park
Activity Reduce overwater cover

Description Reducing overwater cover through the installation of deck grating on the existing piers.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	200	1	1	5.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.5	2.5
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				13.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				21.0

Number 13
Site Marina Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				19.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	2	0.5	1
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7
	Grand Total				26.0

Number 14
Site Marina Park
Activity Enhance shoreline vegetation

Description Improving nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	2000	1	1.4	3.5
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				6.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				18.0

14
13
12

12

Number 15
Site Street-End Park
Activity Reduce stormwater runoff

Description This small street-end park consists of an adjacent parking area located within the shoreline jurisdiction that likely drains surface runoff directly to Lake Washington. Future use of pervious material should be explored any time repairs are proposed.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				2.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	1	0.5	0.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				6
	Grand Total				8.0

15

15

Number 16
Site David Brink Park
Activity Install deck grating

Description Reducing overwater cover through the installation of deck grating on the existing piers.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				5.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	4	0.5	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9
	Grand Total				14.0

Number 17
Site David Brink Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				27.5

Number 18
Site David Brink Park
Activity Reduce in-water structures

Description Removing unused remnant pier piles.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	5	1	1	1.3
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	4	1	0.5	0.3
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A	0	1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				2.6

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9
	Grand Total				11.6

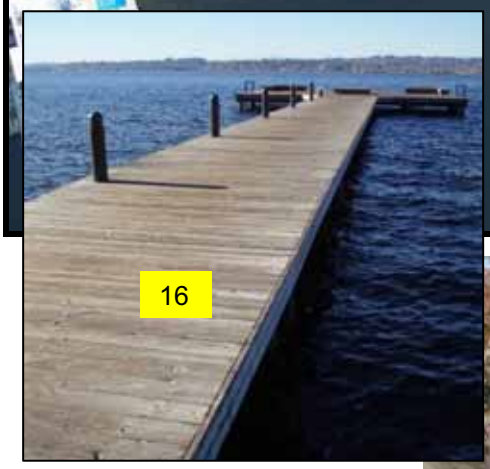
Number 19
Site David Brink Park
Activity Enhance shoreline vegetation

Description Improving nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				10.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				21.5

19
17
18
16


16

19
17

18

Number 20
Site Settler's Landing
Activity Enhance shoreline vegetation

Description This small street-end park contains the opportunity to improve shoreline habitat by improving native vegetative cover.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	1000	1	1.4	1.8
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				2.8

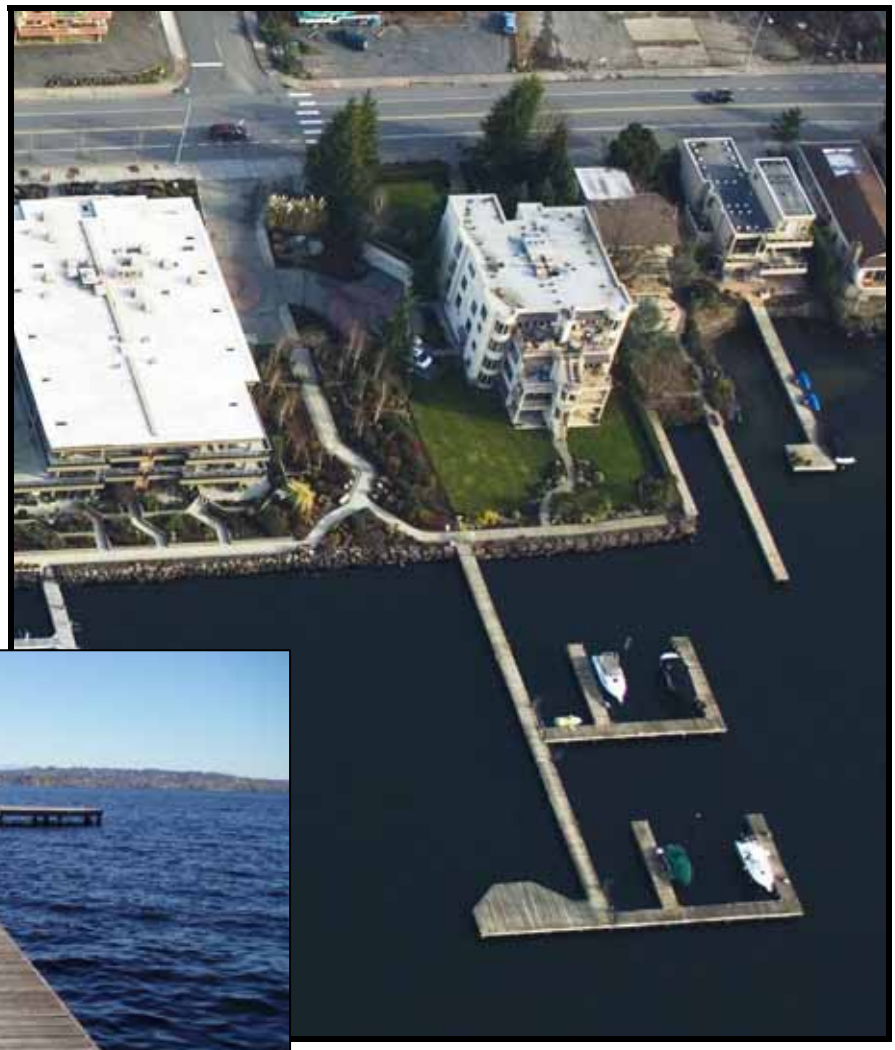
Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	2	0.5	1
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				10
	Grand Total				12.8

Number 21
Site Settler's Landing
Activity Install deck grating

Description The existing shared use pier (public and private) could potentially be re-decked with grated materials to reduce shading impacts.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	180	1	0.4	1.8
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				4.8

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				13.3



21

20

Number 22
Site Marsh Park
Activity Install deck grating

Description Reduction of overwater cover by the existing pier through the installation of deck grating.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				5.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				13.5

Number 23
Site Marsh Park
Activity Reduce shoreline armoring

Description Removal or minimization of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				27.5

Number 24
Site Marsh Park
Activity Enhance shoreline vegetation

Description Improvement of nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				10.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				21.5

Number 25
Site Marsh Park
Activity Reduce stormwater runoff

Description The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				3.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9
	Grand Total				12.0

25
24
23
22

22

24
23

Number 26
Site Houghton Beach Park
Activity Install deck grating

Description Reducing overwater cover through the installation of deck grating on the existing piers and removing pier skirting as feasible.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	700	1	1	2.3
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				8.3

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				16.8

Number 27
Site Houghton Beach Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	700	1	1	2.3
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				22.3

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				29.8

Number 28
Site Houghton Beach Park
Activity Enhance shoreline vegetation

Description Improving nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	700	1	1	2.3
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				12.3

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				23.8

27
28
26

26

27

Number 29
Site Yarrow Bay
Activity Remove invasive vegetation
Description The biological need for control of aquatic invasive species in Yarrow Bay should be assessed. Both Yarrow Shores Condominiums and the Carillon Point Marina and condominiums have permits from Ecology to use chemical controls on milfoil and white water lily, which have become a nuisance to boaters and swimmers.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	0.5	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	0.5	1.5
	Section B Subtotal				9.5
	Grand Total				29.5

2/2/2007 1:45 PM
29

APPENDIX D

PROPOSED OUTREACH AND EDUCATION ACTIONS

APPENDIX E

FUNDING OPPORTUNITIES

Grant Name	Allocating Entity	Web-Site
Acorn Foundation	Acorn Foundation	http://www.commoncounsel.org/Acorn%20Foundation
Allen Family Foundation, Paul G. – Science and Technology Program	Paul G. Allen Family Foundation	http://www.pgafamilyfoundation.org/
Aquatic Lands Enhancement Account (ALEA)	Washington Recreation and Conservation Office	http://www.rco.wa.gov/rcfb/grants/alea.htm
Salmon Recovery Grant Program	Washington Recreation and Conservation Office	http://www.rco.wa.gov/srfb/grants/salmon_recovery.htm
Freshwater Fish Conservation Initiative and other various programs	National Fish and Wildlife Foundation	http://www.nfwf.org/AM/Template.cfm?Section=Fish_Conservation2
Bullitt Foundation	Bullitt Foundation	http://www.bullitt.org/
Water Quality Program	Washington State Department of Ecology	http://www.ecy.wa.gov/programs/wq/funding/FundingPrograms.html
Sea Program	Washington State Department of Ecology	http://www.ecy.wa.gov/programs/sea/sea-grants.htm
Coastal Protection Account	Washington Department of Ecology	
Washington CZM 309 Improvement Grants Program	Washington Department of Ecology	http://www.ecy.wa.gov/programs/sea/czm/309-improv.html
NOAA Restoration Center Partnerships	NOAA Fisheries: Restoration Center	http://www.nmfs.noaa.gov/habitat/restoration/funding_opportunities/funding_nwr.html
Cooperative Endangered Species Conservation Fund	US Fish and Wildlife Service	http://www.fws.gov/endangered/grants/index.html
Doris Duke Charitable Foundation	Doris Duke Charitable Foundation	http://www.ddcf.org/
Fish America Grant Program	Fish America Foundation	http://www.fishamerica.org/grants/
Various	Environmental Protection Agency	http://www.epa.gov/epahome/grants.htm
Landowner incentive program	Washington State Department of Fish and Wildlife	http://wdfw.wa.gov/grants/lip/
King Conservation District Funds	King Conservation District	http://www.kingcd.org/pro_gra.htm

Grant Name	Allocating Entity	Web-Site
The King County Water Quality Block Grant Fund	King County	http://www.kingcounty.gov/environment/grants-and-awards/grant-exchange/waterworks.aspx
King County Community Salmon Fund	National Fish and Wildlife Foundation	http://www.kingcounty.gov/environment/grants-and-awards/grant-exchange/waterworks.aspx
King County Flood Control District	King County	http://www.kingcounty.gov/environment/waterandland/flooding/flood-control-zone-district.aspx

Attachment 6
HCC 5/20/09

WORKING DRAFT (IN PROGRESS)

SHORELINE CUMULATIVE IMPACTS ANALYSIS

for the City of Kirkland Shoreline Master Program

Prepared by:

City of Kirkland
Planning and Community Development
123 Fifth Avenue
Kirkland, WA 98033

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, WA 98033

May 2009

Printed on 30% recycled paper.

The Watershed Company Reference Number:
051011

The Watershed Company Contact Person:
Amy Summe and Dan Nickel

Cite this document as:
The Watershed Company. May 2009. Shoreline Cumulative Impacts Analysis for City of Kirkland Shoreline Master Program. Prepared for the City of Kirkland: Planning and Community Development.

TABLE OF CONTENTS

Page #

1 Introduction 1
2 Existing Conditions 3
2.1 Residential – L Environment 4
2.1.1 Existing Land Use 4
2.1.2 Parks and Open Space/Public Access 5
2.1.3 Shoreline Modifications 5
2.2 Residential – M/H Environment 6
2.2.1 Existing Land Use 6
2.2.2 Parks and Open Space/Public Access 8
2.2.3 Shoreline Modifications 8
2.3 Urban Conservancy 9
2.3.1 Existing Land Use 9
2.3.2 Parks and Open Space/Public Access 9
2.3.3 Shoreline Modifications 10
2.4 Urban Mixed 10
2.4.1 Existing Land Use 11
2.4.2 Parks and Open Space/Public Access 11
2.4.3 Shoreline Modifications 11
2.5 Natural Environment 12
2.5.1 Existing Land Use 12
2.5.2 Parks and Open Space/Public Access 12
2.5.3 Shoreline Modifications 12
2.6 Aquatic Environment 13
2.7 Biological Resources and Critical Areas 13
3 Anticipated Development and Potential Effect on Function 13
3.1 Patterns of Shoreline Activity 13
3.2 Residential Development 15
3.3 Overwater Structures 17
3.4 Shoreline Stabilization 20
4 Protective SMP Provisions 21
4.1 Environment Designations 21
4.2 General Goals, Policies and Regulations 28
5 Effect of Other Programs 29
5.1 Washington Department of Fish and Wildlife 29
5.2 Washington Department of Ecology 29
5.3 U.S. Army Corps of Engineers 29
6 Restoration Opportunities 30

7 Assessment of Cumulative Impacts 31
8 Net Effect on Ecological Function 39
9 References 40
10 List of Acronyms and Abbreviations 41

LIST OF EXHIBITS

Exhibit 1. Department of Ecology Illustration to Achieve “no net loss” 2
Exhibit 2. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Low Shoreline Environment. 5
Exhibit 3. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Medium/High Shoreline Environment. 8

LIST OF TABLES

Table 1. Length of Shoreline Frontage and Shoreline Area by Environment Designation 3
Table 2. Existing shoreline residential structure setback data for the Residential – L environment. 4
Table 3. Shoreline armoring in the Residential – L environment. 6
Table 4. In-water structures in the Residential – L environment. 6
Table 5. Existing shoreline residential structure setback data for the Residential – M/H environment. 7
Table 6. Shoreline armoring in the Residential – M/H environment. 8
Table 7. In-water structures in the Residential – M/H environment. 9
Table 8. Shoreline armoring in the Urban Conservancy environment. 10
Table 9. In-water structures in the Urban Conservancy environment. 10
Table 10. Existing shoreline residential structure setback data for the Urban Mixed environment. 11
Table 11. Shoreline armoring in the Urban Mixed environment. 12
Table 12. In-water structures in the Urban Mixed environment. 12
Table 14. Comparison of build-out conditions for overwater structures. 19
Table 15. Shoreline Use and Activities Matrix 22
Table 16. Qualitative Assessment of Cumulative Impacts 33

APPENDIX A - FIGURES

Figure 1. Shoreline Environment Designations

SHORELINE CUMULATIVE IMPACTS ANALYSIS

FOR CITY OF KIRKLAND
SHORELINE MASTER PROGRAM

1 INTRODUCTION

The Shoreline Management Act guidelines (Washington Administrative Code [WAC] 173-26, Part III) require local shoreline master programs (SMPs) to regulate new development to "achieve no net loss of ecological function." The guidelines state that, "To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts" (WAC 173-26-186(8)(d)).

The guidelines further elaborate on the concept of net loss as follows:

> "When based on the inventory and analysis requirements and completed consistent with the specific provisions of these guidelines, the master program should ensure that development will be protective of ecological functions necessary to sustain existing shoreline natural resources and meet the standard. The concept of "net" as used herein, recognizes that any development has potential or actual, short-term or long-term impacts and that through application of appropriate development standards and employment of mitigation measures in accordance with the mitigation sequence, those impacts will be addressed in a manner necessary to assure that the end result will not diminish the shoreline resources and values as they currently exist. Where uses or development that impact ecological functions are necessary to achieve other objectives of RCW 90.58.020, master program provisions shall, to the greatest extent feasible, protect existing ecological functions and avoid new impacts to habitat and ecological functions before implementing other measures designed to achieve no net loss of ecological functions." [WAC 173-206-201(2)(c)]

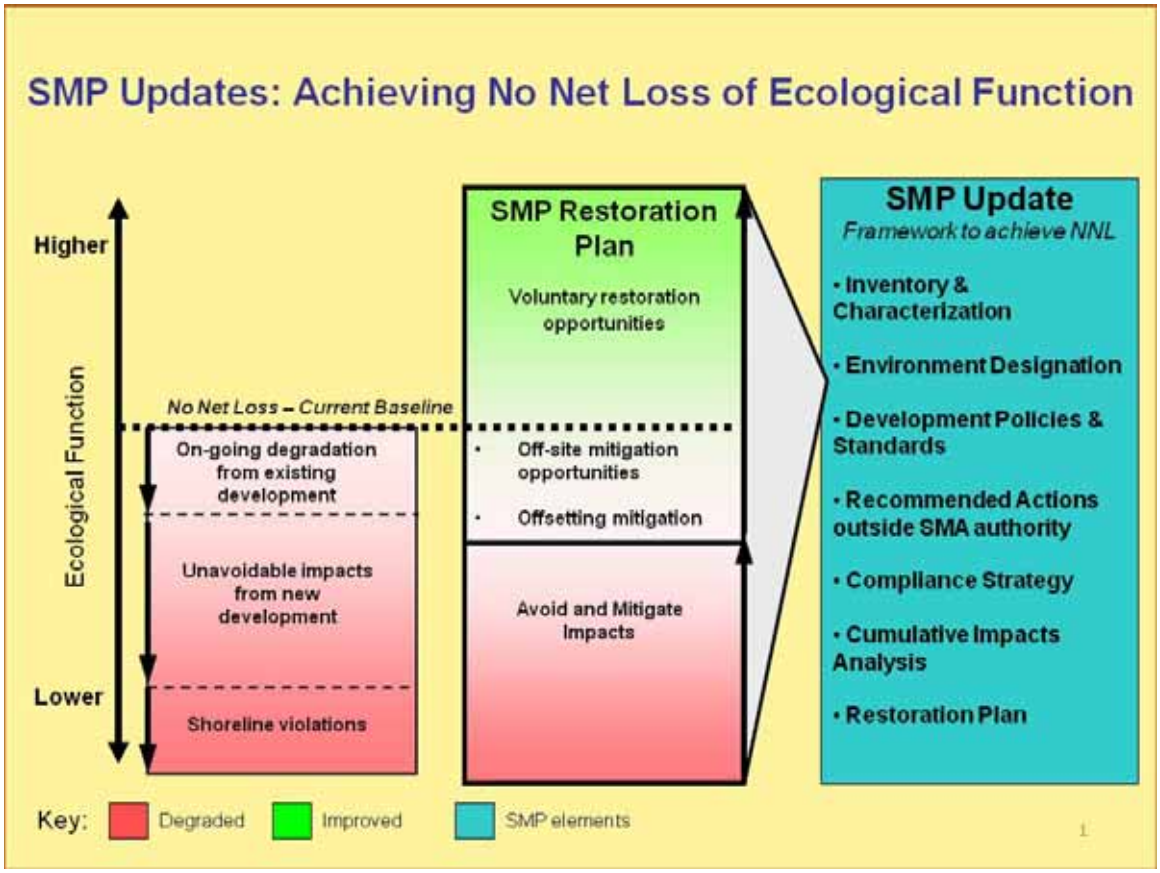
In short, updated SMPs shall contain goals, policies and regulations that prevent degradation of ecological functions relative to the existing conditions as documented in that jurisdiction's characterization and analysis report. For those projects that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the baseline. This is illustrated in Exhibit 1 below. The jurisdiction must be able to demonstrate that it has accomplished that goal through an

analysis of cumulative impacts that might occur through implementation of the updated SMP. Evaluation of such cumulative impacts should consider:

(i) current circumstances affecting the shorelines and relevant natural processes;

(ii) reasonably foreseeable future development and use of the shoreline; and

(iii) beneficial effects of any established regulatory programs under other local, state, and federal laws."



Source: Department of Ecology

Exhibit 1. Department of Ecology Illustration to Achieve "no net loss"

As outlined in the Shoreline Restoration Plan prepared as part of this SMP update, the SMA also seeks to restore ecological functions in degraded shorelines. This cannot be required by the SMP at a project level, but Section 173-26-201(2)(f) of the Guidelines says: "master programs shall include goals and policies that provide for restoration of such impaired ecological functions." See the Shoreline Restoration Plan for additional discussion of SMP policies and other programs and activities in Kirkland that contribute to the long-term restoration of ecological functions relative to the baseline condition.

The following information and analysis provided in this report provides an overview by proposed environment designation of existing conditions, anticipated development, relevant Shoreline Master Program (SMP) and other regulatory provisions, and the expected net impact on ecological function.

2 EXISTING CONDITIONS

The following summary of existing conditions is based on the Final Shoreline Analysis Report (The Watershed Company 2006) and additional analysis needed to perform this assessment. This discussion has been divided by proposed shoreline environment designations. As shown in Figure 1 in Appendix A, these include Residential – L, Residential M/H, Urban Mixed, Urban Conservancy, Natural, and Aquatic designations. The Shoreline Analysis Report includes an in-depth discussion of the topics below, as well as information about transportation, stormwater and wastewater utilities, impervious surfaces, and historical/archaeological sites, among others.

As shown in Table 1, nearly 40 percent of the City's shoreline frontage and 60 percent of the City's total shoreline area is designated Natural or Urban Conservancy, the designations assigned to those lands that have higher levels of ecological function and the lower levels of existing and allowed alteration. The majority of the City's shoreline development is concentrated in the remaining 60 percent of the shoreline frontage and 40 percent of the shoreline area, in areas that generally have lower level of ecological function as a result of that development.

Table 1. Length of Shoreline Frontage and Shoreline Area by Environment Designation

Environment Designation	Waterfront Length	Percent of Total Shoreline Frontage	Area in Shoreline Jurisdiction	Percent of Total Shoreline Area
Natural (N)	8,312 Feet (1.57 Miles)	26%	143 acres	60%
Urban Conservancy (UC)	4,514 Feet (0.85 Miles)	14%	18 acres	7%
Residential – Low (R-L)	8,123 Feet (1.54 Miles)	25%	31 acres	13%
Residential – Medium/High (R-M/H)	6,204 Feet (1.18 Miles)	19%	30 acres	12%
Urban Mixed (UM)	5,043 Feet (0.96 Miles)	16%	24 acres	10%
TOTAL	**32,196 Feet (6.1 Miles)**	**100%**	**245**	**100%**

2.1 Residential – L Environment

Approximately 13 percent of the City's upland shoreline jurisdiction is in the Residential – L environment. Results from Kirkland's Shoreline Analysis Report (The Watershed Company 2006) show that the majority of the Residential – L environment contains Medium functioning shoreline. Two small areas of Residential – L environment are located along Lake Washington Boulevard, in an area rated as Low functioning. These shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.1.1 Existing Land Use

The shoreline within the Residential – L environment is exclusively single-family residential. In general, the land area designated as Residential – L is fully developed, containing approximately 35 percent impervious surface. Expansion, redevelopment or alteration to existing single-family units will occur over time. Out of 117 existing lots, 97 of which abut the shoreline, 54 (roughly 56% percent of waterfront lots) are considered to have strong redevelopment potential. Redevelopment potential was based on assumptions made for each lot related to age of the home and the ratio of improvement value to land value. Since single-family residences are considered to be a preferred use along the shoreline, very few conflicts are anticipated.

The existing median residential structure setback in the Residential – L environment is approximately 43 feet from the ordinary high water mark (OHWM). However, the median distance from the OHWM to improvements (either paved surfaces or other accessory structures) is approximately 36 feet. Table 2 presents data on existing residential structure setbacks on parcels within the Residential – L environment. As Table 2 shows, 23 (24%) of the 97 waterfront parcels have residential structures located less than 30 feet (non-conforming structures) from the OHWM. Of the remaining developed lots, 53 (55%) have residential structures between 30 and 60 feet from OHWM, and 22 (23%) have residential structures greater than 60 feet from the OHWM.

Table 2. Existing shoreline residential structure setback data for the Residential – L environment.

Measure of residential structure setback	Number of Waterfront Parcels
Total Waterfront Parcels	**97**
Structures < 30 ft from OHWM	23
Structures 30 - 60 ft. from OHWM	53
Structures > 60 ft. from OHWM	22

In general, setbacks ranged widely from essentially 0 feet to 232 feet. Setbacks at individual properties seem to be based on several factors, including local topography, lot depth (see Exhibit 2), and location of the sewer line. A cluster of very shallow lots corresponding to very small existing structure setbacks is located south of the Heritage Park street end to just north of Marina Park.

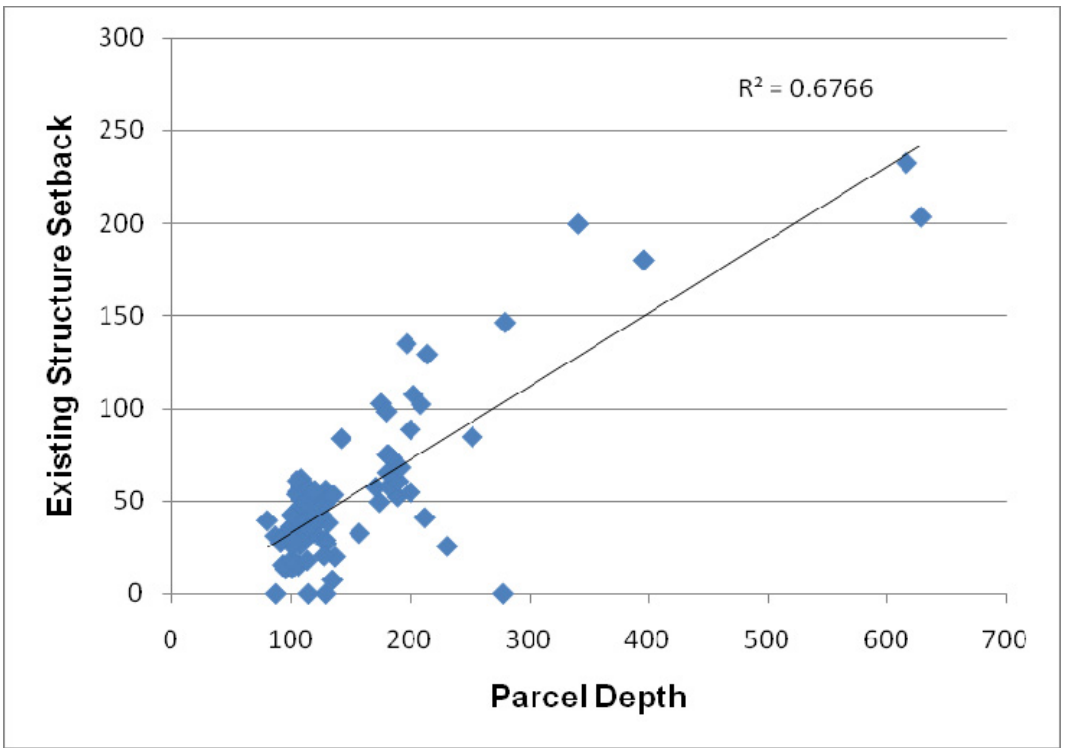


Exhibit 2. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Low Shoreline Environment.

2.1.2 Parks and Open Space/Public Access

There are no formal public parks or open spaces within the Residential – L environment.

2.1.3 Shoreline Modifications

The Residential – L environment is heavily modified with just over 88 percent of the shoreline armored at or near the OHWM (Table 3) (see Figures 7a-7e in the Shoreline Analysis Report) and a pier density of approximately 56 piers per mile (Table 4). This compares to 71 percent armored and 36 piers per mile for the entire Lake Washington shoreline (Toft 2001). Thus, for Kirkland's Residential – L environment, pier density and shoreline armoring are much higher than the lake-wide figures.

Table 3. Shoreline armoring in the Residential – L environment.

Shoreline Condition (feet / % of shoreline)	
Armored[1]	**Natural / Semi-Natural[2]**
7,148 (88%)	975 (12%)

1 "Armored" shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.

2 "Natural/Semi-Natural" shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 4. In-water structures in the Residential – L environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square feet)
90	56	73,947

It is not uncommon around Lake Washington for some historic fills to be associated with the original bulkhead construction, usually to create a more level or larger yard. Most of these shoreline fills occurred at the time that the lake elevation was lowered during construction of the Hiram Chittenden Locks.

2.2 Residential – M/H Environment

Approximately 12 percent of the City's upland shoreline jurisdiction is in the Residential – M/H environment. Results from Kirkland's Shoreline Analysis Report (The Watershed Company 2006) show that the majority of the Residential – M/H environment contains Low functioning shoreline. However, one small area of Residential – M/H environment is located just west of Juanita Beach Park, in an area rated as High functioning. A second area of Residential – M/H environment is located just north of Marina Park, in an area rated as Medium functioning. These shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.2.1 Existing Land Use

The shoreline within the Residential – M/H environment is comprised of both single- and multi-family residential uses. In general, the land area is fully developed, containing approximately 54 percent impervious surface. Out of 56 existing waterfront lots, 20 (roughly 36% percent, includes X vacant lots) are considered to have strong redevelopment potential. Redevelopment potential was based on assumptions made for

each lot related to age of the home and the ratio of improvement value to land value. Expansion (of structure size as well as number of multi-family dwelling units), redevelopment or alteration to existing developments will occur over time, but the majority of this environment will remain functionally unchanged.

The existing median residential structure setback in the Residential – M/H environment is approximately 24 feet from the ordinary high water mark (OHWM). However, the median distance from the OHWM to improvements (either paved surfaces or other accessory structures) is approximately 15 feet. Table 5 presents data on existing residential structure setbacks on parcels within the Residential – M/H environment. As Table 5 shows, 28 (50%) of the 56 waterfront parcels have residential structures located less than 25 feet from the OHWM. Of the remaining developed lots, 15 (27%) have residential structures between 25 and 40 feet from OHWM, and 13 (23%) have residential structures greater than 40 feet from OHWM.

Table 5. Existing shoreline residential structure setback data for the Residential – M/H environment.

Measure of residential structure setback	Number of Waterfront Parcels
Total Waterfront Parcels	**56**
Structures < 25 ft from OHWM	28
Structures 25 - 40 ft. from OHWM	15
Structures > 40 ft. from OHWM	13

In general, setbacks ranged widely from essentially 0 feet to 134 feet. Similar to the Residential – L environment, setbacks at individual properties seem to be based on several factors, including lot depth (see Exhibit 3) and location of the sewer line. However, the correlation is not as strong. This is likely because most of the existing multi-family developments attempt to maximize number of units on a given parcel, making it a higher priority to push the development closer to the water.

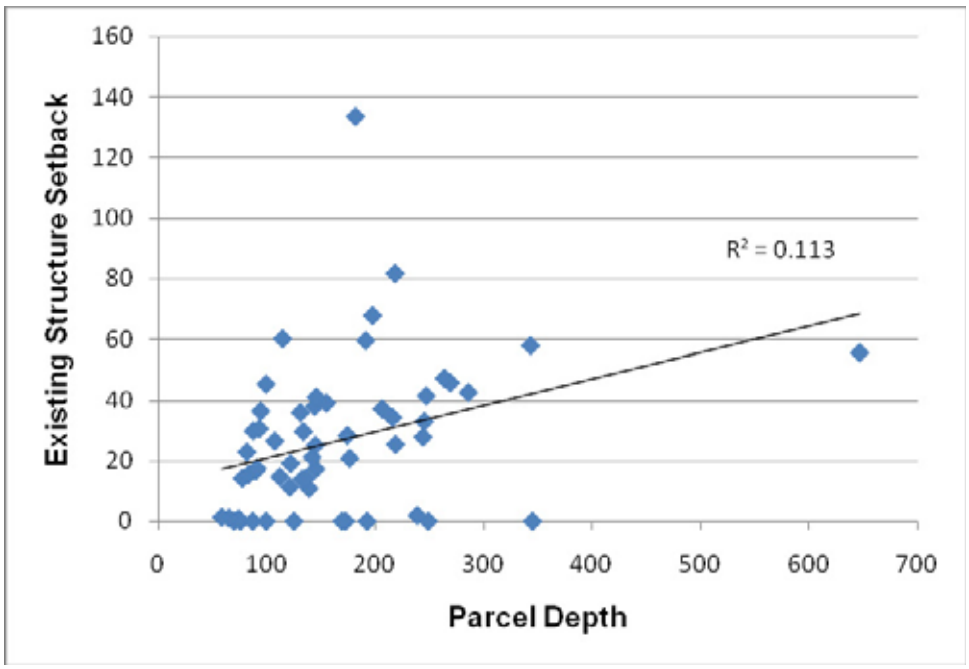


Exhibit 3. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Medium/High Shoreline Environment.

2.2.2 Parks and Open Space/Public Access

There are no formal public parks or open spaces within the Residential – M/H environment.

2.2.3 Shoreline Modifications

The Residential – M/H environment is heavily modified with just over 89 percent of the shoreline armored at or near the OHWM (Table 6) (see Figures 7a-7e in the Shoreline Analysis Report) and a pier density of approximately 42 piers per mile (Table 7). This compares to 71 percent armored and 36 piers per mile for the entire Lake Washington shoreline (Toft 2001). Thus, for Kirkland's Residential – M/H environment, pier density and shoreline armoring are both higher than the lake-wide figures, although pier density is lower than the Residential –L environment.

Table 6. Shoreline armoring in the Residential – M/H environment.

Shoreline Condition (feet / % of shoreline)	
Armored[1]	**Natural / Semi-Natural[2]**
5,522 (89%)	682 (11%)

[1] "Armored" shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.

[2] "Natural/Semi-Natural" shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 7. In-water structures in the Residential – M/H environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square feet)
49	42	145,571

2.3 Urban Conservancy

Approximately 7 percent of the City's shoreline jurisdiction is in the Urban Conservancy environment. Results from Kirkland's Shoreline Analysis Report (The Watershed Company 2006) show that the Urban Conservancy environment contains areas rated at all three levels of shoreline ecological function (low, medium, and high). The area just west of the Juanita Beach Park swimming beach is rated as High. Kiwanis Park, Waverly Park, and the Lave Avenue West Street-end Park are each rated as Medium. Finally, the parks/open spaces located south of Marina Park and north of the Yarrow Bay Wetlands are rated as Low. These shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.3.1 Existing Land Use

The Urban Conservancy environment is comprised entirely of City-owned parks and street-ends designated as Park/Open Space per the City's Comprehensive Plan. The land area contains approximately 23 percent impervious surface. The existing median primary structure setback in the Urban Conservancy environment is 31 feet, and the mean is 37 feet.

2.3.2 Parks and Open Space/Public Access

The City parks listed below provide public access to Lake Washington, as well as provide opportunities for water-dependent, water-related, and water-enjoyment recreational uses.

- Houghton Beach Park
- Marsh Park
- Settler's Landing
- David Brink Park
- Street-end Park
- Lake Avenue West Street-end Park

- Kiwanis Park
- Waverly Beach Park
- Juanita Beach Park

The western portion of Juanita Beach Park is designated as Urban Conservancy. However, the heavily used beach area is designated as Urban Mixed (see below).

2.3.3 Shoreline Modifications

The Kirkland shoreline in the Urban Conservancy environment has been modified with approximately 60 percent of the shoreline armored (Table 8) (see Figures 7a -7e in the Shoreline Analysis Report) at or near the OHWM and a total of approximately 7 piers per mile (Table 9). As expected, pier density and shoreline armoring along Kirkland's Urban Conservancy environment is significantly lower than the lake-wide figures. However, shoreline armoring is slightly higher than the lake-wide average of 71 percent.

Table 8. Shoreline armoring in the Urban Conservancy environment.

Shoreline Condition (feet / % of shoreline)	
Armored[1]	Natural / Semi-Natural[2]
2,183 (74%)	769 (26%)

1 "Armored" shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.

2 "Natural/Semi-Natural" shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 9. In-water structures in the Urban Conservancy environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square feet)
18	24	23,206

2.4 Urban Mixed

Approximately 10 percent of the City's upland shoreline jurisdiction is in the Urban Mixed environment. Results from Kirkland's Shoreline Analysis Report (The Watershed Company 2006) show that the majority of the Urban Mixed environment contains Low functioning shoreline. However, the majority of Juanita Beach Park and the adjoining multi-family uses to the east are included in an area rated as High functioning. These

shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.4.1 Existing Land Use

The shoreline within the Urban Mixed environment is comprised of a variety of uses including park/open space, residential, and commercial. In general, the land area is fully developed, containing approximately 56 percent impervious surface. Out of 13 existing waterfront lots, only two (roughly 15% percent, no vacant lots) are considered to have strong redevelopment potential. Expansion, redevelopment or alteration, including addition of office and retail units, will occur over time, but the majority of this environment will functionally remain unchanged.

The existing median primary structure setback in the Urban Mixed environment is 28 feet from the ordinary high water mark (OHWM). However, the median distance from the OHWM to improvements (either paved surfaces or other accessory structures) is approximately 11 feet. Table 10 presents data on existing residential structure setbacks on parcels within the Urban Mixed environment. As Table 10 shows, 4 (31%) of the 13 waterfront parcels have primary structures located less than 25 feet from the OHWM. Of the remaining developed lots, 5 (38%) have primary structures between 25 and 40 feet from OHWM, and 4 (31%) have primary structures greater than 40 feet from OHWM.

Table 10. Existing shoreline residential structure setback data for the Urban Mixed environment.

Measure of residential structure setback	Number of Waterfront Parcels
Total Waterfront Parcels	**13**
Structures < 25 ft from OHWM	4
Structures 25 - 40 ft. from OHWM	5
Structures > 40 ft from OHWM	4

2.4.2 Parks and Open Space/Public Access

Both Marina Park, located in downtown Kirkland, and the swimming beach at Juanita Beach Park are designated as Urban Mixed.

2.4.3 Shoreline Modifications

The Urban Mixed environment is heavily modified with just over 80 percent of the shoreline armored at or near the OHWM (Table 11) (see Figures 7a-7e in the Shoreline Analysis Report) and a pier density of approximately 14 piers per mile (Table 12). Thus, for Kirkland's Urban Mixed environment, pier density is lower but shoreline armoring is higher than the lake-wide figures.

Table 11. Shoreline armoring in the Urban Mixed environment.

Shoreline Condition (feet / % of shoreline)	
Armored[1]	Natural / Semi-Natural[2]
4,034 (80%)	1,009 (20%)

1 "Armored" shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.

2 "Natural/Semi-Natural" shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 12. In-water structures in the Urban Mixed environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square feet)
13	14	157,824

2.5 Natural Environment

Approximately 58 percent of the City's upland shoreline jurisdiction is in the Natural environment. These areas all rate as High for existing shoreline ecological function (The Watershed Company 2006).

2.5.1 Existing Land Use

The shoreline within the Natural environment is entirely park/open space with no existing development, containing only 1 percent impervious surface. There are a number of existing, undeveloped lots located within this environment. Out of XX existing lots, only XX (roughly X% percent) are considered vacant or undeveloped. However, only XX have the potential for development or subdivision due to critical area restrictions.

2.5.2 Parks and Open Space/Public Access

Yarrow Bay Park, Juanita Bay Park and their associated wetlands are designated as Natural.

2.5.3 Shoreline Modifications

The Natural environment contains no shoreline armoring at or near the OHWM (see Figures 7a-7e in the Shoreline Analysis Report) and a very low pier density of approximately 1 pier per mile. Two piers are located within Juanita Bay Park. Thus, as expected, pier density and shoreline armoring within Kirkland's Natural environment are both extremely low compared to the lake-wide figures.

2.6 Aquatic Environment

The Aquatic environment encompasses all areas waterward of the ordinary high water mark of Lake Washington contained within the City limits. The purpose of this designation is to protect, restore, and manage the unique characteristics and resources of the areas waterward of the ordinary high water mark. Regulations and performance standards that apply to individual uses and developments are evaluated under the above designations and uses.

2.7 Biological Resources and Critical Areas

With the exception of the wetlands and shoreline areas within and adjacent to Yarrow Bay and Juanita Bay, Kirkland's shoreline zone itself is generally deficient in high-quality biological resources and critical areas, primarily because of the extensive residential and commercial development and their associated shoreline modifications. Outside of the shoreline associated wetlands, the highest functioning shoreline areas are primarily along city-owned parks and open spaces. Although not specifically separated as a distinct unit during the shoreline inventory, Kiwanis Park represents the highest quality City-owned shoreline, in terms of existing ecological functions, not including the Yarrow Bay and Juanita Bay wetland areas. Many of the parks in both the Urban Conservancy and Urban Mixed environment have the potential for the improvement of ecological functions.

There are a number of streams along the Kirkland shoreline that discharge into Lake Washington. Several, including Juanita Creek, Forbes Creek, Carillon Creek, and Yarrow Creek, are known to support fish use. Adult salmon have been documented in each of these creeks. Many of the smaller tributaries to Lake Washington, including streams that flow seasonally or during periods of heavy rains, are piped at some point and discharge directly to Lake Washington via a closed system.

3 Anticipated Development and Potential Effect on Function

3.1 Patterns of Shoreline Activity

The City reviewed its shoreline permitting records for the 16 years between 1991 and 2006 (Table 13). Several projects had multiple components and obtained multiple permits; the available permit summary did not consistently indicate which permit type was granted so there are a number of "unknowns." This summary likely underestimates shoreline activity, as shoreline exemptions were not tracked.

Table 13. Shoreline Permit History in the City of Kirkland Since 1991.

Year	# of Cases	Pier		Bulkhead Mod.	Upland Structure	Upland Park Mod.	Utilities	Permit Type			
		Extension/ Mod.	New/ Replacement					SDP	SCUP	Variance	Unknown
1991	1				1					1	
1992	5	2	1	1	1	1	1	4	1	1	1
1993	4		3		1			3		1	
1994	3	1	1	1	1			1	1		1
1995	9	1	1		4	1	2	4			5
1996	4		2	1	1		1	2		1	1
1997	4	2			1		1	4			
1998	5	1	1	1	4			3		3	1
1999	6	1	4		1			4		1	1
2000	4	1	1		1		1	2			2
2001	3				3					1	2
2002	2				1		1			1	1
2003	2				2						2
2004	5		2		2		1	3			2
2005	4	1	1	1		1		1			3
2006	3	3			1			1			
TOTAL	**64**	**13**	**17**	**5**	**25**	**3**	**8**	**32**	**2**	**9**	**22**

SDP = Shoreline Substantial Development, SCUP = Shoreline Conditional Use Permit

No trends in shoreline activity or permit type are apparent. Over the past 16 years, 26 percent of permitted shoreline projects included a new or replacement pier component, 20 percent a pier extension or modification component, 8 percent a bulkhead modification component, 39 percent an upland structure component (for new commercial or residential construction, setback variances, etc.), 13 percent a utilities component (sewer lines, sewer lift stations, storm drain outfall dredging, etc.), and 5 percent a parks component (trails, hard landscape elements, benches, etc.). Case notes indicate that pier proposals began to include impact minimization measures, such as deck grating and narrow walkways, prescribed by state and federal agencies in 2000. Although not indicated, it is likely that several of the 1999 pier proposals included minimization measures as well, consistent with the listing of chinook salmon and bull trout as Threatened under the federal Endangered Species Act in 1999.

As indicated by the data presented above, new or replacement piers are very infrequent, averaging less than two proposals per year. Pier extensions or modifications are even less common. Bulkhead modifications are also extremely low, with only 5 applications during the 16 year review period.

Based on the above permit history and existing conditions, the following level of shoreline activity is anticipated or possible over the next 20 years. This includes:

- New piers 20
  (based on the number of properties that do not currently have a pier, and are likely to add a pier in the next 20 years)

- Replacement Piers..... 25
  (approximately 15 percent of the total number of structures)

- Modified Piers 20
  (approximately 9 percent of the total number of structures, based on permit history trend)

- Modified Bulkheads ... 6 (residential, assume ~360 linear feet)

3.2 Residential Development

With the possible exception of limited additional residential lands being acquired for public open space (in the Natural environment of Yarrow Bay wetland complex), residential uses are limited to the Residential –L and Residential – M/H environments. While the single-family nature of Residential – L is not expected to change over the next 20 years, the mix of single- and multi-family developments may change in the Residential – M/H environment. On the whole, a substantial amount of re-builds and remodels are anticipated in both environments.

Typically, development of vacant lots into residential uses would result in replacement of pervious, vegetated areas with impervious surfaces and a landscape management regime that often includes chemical treatments of lawn and landscaping along with increased exterior lighting. These actions can have multiple effects on shoreline ecological functions, including:

1. Increase in surface water runoff due to reduced infiltration area and increased impervious surfaces, which can lead to excessive soil erosion and subsequent in-lake sediment deposition. This can affect the following:
   Hydrologic Functions
   Storing water and sediment

2. Reduction in ability of site to improve quality of waters passing through the untreated vegetation and healthy soils. This can affect the following:
   Hydrologic Functions
   Removing excess nutrients and toxic compounds

   Vegetation Functions
   Water quality improvement

3. Potential contamination of surface water from chemical and nutrient applications. This can affect the following:
   Vegetation Functions
   Water quality improvement
4. Elimination of upland habitat occupied by wildlife that use riparian areas. This can affect the following:
   Habitat Functions
   Physical space and conditions for life history
   Food production and delivery
5. Lighting is known to affect both fish and wildlife in nearshore areas. This can affect the following:
   Habitat Functions
   Physical space and conditions for life history

Expansions and remodels of existing residences are likely to occur relatively frequently during the future. Many of these activities would not change the baseline condition of ecological function, although expansions that increase impervious surfaces may occur. Runoff from most expanded residences is clean, however, and water quantity is not an issue in the Lake Washington environment. Improperly managed runoff during and post construction could increase erosion, and could cause sediments and pollutants to enter the lake.

As mentioned above, the existing median setback in the Residential – L environment is 43 feet. The SMP proposes a residential setback of 30 percent of the proposed lot depth, with a 30-foot minimum and a 60-foot maximum, except for an area along Lake Avenue West south of the Lake Avenue West street end park. The latter area would have a setback based on the average of the adjacent properties, but no less than 15 feet. Based on the City's analysis of redevelopment potential, the resultant median setback in the Residential – L environment would be approximately 36 feet. This reduction in the median setback results in a conversion of a maximum of 1.79 acres of space between the primary structure and the OHWM to a greater level of development.

The existing median setback in the Residential – M/H environment is 24 feet. The SMP proposes a residential setback of 15 percent of the proposed lot depth, with a 25-foot minimum. Based on the City's analysis of redevelopment potential, the resultant median setback in the Residential – M/H environment would be approximately 25 feet, with the average dropping from 27 to 21 feet. This reduction in the median setback results in a conversion of a maximum of 0.74 acres of space between the primary structure and the OHWM to a greater level of development.

These conversion numbers are likely an overestimate, both in area and assumed corresponding function, as primary structures are never as wide as the lot. It also does not factor in that much of that "lost" space is already occupied by decks, paved surfaces,

lawn or other improvements that have reduced or eliminated the function of that space. Finally, because of the staggered distribution of lot depths and primary structure locations, some of that space landward of a primary structure currently set back far from the water's edge may be greatly impacted by activities on shallower adjacent lots where the structure is located closer to the water's edge.

However, that space, while perhaps not providing direct habitat to fish and wildlife species, did provide attenuation of exterior and interior lighting with respect to illumination of the water and immediately adjacent shorelands (Rich and Longcore 2006; Rich and Longcore 2004; Mazur and Beauchamp 2006). To offset the reduction in lighting attenuation, the SMP includes provisions in SMP 83.440.4 regarding lighting shielding, direction, levels, height, and other standards.

To address the other less direct losses to shoreline function resulting from reduction in the space between primary structures and their attendant activities and the water's edge, the SMP contains a native landscape standard in SMP 83.370 (Shoreline Vegetation Management) that requires native plantings, including trees, in at least 75 percent of the nearshore riparian area located along the water's edge, an average of 10 feet wide in Residential – L and 15 feet wide in Residential – M/H. When a development proposal includes an increase of at least 10 percent in gross floor area of any structure located in shoreline jurisdiction or an alteration to any structure(s) in shoreline jurisdiction, the cost of which exceeds 50 percent of the replacement cost of the structure(s), the development must come into conformity with the landscape standard. Based on the anticipated level of redevelopment, approximately 0.85 acre of native vegetation, including trees, will be installed along the water's edge.

Although it is difficult to estimate how many property owners might take advantage of different buffer reduction options, those that do will be required to implement one or more additional ecological function improvements on the site. The amount of reduction allowed for a given improvement is at least proportional to the amount of function lost by allowing the reduction. Further, several of the improvements, such as shoreline armoring removal, would have positive effects on shoreline processes, not just improvements in function.

3.3 Overwater Structures

Overwater structures encompass a variety of uses, from in-water structures, such as fixed-pile piers and floating docks, to moorage covers, such as canopies and boathouses with associated boatlifts. It is difficult to determine exactly how many waterfront properties do not have a pier or pier access, particularly as many piers are located near property lines and thus it is possible that those may be shared with the adjacent property. Table 13 provides some indication of the potential for new piers.

Table 13. Shoreline Permit History in the City of Kirkland Since 1991.

Shoreline Environment	# of Lots with Pier(s)	# of Lots without Pier(s)	Probable New Piers
Residential – L	90 (with approximately 2 existing joint piers)	9 (including three waterfront street ends)	6
Residential – M/H	45 (with approximately 3 existing joint piers)	11 (including one waterfront street end)	10
Urban Mixed	10 (includes public piers)	3	3
Urban Conservancy	5 (at park, rather than a single lot and includes public piers)	2 (including community-owned property near Juanita Beach)	1
			20

Piers can adversely affect ecological functions and habitat in the following ways:

1. Alter patterns of natural light transmission to the water column, affecting macrophyte growth and altering habitat for and behavior of aquatic organisms, including juvenile salmon. This can affect the following:
   Habitat Functions
   Physical space and conditions for life history
   Food production and delivery

2. Interfere with long-shore movement of sediments, altering substrate composition and development. This can affect the following:
   Hydrologic Functions
   Attenuating wave energy

3. Contribute to contamination of surface water from chemical treatments of structural materials. This can affect the following:
   Hydrologic Functions
   Removing excess nutrients and toxic compounds

4. Pier lighting is known to affect fish movement and predation. This can affect the following:
   Habitat Functions
   Physical space and conditions for life

In total, it is estimated that approximately 20 waterfront properties have the potential to add a new pier. Given the current rate of new pier proposals, it could take 20 years or more for all of the non-pier properties to apply for and obtain permits. If all of these properties add a pier, that would represent a 12 percent increase in the total number of piers, with a final density of 30 piers per mile.

Under the proposed SMP, new piers will be smaller and narrower than piers approved under the original SMP. New and replacement piers will also include light-transmitting decking material, which will reduce the impact of the overwater cover. Nevertheless, if new piers were the only pier-related activity, ecological function would still decline. The decline would be due to an unavoidable net increase in in-water structures and overwater cover that can be minimized but not entirely mitigated.

However, pier repair and pier maintenance activities are more common, and it is anticipated that pier replacement proposals may become even more common as existing piers degrade or do not meet the property owner's needs in their current configuration or location. Under the proposed SMP, replacement piers are considered new moorage structures and must meet the dimensional criteria for new private piers or be otherwise approved by State and Federal agencies (Washington Department of Fish and Wildlife and the U.S. Army Corps of Engineers) (KZC 83.280.6). Any pier repair which involves the replacement of more than 60 percent of the pier support piles along with pier decking or sub-structure over a five year period must also meet the dimensional criteria of new private piers. Pier repairs (KZC 83.280.8) would include decking and/or sub-structure replacement and up to 60 percent pile replacement. Repairs which involve full deck replacement must install grated surfaces within the nearshore 30 feet.

The combined effects of the City's proposed SMP will likely result in a reduction over time of the net amount of overwater coverage for private piers in the Residential – L environment, and an increase in the amount of light-transmitting decking.

A quantitative analysis is provided below (Table 14), based partially on City trends and assumptions. This analysis assumes that 20 of the 25 existing properties without piers will add piers within the next 20 years (Table 14). Also assumed is that 15 percent of all existing piers will need replacement over the same time period. Assuming that all new and replacement pier structures will be fully grated and that replacement pier structures must comply with new pier standards or be State/Federal approved, the total area of overwater structure may decline/increase by XX percent over this time period.

Table 14. Comparison of build-out conditions for overwater structures.

Pier Feature	Existing	Build-Out	Net Change	% Change
Number of Piers	166	186	+20	+12
Total square footage of overwater structures (ft^2)	395,440	XX	XXXXX	+/-X

Assumes that 20 of 25 existing properties without piers will construct a new pier over the next 20 years.
Assumes 20 new piers (X at 480 ft^2 and X at XXX ft^2) and 15 percent replacement of existing piers over 20 years (assumes replacement piers to be replaced at XXX ft^2 average).
Assumes new and replacement piers are fully grated

3.4 Shoreline Stabilization

Bulkheads typically have the following effects on ecological functions:

1. Reduction in nearshore habitat quality for juvenile salmonids and other aquatic organisms. Specifically, shoreline complexity and emergent vegetation that provides forage and cover may be reduced or eliminated. Elimination of shallow-water habitat may also increase vulnerability of juvenile salmonids to aquatic predators. This can affect the following:

   Habitat Functions
   Physical space and conditions for life history
   Food production and delivery

2. Reduction of natural sediment recruitment from the shoreline. This recruitment is necessary to replenish substrate and preserve shallow water conditions. This can affect the following:

   Habitat Functions
   Physical space and conditions for life history

3. Increase in wave energy at the shoreline if shallow water is eliminated, resulting in increased nearshore turbulence that can be disruptive to juvenile fish and other organisms. This can affect the following:

   Hydrologic Functions
   Attenuating wave energy

   Habitat Functions
   Physical space and conditions for life history

Repairs and replacements of existing bulkheads perpetuate those conditions. There have been no new bulkhead permit applications, and only five bulkhead modification permits issued in the last 16 years. Future proposals are likely to be bulkhead repairs and replacements rather than new bulkheads.

The updated SMP states that new shoreline stabilization would only be allowed when "conclusive evidence, documented by a geotechnical analysis, is provided that the structure is in danger from shoreline erosion caused by waves…" It must be demonstrated in a study prepared by a qualified professional that the proposed stabilization is the least harmful method to the environment. Replacement bulkheads must be installed in the same location as the existing bulkhead, or farther landward, and must also demonstrate some level of need for a hardened shoreline stabilization measure. Under no circumstances would a replacement bulkhead be allowed to encroach farther waterward. Finally, all shoreline stabilization and modification proposals must avoid impacts to the maximum extent practicable; use the "softest" stabilization approach feasible; and, when impacts are unavoidable, mitigate those impacts to achieve no net loss of ecological functions. Independent of regulations by

other regulatory agencies, the proposed SMP ensures that shoreline stabilization projects will not degrade the baseline condition. Further, the proposed SMP includes incentives for the removal or function enhancement of existing bulkheads in exchange for buffer reduction.

Over time, the combined effects of the City's proposed SMP will likely result in a reduction over time of the net amount of hardened shoreline at the ordinary high water mark and an increase in shallow-water habitat.

4 PROTECTIVE SMP PROVISIONS

4.1 Environment Designations

The first line of protection of the City's shorelines is the environment designation assignments. The Natural environment is the most restrictive, but closely followed by the Urban Conservancy environments. In some respects, the Residential – L, Residential – M/H and Urban Mixed environments are as, or more, restrictive than the other two environments.

Table 15 below identifies the prohibited and allowed uses and modifications in each of the shoreline environments, and clearly shows a hierarchy of higher-impacting uses and modifications being allowed in the already highly altered shoreline environments. This strategy helps to minimize cumulative impacts by concentrating development activity in lower functioning areas that are not likely to experience function degradation with incremental increases in new development.

Table 15. Shoreline Use and Activities Matrix

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
SHORELINE USE						
Resource Land Uses						
Agriculture	X	X	X	X	X	X
Aquaculture	X	X	X	X	X	X
Forest practices	X	X	X	X	X	X
Mining	X	X	X	X	X	X
Commercial Uses						
Water-dependent uses						
Float plane landing and mooring facilities[1]	X	X	X	X	CU	See adjacent upland environments
Water-related, water-enjoyment commercial uses						
Any water-oriented Retail Establishment other than those specifically listed in this chart, selling goods or providing services.	X	SD[2]	X	X	SD	X
Retail Establishment providing new or used Boat Sales or Rental	X	SD[2]	X	CU[3,5]	SD[4]	See adjacent upland environments

[1] Limited to water-based aircraft facilities for air charter operations.
[2] Permitted as an accessory use to a Public Park.
[3] Permitted if located on the west side of Lake Washington Lake Blvd NE/Lake St S south of Lake Avenue West and north of NE 52nd Street.
[4] Permitted in the Juanita Business District or as an accessory use to a marina.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Retail establishment providing gas and oil sale for boats	X	X	X	CU[3,5]	CU[5]	See adjacent upland environments
Retail establishment providing boat and motor repair and service	X	X	X	CU[3,5]	CU[5]	X
Restaurant or Tavern[6]	X	X	X	CU[3]	SD	X
Concession Stand	X	SD[2]	X	X	SD[2]	X
Entertainment or cultural facility	X	CU[7]	X	X	SD	X
Hotel or Motel	X	X	X	CU[8]/X	SD	X
Nonwater-oriented, nonwater-dependent uses						
Any Retail Establishment other than those specifically listed in this chart, selling goods, or providing services including banking and related services	X	X	X	X	SD[9]	X
Office Uses	X	X	X	X	SD[9]	X
Neighborhood-oriented Retail Establishment	X	X	X	CU[10]	SD[9]	X
Private Lodge or Club	X	X	X	X	SD[9]	X
Vehicle Service Station	X	X	X	X	X	X

[5] Accessory to a marina only.
[6] Drive-in or drive-through facilities are prohibited.
[7] Use must be open to the general public.
[8] Permitted in Planned Area 3B established in the Lakeview Neighborhood Plan only.
[9] Permitted as part of mixed-use development containing water-oriented uses, where there is intervening development between the shoreline and the use, or if located on the east side of Lake Washington Blvd NE/Lake St S or the east side of 98th Avenue NE.
[10] Permitted if located on the east side of Lake Washington Blvd NE between NE 60th Street and 7th Ave S.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Automotive Service Center	X	X	X	X	X	X
Dry land boat storage	X	X	X	X	X	X
Industrial Uses						
Water-dependent uses	X	X	X	X	X	See adjacent upland environments
Water-related uses	X	X	X	X	X	X
Nonwater-oriented uses	X	X	X	X	X	X
Recreational Uses						
Water-dependent uses						
Marina[11]	X	CU	X	SD	SD	See adjacent upland environments
Piers, docks, boat lifts and canopies serving Detached Dwelling Unit[11]	X	X	SD	SD	SD[15]	
Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units [11]	X	X	X	SD	SD	
Float	X	SD[2]	X	X	SD[2]	
Tour Boat Facility	X	X	X	X	SD[12]	
Moorage buoy[11]	X	SD	SD	SD	SD	
Public Access Pier or Boardwalk	CU	SD	SD	SD	SD	
Boat launch (for motorized boats)	X	X	X	X	CU	
Boat launch (for non-motorized boats)	SD	SD	SD	SD	SD	

[11] No boat moored in or off the shoreline of Kirkland shall be used as a place of habitation.
[12] Permitted as an accessory use to a Marina or Public Park only.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Boat houses or other covered moorage not specifically listed	X	X	X	X	X	
Water-related, water-enjoyment uses						
Any water-oriented recreational development other than those specifically listed in this chart	X	CU	CU	CU	SD	X
Other Public Park Improvements[13]	CU	SD	SD	SD	SD	X
Public Access Facility	SD[14]	SD	SD	SD	SD	See adjacent upland environments
Nonwater-oriented uses						
Nonwater-oriented recreational development.	X	X	X	X	SD[9]	X
Residential Uses						
Detached dwelling unit	CU	CU	SD	SD	SD[15]	X
Accessory dwelling unit[16]	X	X	SD	SD	SD[15]	X
Detached, Attached or Stacked Dwelling Units	X	X	X	SD	SD	X
Houseboats	X	X	X	X	X	X
Assisted Living Facility[17]	X	X	X	CU	SD	X

[13] This use does not include other public recreational uses or facilities specifically listed in this chart
[14] Limited to trails, viewpoints, interpretative signage and similar passive and low-impact facilities.
[15] Permitted if located south of NE 60th Street only.
[16] One accessory dwelling unit (ADU) is permitted as subordinate to a single-family dwelling
[17] A nursing home use may be permitted as part of an assisted living facility use.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Convalescent Center or Nursing Home	X	X	X	CU[18]	SD[19]	X
Land division	SD[20]	SD[20]	SD	SD	SD	X
Institutional Uses						
Float plane landing and mooring facilities (public)	X	X	X	X	CU	See adjacent upland environments
Government Facility	X	SD	SD	SD	SD	X
Community Facility	X	X	X	X	SD	X
Church	X	X	X	CU[18]	SD[19]	X
School or Day-Care Center	X	X	X	CU[18]	SD[9]	X
Mini-School or Mini-Day-Care Center	X	X	X	SD[18]	SD[9]	X
Transportation						
Water-dependent						
Bridges	CU	CU	SD	SD	SD	See adjacent upland environments
Passenger-only Ferry terminal	X	X	X	X	CU	
Water Taxi	X	SD[21]	SD[21]	SD[21]	SD[21]	

[18] Permitted if located on the east side of Lake Washington Blvd NE/Lake St S, or the east side of 98th Avenue NE.
[19] Not permitted in the Central Business District. Otherwise, permitted if located on the east side of Lake Washington Blvd NE/Lake St S, the east side of 98th Avenue NE or on the south side of NE Juanita Drive.
[20] May not create any new lot that would be wholly contained within shoreland area in this shoreline environment.

[21] Permitted as an accessory use to a marina or a public park.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	**Natural**	**Urban Conservancy**	**Residential - L**	**Residential – M/H**	**Urban Mixed**	**Aquatic**
Nonwater-oriented						
Arterials, Collectors, and neighborhood access streets	CU	SD[22]/CU	SD	SD	SD	X
Helipad	X	X	X	X	X	X
Utilities						
Utility production and processing facilities	X	CU[23]	CU[23]	CU[23]	CU[23]	X
Utility transmission facilities	CU[23]	SD[23]	SD[23]	SD[23]	SD[23]	CU[23]
Personal Wireless Service Facilities[24]	X	SD	SD	SD	SD	X
Radio Towers	X	X	X	X	X	X
SHORELINE MODIFICATIONS						
Breakwaters/jetties/rock weirs/groins	X	X	X	SD[25]/CU	SD[25]/CU	See adjacent upland environments
Dredging and dredge materials disposal	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	
Fill waterward of the ordinary high water mark	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	SD[25]/CU	
Land surface modification	SD[25]/CU	SD	SD	SD	SD	
Shoreline habitat and natural systems enhancement projects	SD	SD	SD	SD	SD	
Hard Structural Shoreline Stabilization	X	CU	SD	SD	SD	
Soft Shoreline Stabilization Measures	X	SD	SD	SD	SD	

[22] Construction of pedestrian and bicycle facilities only.
[23] This use may be allowed provided there is no other feasible route or location.
[24] New towers are not permitted.
[25] Permitted under a substantial development permit when associated with a restoration or enhancement project.

4.2 General Goals, Policies and Regulations

The SMP contains numerous general policies, with supporting regulations (see SMP), intended to protect the ecological functions of the shoreline, prevent adverse cumulative impacts, and encourage restoration. Key policies substantially contributing to prevention of adverse cumulative impacts are summarized below.

- **Policy SMP-1.2**: Preserve and enhance the natural and aesthetic quality of important shoreline areas while allowing for reasonable development to meet the needs of the city and its residents.
- **Policy SMP-3.1**: Establish development regulations that avoid, minimize and mitigate impacts to the ecological functions associated with the shoreline zone.
- **Policy SMP-3.2**: Provide adequate setbacks and buffers from the water and ample open space and pervious areas to protect natural features and minimize use conflicts.
- **Policy SMP-3.3**: Require new development or redevelopment to include establishment or preservation of appropriate shoreline vegetation to contribute to the ecological functions of the shoreline area.
- **Policy SMP-3.4**: Incorporate low-impact development practices, where feasible, to reduce the amount of impervious surface area.
- **Policy SMP-3.5**: Limit parking within the shoreline area
- **Policy SMP-3.6**: Limit outdoor lighting levels in the shoreline to the minimum necessary for safe and effective use
- **Policy SMP-3.8**: Encourage the development of joint-use overwater structures, such as joint use piers, to reduce impacts to the shoreline environment
- **Policy SMP-3.9**: Allow variations to development standards that are compatible with surrounding development in order to facilitate restoration opportunities along the shoreline
- **Policy SMP-6.2:** Manage new subdivisions of land within the shoreline to:
    - Avoid the creation of new parcels with building sites that would impact wetlands, streams, slopes, frequently flooded areas and their associated buffers.
    - Ensure no net loss of ecological functions resulting from the division of land or build-out of the lots;
    - Prevent the need for new shoreline stabilization or flood risk measures that would cause significant impacts to other properties or public improvements or a net loss of shoreline ecological functions.
- **Policy SMP-6.4:** Evaluate new single-family development within areas impacted by critical areas to protect ecological functions and ensure some reasonable economic use for all property within Kirkland's shoreline
- **Policy SMP-10.1:** Assure that shoreline modifications individually and cumulatively do not result in a net loss of ecological functions

- **Policy SMP-10.2:** Limit fill waterward of the ordinary high water mark to support ecological restoration or to facilitate water-dependent or public access uses

5 EFFECT OF OTHER PROGRAMS

5.1 Washington Department of Fish and Wildlife

The Washington Department of Fish and Wildlife (WDFW) has jurisdiction over in- and over-water activities up to and including the ordinary high water mark, as well as any other activities that could "use, divert, obstruct, or change the bed or flow of state waters" (http://www.wdfw. wa.gov/hab/hpapage.htm). Practically speaking, these activities in the City of Kirkland include, but are not limited to, installation or modification of shoreline stabilization measures, piers and accessory structures such as boatlifts, culverts, and bridges and footbridges. These types of projects must obtain a Hydraulic Project Approval from WDFW, which will contain conditions intended to prevent damage to fish and other aquatic life, and their habitats. In some cases, the project may be denied if significant impacts would occur that could not be adequately mitigated.

5.2 Washington Department of Ecology

The Washington Department of Ecology may review and condition a variety of project types in Kirkland, including any project that needs a permit from the U.S. Army Corps of Engineers (see below), any project that requires a shoreline Conditional Use Permit or Shoreline Variance, and any project that disturbs more than 1 acre of land. Project types that may trigger Ecology involvement include pier and shoreline modification proposals and wetland or stream modification proposals, among others. Ecology's three primary goals are to: 1) prevent pollution, 2) clean up pollution, and 3) support sustainable communities and natural resources (http://www.ecy.wa.gov/about.html). Their authority comes from the State Shoreline Management Act, Section 401 of the Federal Clean Water Act, the Federal Water Pollution Control Act, the Federal Coastal Zone Management Act of 1972, the State Environmental Policy Act, the Growth Management Act, and various RCWs and WACs of the State of Washington.

5.3 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers has jurisdiction over any work in or over navigable waters (including Lake Washington) under Section 10 of the Federal Rivers and Harbors Act of 1899, and discharges of dredged or fill material into waters of the United States (including Lake Washington, streams, and non-isolated wetlands) under Section 404 of the Federal Clean Water Act.

As a federal agency, any activity within Corps jurisdiction that could affect species listed under the Federal Endangered Species Act must be consulted on with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. These agencies ensure that the project includes impact minimization and compensation measures for protection of listed species and their habitats. Since salmon were first listed in Puget Sound, the Corps and the other federal agencies have been working closely to streamline the permitting process, particularly for new pier and pier modification projects. The result of those efforts for Lake Washington has culminated in Regional General Permit (RGP) 3 and a Programmatic Biological Evaluation for Bank Stabilization in Lake Washington. As mentioned above, RGP 3 has been the partial basis for the pier dimensional standards included in the proposed Kirkland SMP. However, compliance with the RGP additionally requires development and implementation of a native shoreline planting plan.

6 Restoration Opportunities

As discussed above, one of the key objectives that the SMP must address is "no net loss of ecological shoreline functions necessary to sustain shoreline natural resources" (Ecology 2004). However, SMP updates seek not only to maintain conditions, but to improve them:

> "…[shoreline master programs] include planning elements that when implemented, serve to improve the overall condition of habitat and resources within the shoreline area of each city and county (WAC 173-26-201(c))."

The guidelines state that "master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program" (WAC 173-26-201(2)(f)). Pursuant to that direction, the City has prepared a Shoreline Restoration Plan.

Practically, it is not always feasible for shoreline developments and redevelopments to achieve no net loss at the site scale, particularly for those developments on currently undeveloped properties or a new pier or bulkhead. The Restoration Plan, therefore, can be an important component in making up that difference in ecological function that would otherwise result just from implementation of the SMP. The Restoration Plan represents a long-term vision for restoration that will be implemented over time, resulting in incremental improvement over the existing conditions.

The Shoreline Restoration Plan identifies a number of project-specific opportunities for restoration on both public and private properties inside and outside of shoreline

jurisdiction, and also identifies ongoing City programs and activities, non-governmental organization programs and activities, and other recommended actions consistent with the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*.

7 Assessment of Cumulative Impacts

The following table (Table 16) summarizes for each environment designation the existing conditions, anticipated development, relevant Shoreline Master Program (SMP) and other regulatory provisions, and the expected net impact on ecological function. Certain special topics are discussed and analyzed in greater detail in Chapter 7 following the table. The discussion of existing conditions is based on the *Final Shoreline Analysis Report* (The Watershed Company 2006), and additional analysis needed to perform this assessment. The Analysis Report includes a more in-depth discussion of the topics below, as well as information about transportation, stormwater and wastewater utilities, impervious surfaces, and historical/archaeological sites, *among others.*

A distint discussion of the Aquatic environment designation is not included, as any developments are associated with and discussed under the corresponding upland environment designation section.

Table 16. Qualitative Assessment of Cumulative Impacts

Environment Designation	Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions	Net Effect
Residential – L	This segment is dominated by single-family homes and is almost entirely built out. Nearly the entire shoreline has been altered with a variety of armoring and alteration types, including piers, boatlifts, boathouses, and moorage covers. Approximately 93 percent of all residences already have a pier and the shoreline is approximately 88 percent armored.	**FUTURE DEVELOPMENT** in the Residential – L environment will likely be restricted to remodeled or expanded residences since only 2 vacant lots (2 percent) exist in shoreline jurisdiction. Based on a ratio of land value to structure value, the City anticipates that approximately 54 (56 percent) of existing developed lots will likely redevelop. Of the 9 lots currently without a pier, the City anticipates 6 of those lots developing new piers in the future. The City also conservatively estimates that approximately 15 percent of the existing piers will be replaced during the same time period. No change in uses is anticipated. **FUNCTIONS/PROCESSES IMPACTED:** As described in section 3.2, new and re-development is typically accompanied by: 1. *Impervious surface increases* 2. *Vegetation removal* 3. *Chemical contaminant increases* 4. *External lighting impacts* Additional impacts could occur with associated new pier development and shoreline modification (discussed separately Sections 3.3 and 3.4). These impacts may affect: 5. *Growth of aquatic vegetation* 6. *Juvenile salmon migration and behavior*	Several facets of the SMP development standards for the Residential – L environment are aimed at minimizing potential impacts to shoreline ecological functions that are discussed in sections 3.2, 3.3, and 3.4. Residential setbacks are one of the key components to assess overall impacts to ecological function as they relate to many of the items listed below. Structure setbacks are regulated under **SMP 83.180** and **SMP 83.360.** Under these scenarios and an anticipated redevelopment of up to 54 lots, the median residential setback would change from 43 feet to 36 feet. 1. *Impervious surface increases* No change in impervious surface requirements are proposed under the new SMP, However, with the anticipated level of redevelopment, expansion of impervious surfaces are anticipated. Based on the 54 lot redevelopment potential mentioned above, approximately 1.79 acres would become impervious while 0.55 acres of nearshore area would be revegetated with native plants. The proposed SMP requires that all new and redeveloped lots include provisions to control stormwater runoff which will minimize erosion and sediment and pollutant delivery (**SMP 83.450**). Additional restrictions include installation of biofiltration/ infiltration mechanisms and use of pervious material (**SMP 83.360**). 2. *Vegetation Removal* Retention of existing vegetation is regulated by **SMP 83.370** which requires applicants to plant at least 75 percent of the nearshore area with native vegetation. Removal of significant trees shall be mitigated at a 3:1 ratio. 3. *Chemical contaminant increases* Potential increases in shoreline development and subsequent increase in application of chemicals and nutrients is potentially restricted using shoreline setback reduction alternatives (**SMP 83.360**) which implements landscape best management practices and may limit lawn area. 4. *External lighting impacts* Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (**SMP 83.440**) 5. *Growth of aquatic vegetation* Overwater cover is minimized through size and height	**Other Regulatory Programs:** Any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW), the U.S. Army Corps of Engineers (Corps), and/or Ecology. Each of these agencies is charged with regulating and/or protecting streams, lakes, and wetlands, and would impose certain design or mitigation requirements on applicants. Due to Endangered Species Act consultation requirements with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, the Corps has developed recommendations to minimize project impacts. These include Regional General Permit 3 (RGP-3) for overwater structures and a Programmatic Biological Evaluation for shoreline stabilization. WDFW also follows similar design standards as the Corps and the City of Kirkland has included many of these standards within the proposed SMP. These agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts. Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline. **Non-Regulatory Restoration Actions** Although no specific restoration projects have been identified in the Residential – L environment, the City's Shoreline Restoration Plan does include goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. Examples of specific items include: • Encourage salmon friendly shoreline design during new construction or redevelopment • Offer incentives for voluntary removal of bulkheads, beach improvement, riparian revegetation • Encourage low impact development through regulations, incentives, education/training, and	New and redevelopment has the potential to degrade the baseline condition with the addition and expansion of impervious surfaces, removal of vegetation, and other typical residential modifications. The median residential setback would likely decrease from 43 feet to 36 feet. However, the combined, strict implementation of the SMP and the critical areas regulations should minimize impacts. Several key factors include: • Nearshore native vegetation would increase by 0.55 acres. • Overwater cover would be reduced by 8 percent. If mitigation for potential setback reductions includes removal of substantial shoreline hardening, additional improvements to ecological functions would occur in the long term. Therefore, **no net loss of shoreline ecological functions is anticipated.**

Environment Designation	Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions	Net Effect
		7. *Sediment movement* 8. *Chemical contamination* 9. *External lighting impacts on overwater structures* 10. *Reduced shoreline complexity* 11. *Lack of wave attenuation*	restrictions for new piers (**SMP 83.280(5)**), restricting size of replacement structures (**SMP 83.280(6)**), and requiring grated decking on major pier repair projects (**SMP 83.280(8)**). 6. *Juvenile salmon migration* Impacts to juvenile salmon migration are mitigated via the same provisions listed under #5 above. Additionally, new piers must be mitigated through the addition of shoreline vegetation (**SMP 83.280(5)(g)**). 7. *Sediment movement* Piles and floats are restricted in the nearshore area (**SMP 83.280(5)**). The use of jetties or groins is prohibited in the Residential – L environment (**SMP 83.170**) 8. *Chemical contamination* Piers and other structures shall be constructed of materials that will not adversely affect water quality (**SMP 83.280(3)(a)(2)**) 9. *External lighting impacts* Placement and direction of external lighting is restricted to minimize impacts (**SMP 83.280(3)(a)(5)**) 10. *Reduced shoreline complexity* Shoreline vegetation is required mitigation for both a residential setback reduction alternative (**SMP 83.360**) as well as new pier proposals (**SMP 83.280(5)(g)**). Implementation of soft shoreline stabilization techniques (defined in **SMP 83.**80) will also improve shoreline complexity (**SMP 83.300**). 11. *Lack of wave attenuation* Wave attenuation should be improved through the implementation of soft shoreline stabilization techniques as identified in #10 above. Some fill waterward of OHWM may occur to enhance nearshore functions (**SMP 83.300(3)(b)(4)**),	demonstration projects • Through grant funding sources, restoration opportunities may be available to multiple contiguous shoreline properties, including residential lots that are interested in improving shoreline function.	

Environment Designation	Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions	Net Effect
Residential – M/H	This segment is almost entirely built out and dominated by multi-family housing with some single-family uses spread throughout. Nearly the entire shoreline has been altered with a variety of armoring and alteration types, including piers, boatlifts, boathouses, and moorage covers. 81 percent of all lots already have a pier and the shoreline is approximately 89 percent armored.	**FUTURE DEVELOPMENT** in the Residential – M/H environment will likely be restricted to remodeled or expanded single- and multi-family residences since only 4 vacant lots (7 percent) exist in shoreline jurisdiction. Based on a ratio of land value to structure value, the City anticipates that approximately 20 (36 percent) of existing developed lots will likely redevelop. Although some change in use may occur from property to property, no net change in functional uses are anticipated throughout the Residential – M/H environment. There are approximately 11 lots in the Residential – M/H environment that do not have existing piers. The City anticipates that approximately 10 lots will likely request new piers in the future. The City also conservatively estimates that approximately 15 percent of the existing piers will be replaced during the same time period. No new marinas are anticipated although some joint-use community piers may occur. **FUNCTIONS/PROCESSES IMPACTED:** The functions and processes affected by future development within the Residential – M/H environment are very similar to those described above for the Residential – L environment. However, given the existing built out condition (impervious surfaces already total over 54 percent of the total	Several facets of the SMP development standards for the Residential – M/H environment are aimed at minimizing potential impacts to shoreline ecological functions that are discussed in sections 3.2, 3.3, and 3.4. Structure setbacks are one of the key components to assess overall impacts to ecological function as they relate to many of the items listed below. Structure setbacks are regulated under **SMP 83.180** and **SMP 83.360.** Under these scenarios and an anticipated redevelopment of up to 20 lots, the median setback would increase from 24 feet to 25 feet. See discussion above under Residential – L environment for expanded details as to how the SMP Provisions address the following impacts. 1. *Impervious surface increases* No change in impervious surface requirements are proposed under the new SMP. Based on the redevelopment potential mentioned above, approximately 0.74 acres would become impervious while 0.3 acre of nearshore area would be revegetated with native plants. Stormwater provisions are included in **SMP 83.450**. Additional impact reductions are listed in **SMP 83.360**. 2. *Vegetation Removal* Retention of existing vegetation is regulated by **SMP 83.370**. For the Residential – M/H environment, this also requires an average of 15 feet of riparian vegetation planted from the OHWM (**SMP 83.370(1)(d)(1)**). Removal of significant trees shall be mitigated at a 3:1 ratio. 3. *Chemical contaminant increases* Shoreline setback reduction alternatives (**SMP 83.360**) include landscape best management practices and may limit lawn area. 4. *External lighting impacts* Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (**SMP 83.440**). However, several exemptions from the lighting standards are included, such as emergency lighting, public rights-of-way (i.e. trails), and seasonal lighting (**SMP 83.440(2)(a)**). 5. *Growth of aquatic vegetation* Overwater cover is minimized through size and height restrictions for new piers (**SMP 83.280(5)**), restricting size of replacement structures (**SMP 83.280(6)**), and requiring	**Other Regulatory Programs:** As described above under the Residential – L environment, any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW, the U.S. Army Corps of Engineers (Corps), and/or Ecology. The Corps would use RGP-3 to review small residential pier projects or joint-use proposals involving no more than three residences. Projects which involve larger overwater structures would likely require a Biological Assessment for consultation with the federal Services. The programmatic Biological Evaluation for shoreline stabilization would likely apply to both single- and multi-family property within the City. As mentioned above, these agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts. Stormwater management, as described above under Residential – L environment, would likely minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline. **Non-Regulatory Restoration Actions** Although no specific restoration projects have been identified in the Residential – M/H environment, the City's Shoreline Restoration Plan does include goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. See the Residential – L discussion above for examples.	New and redevelopment has the potential to degrade the baseline condition with the addition and expansion of impervious surfaces, removal of vegetation, and other typical modifications. The median residential setback would likely increase from 24 feet to 25 feet. While this is only a slight increase in shoreline setback, the combined, strict implementation of the SMP and the critical areas regulations should minimize impacts and provide for further improvements in nearshore ecological conditions. Several key factors include: • Nearshore native vegetation would increase by 0.3 acre. • Overwater cover would be increased by X percent. As with the Residential – L environment, if mitigation for potential setback reductions includes removal of substantial shoreline hardening, additional improvements to ecological functions would occur in the long term. Therefore, **no net loss of shoreline ecological functions is anticipated.**

Environment Designation	Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions	Net Effect
		shoreline jurisdiction for Residential – M/H) impacts on ecological functions from future expansion are anticipated to be less. Regardless, development impacts may include: 1. *Impervious surface increases* 2. *Vegetation removal* 3. *Chemical contaminant increases* 4. *External lighting impacts* 5. *Growth of aquatic vegetation* 6. *Juvenile salmon migration and behavior* 7. *Sediment movement* 8. *Chemical contamination* 9. *External lighting impacts on overwater structures* 10. *Reduced shoreline complexity* 11. *Lack of wave attenuation*	grated decking on major pier repair projects (**SMP 83.280(8)**). 6. *Juvenile salmon migration* Impacts to juvenile salmon migration are mitigated via the same provisions listed under #5 above. Additionally, new private piers must be mitigated through the addition of shoreline vegetation (**SMP 83.280(5)(g)**). 7. *Sediment movement* Piles and floats are restricted in the nearshore area (**SMP 83.280(5)**). The use of breakwaters, jetties or groins may be permitted in the Residential – M/H environment only where necessary and when designed to minimize impacts to ecological functions (**SMP 83.310**) 8. *Chemical contamination* Piers and other structures shall be constructed of materials that will not adversely affect water quality (**SMP 83.280(3)(a)(2)**) 9. *External lighting impacts* Placement and direction of external lighting is restricted (**SMP 83.280(3)(a)(5)**) 10. *Reduced shoreline complexity* Shoreline vegetation is required mitigation for both a residential setback reduction alternative (**SMP 83.360**) as well as new pier proposals (**SMP 83.280(5)(g)**). Implementation of soft shoreline stabilization techniques (defined in **SMP 83.80**) will also improve shoreline complexity (**SMP 83.300**). 11. *Lack of wave attenuation* Wave attenuation should be improved through the implementation of soft shoreline stabilization techniques as identified in #10 above. Some fill waterward of OHWM may occur to enhance nearshore functions (**SMP 83.300(3)(b)(4)**),		

Environment Designation	Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions	Net Effect
Urban Conservancy	This segment contains land areas in shoreline jurisdiction generally dominated by City parks and open spaces. These areas include, the western portion of Juanita Beach Park, Kiwanis Park, Waverly Park, Lake Ave West Street-end Park, Street-end Park, David Brink Park, Settler's Landing, Marsh Park, and Houghton Beach Park.	[pending]	[pending]	[pending]	[pending]
Urban Mixed	The shoreline within the Urban Mixed environment is comprised of a variety of uses including park/open space, residential, and commercial. In general, the land area is fully developed.	[pending]	[pending]	[pending]	[pending]
Natural	The shoreline within the Natural environment is entirely park/open space with no existing development, containing only 1 percent impervious surface. It is comprised entirely of the Yarrow Bay wetlands and Juanita Bay Park and Forbes Creek wetland	[pending]	[pending]	[pending]	[pending]

8 NET EFFECT ON ECOLOGICAL FUNCTION

PENDING

9 REFERENCES

Longcore, T. and C. Rich. 2004. Ecological Light Pollution. Frontiers in Ecology and the Environment. 2(4):191-198

Mazur, M. and D. Beauchamp. 2006. Linking piscivory to spatial-temporal distributions of pelagic prey fishes with a visual foraging model. Journal of Fish Biology.

Rich, C. and T. Longcore. 2006. Ecological Consequences of Artificial Night Lighting. Island Press. Washington.

The Watershed Company. 2006. Final Shoreline Analysis Report Including Shoreline Inventory and Characterization for the City of Kirkland's Lake Washington Shoreline. Prepared for City of Kirkland.

10 List of Acronyms and Abbreviations

Corps ..... U.S. Army Corps of Engineers

Ecology ..... Washington Department of Ecology

OHWM..... ordinary high water mark

SMP..... Shoreline Master Program

WDFW..... Washington Department of Fish and Wildlife

APPENDIX A – ENVIRONMENT DESIGNATIONS

SEE LARGE MAP

SEE LARGE MAP

Teresa Swan

From: Allen Schwartz [allenschwartz@hotmail.com]
Sent: Wednesday, March 25, 2009 8:58 AM
To: Teresa Swan; Paul Stewart
Subject: Shoreline Master Plan Comments

Teresa Swan and Paul Stewart,

I only had your E-mail address but would like this to go to the people addressed below. Can you get a copy to Stacy Clauson and the members of the Kirkland Planning Commission for me?

Thanks,

Allen Schwartz

To: Kirkland Planning Commission
Stacy Clauson, Contract Planner
Teresa Swan, Senior Planner
Paul Stewart, Deputy Director of Planning

I attended the March 12 Planning Commission Meeting on the subject of Kirkland's Shoreline Master Program Update (SMP). This was the first meeting I attended on this subject and I had little prior knowledge on the subject. Thank you to the Planning Commission for inviting waterfront property owners and allowing us to present our views.

At the meeting, I picked up a detailed (191 pages) handout prepared by the above staff. My thanks to them also, for their work in preparing this handout and making it available to the public. I have since read this handout. In the process, it educated me on many of the details of the SMP and satisfied some of my concerns. With this new found knowledge, I would like to share some additional thoughts and concerns. These fall into two general categories:

I. Concerns of a waterfront homeowner
II. Some comments on selected details

I. Concerns of a waterfront homeowner

My concerns fall into the following areas:

A. Initial cost of conversion from a hard (concrete bulkhead) to a soft shoreline
B. The annual maintenance cost after conversion to a soft shoreline
C. Can a "soft" shoreline survive the Kirkland waterfront environment?
D. What triggers will force me to make this conversion?

These are each discussed below:

A. **Initial cost of conversion from a hard to soft shoreline**

Let me start by saying I have no first hand experience on waterfront construction costs. However I was very curios to get a ballpark idea of what these costs might be. The Green Shorelines pamphlet prepared by the Seattle planning people provided some guidelines which I used and made guesses in other areas. The pamphlet gave costs for where the shoreline was accessible by land or only accessible by water. On 5th Ave. W. (where I live) the lots are usually 60 feet wide with most houses built out to the 5 foot side yard setback requirement. Our only waterfront construction access is from the water so I used these costs. The costs breakdown as follows:

1. Remove an existing concrete bulkhead; $100 to $125 per linear foot. For a 60 foot bulkhead; $6,000 to $7,500.
2. Beach Establishment; $200 to $500 per linear foot. For a 60 foot beach; $12,000 to $30,000.
3. Design and permitting.
    a. Submit a geotechnical report prepared by a qualified professional with an engineering degree. Attachment 9 on page 145 of the handout lists numerous items that must be included. These include an assessment of structural needs, erosion estimates, how wave energy is dissipated, and presentation of a design. I am guessing this would cost $2,000 to $4,000.
    b. Fund the city to review the shoreline stabilization plan, the monitoring and maintenance plan, the justification of need, and the drawings. May include the funding for the city to hire a qualified professional. I am guessing this would cost $1,000 to $3,000.
    c. Submit a detailed construction plan including: (excerpts only, not actual text below)
        1) Plan and cross section views of existing and proposed configuration and accurate topology and ordinary high water marks.
        2) Detailed construction sequence and <u>specifications for all materials</u>, including gravels, cobbles, logs, and vegetation. Show how sequence will protect from erosion, allow safe passage of fish and wildlife, and minimize or eliminate juvenile salmon predator habitat.
        3) A detailed five-year vegetation maintenance and monitoring program to include goals and success criteria. The 5 year plan shall require two site visits per year by a qualified professional with annual progress reports submitted to the planning official <u>and all other</u> <u>agencies of jurisdiction</u>. Include a contingency plan in case of failure and proof of a written contract with a qualified professional who will perform the monitoring. I am guessing this plan would cost $2,000 to $4,000.

<u>Notes on the above:</u>

A <u>specification for all materials</u> suggests all materials must be "qualified" to show they meet the specifications. I was involved with a rural septic system that required certified sand. The certified sand cost $40 per yard, significantly higher than regular sand. When the word "specification" is applied to logs and vegetation, I assume what is really meant is "description". Hopefully that is what is meant for the other items also. I would request this be clarified.

<u>All other agencies of jurisdiction</u> is very open ended and perhaps evolutionary. I believe the city, as the lead agency, should identify the list of agencies requiring this report. Is the homeowner also obligated to fund their review and respond to their demands? I would like this clarified.

d. The performance official shall require a performance or maintenance

bond or security to ensure compliance. It shall be provided in such forms and amounts as the planning official deems necessary. It shall be obtained from companies registered and certified. The amount of the performance security shall be a percentage of the estimated cost based on the city's established percentage. In addition an administrative deposit shall be paid. The planning office may revoke (invoke?) the performance security to correct conditions. I have no basis whatsoever to guess at this cost so I will just pick $1,000 to $5,000.

This section concludes with a reiteration that "The cost of producing and implementing the shoreline stabilization plan, the monitoring and maintenance program, reports, and drawings, as well as the review of each component by the city and the city consultant(s) shall be borne by the applicant"

In my opinion, the detail the city is requiring shows little sympathy for the costs incurred by the homeowner. I would request this be reviewed with the goal of reducing the cost burden on the homeowner.

Cost Summary; Initial conversion from a hard to a soft shoreline

	Min.	Max.
1. Remove concrete bulkhead	6,000	7,500
2. Beach Establishment	12,000	30,000
3. Design and permitting		
a. Geotechnical report	2,000	4,000
b. City review	1,000	3,000
c. Construction plan	2,000	4,000
d. Performance bond	1,000	5,000
Total	$24,000	$53,500

I realize I may be way off on many of these items. An input I received from someone with experience in civil construction thought the cost could likely approach $100,000 for a 70 foot lot.

B. Annual maintenance cost after conversion to a soft shoreline

The Green Shorelines pamphlet quotes maintenance of a green shoreline as "sand replacement at 1-5 year frequency, gravel at 5-10 years, both $3 to $6 per square foot of beach"

Looking at the scale drawing of the "5th Avenue West – After" lot on page 30, a crude calculation of the gravel/cobble mix area came up with about 1000 square feet. The sand area is quite small, perhaps 100 square feet. This gives a gravel replenishment cost of $3,000 to $6,000 and a sand replenishment cost of $300 to $600.

The challenge of converting this to an average annual cost is estimating the frequency replenishment is required. I assume the guidelines given in the Green Shoreline pamphlet (prepared by Seattle planning people) is for the Seattle shoreline. Considering most strong wind storms come from the Southwest, Seattle has the lee shore and Kirkland has the windward shore. Based on my concerns expressed in the following section (Can a soft shoreline survive in the Kirkland waterfront environment?) I am estimating Kirkland beaches will require replenishment of both sand and gravel every other year. Cost for

replenishing both sand and gravel would be $3,300 to $6,600. This would average $1,650 to $3,300 per year.

The maintenance plan requires two site visits per year by a qualified professional with an annual progress report submitted to the planning official. I am guessing this would cost $400 to $1,000 per year. I am guessing funding the city to review this plan would cost $100 to $300 per year.

Cost Summary; Annual maintenance of a soft shoreline

	Min	Max
Sand and gravel replenishment	1,650	3,300
Annual inspection and report	400	1,000
Annual city review	100	500
Total	$2,150	$4.800

The above estimate does not consider any costs to replace damaged vegetation. I am predicting there will be damage or destruction to some of the required vegetation. This will probably reset the 5 year clock and this cost could become perpetual.

Again, my estimates may be well off and I would welcome input from others having better data. If my estimates are anywhere close, it shows a significant annual cost and bureaucratic burden on the homeowner.

B. Can a soft shoreline survive the Kirkland waterfront environment?

Four factors determine wave energy:

Wind speed
Fetch (distance)
Wind duration (time)
Water depth

I have lived on the Kirkland waterfront for 38 years. It is my estimate that about once or twice a year, we get what I would call a significant wind storm. These storms are predominately from the Southwest. The distance in that direction (looking toward the West end of the 520 bridge) is about 3.5 nautical miles.

My waterfront has the following characteristics:

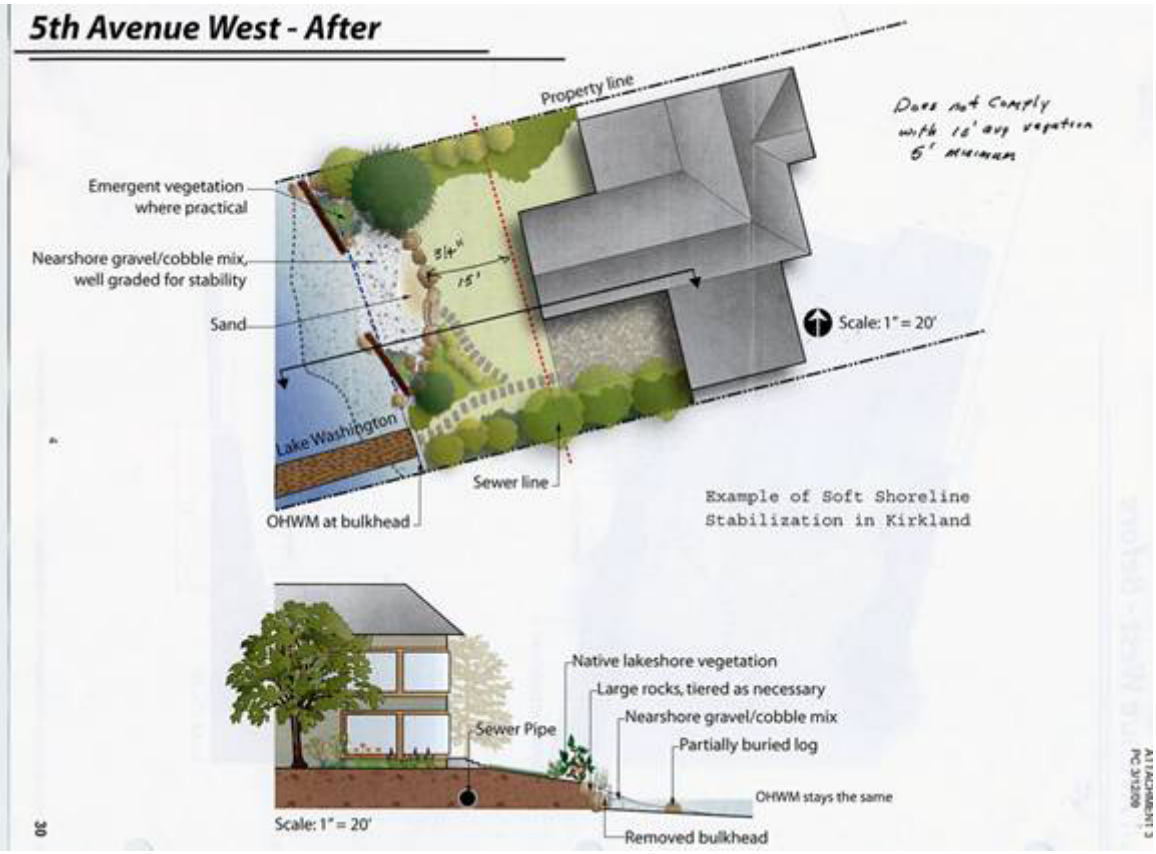
Water depth at bulkhead during low water level (winter) is 2 feet
Water depth at bulkhead during high water level (summer) is 4 feet
Bulkhead height above lake bottom is 5 foot, 4 inches
Dock height above lake bottom (at bulkhead) is 6 foot, 6 inches.

When these storms occur, the peak wave tops come in higher than my dock. Peak waves are larger than significant waves or average waves but I estimate a peak wave occurs 2 or 3 times a minute. It is difficult to estimate their exact height because of the spray that creates. However I believe I can say they are at least a foot higher than my dock. This means the peak wave tops are in excess of two feet higher than my bulkhead. These wave tops roll up my lawn until they lose their energy and then flow back into

the lake. After the storm subsides, I have debris (leaves, twigs, moss) 20 feet up my lawn from my bulkhead.

After these storms I have observed the arrival on the lake bottom of new objects, sometimes as large as a concrete pier block or a 6 foot section of galvanized pipe. Upon the next storm these objects may be gone or moved 10's of feet northward. For these objects to be moved along the lake bottom when they are in 4 to 6 feet of water shows the waves have significant energy.

The bulk of this wave energy is absorbed by my bulkhead. Only the wave tops with a small portion of the energy are left to invade my lawn and they still go 20 feet. The challenge in removing a "hard" bulkhead is to find something else to absorb all this wave energy. Page 30 of the handout shows the soft shoreline sample shown below. This is to contrast with the "5th Avenue West-Before" on page 29 showing a hard bulkhead. With the soft design the removed bulkhead is basically replaced along the lot sides with tiered large rocks and logs keeping the ordinary high water line (OHWL) at about the same place. The center section has no hard energy absorption features except the partially buried log. A ramp of gravel/cobble mix is placed out into the lake about 15 ft. (It is interesting to note the soft sample design does not show the required average 10 foot of required vegetation or the required minimum of 5 foot of vegetation in the plan view).

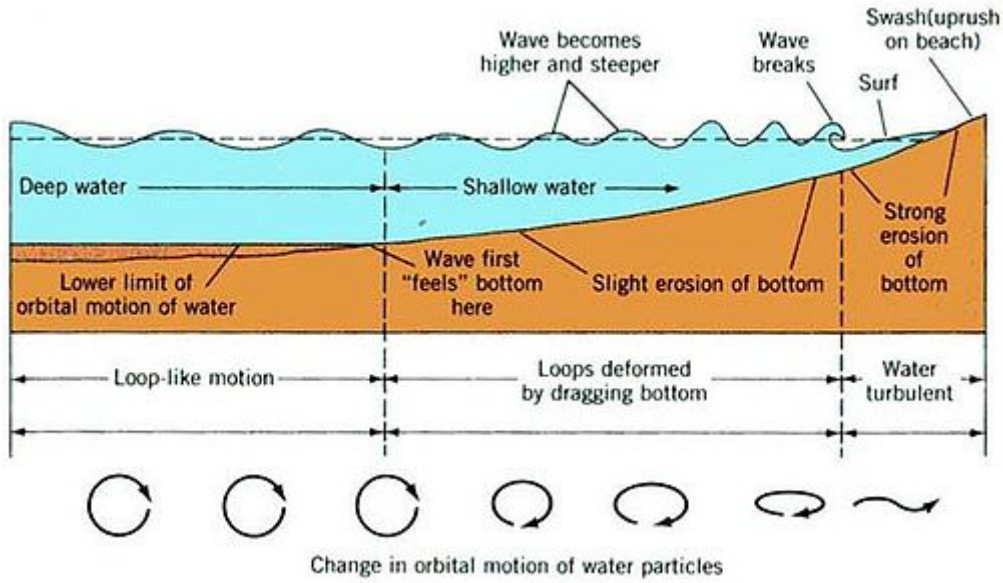


My concern is the relatively smooth ramp from deep water to beach top does not provide much wave energy absorption but will just redirect the wave energy up this ramp. This ramp brings another factor into play; water depth. The illustration below shows the effect of water depth.

Waves and shallow water

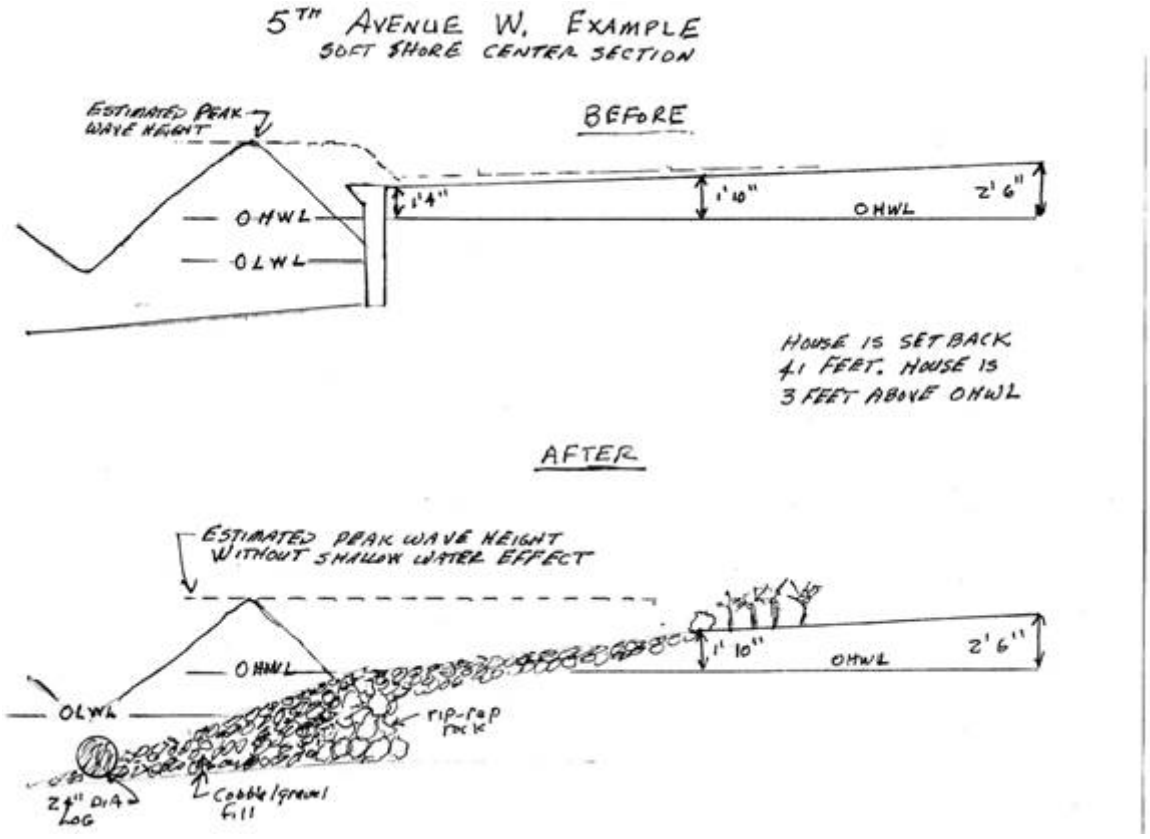
From Wikipedia, the free encyclopedia

Jump to: navigation, search



When waves travel into areas of **shallow water**, they begin to be affected by the ocean bottom. The free orbital motion of the water is disrupted, and water particles in orbital motion no longer return to their original position. As the water becomes shallower, the swell becomes higher and steeper, ultimately assuming the familiar sharp-crested wave shape. After the wave breaks, it becomes a wave of translation and erosion of the ocean bottom intensifies.

This illustration is about ocean waves but the same laws of physics apply to all waves. The proposed soft shores ramp would be equivalent to the right hand section of the above illustration. This is where the most erosion would occur and where the wave energy must be absorbed. My belief is that the soft design would have to at least match the concrete bulkhead in energy absorption. The only energy absorption features in the center section is the above-shoreline beach depth and slope. The depth can absorb energy by the friction of the water flowing over the gravel/cobble surface. The slope can absorb energy by the gravity effect of the water flowing uphill. I doubt the gravel/cobble surface would have more friction than lawn. The city sample shows the house about 7 feet above the OHWL but the drawing below shows the actual measurements of what the soft shoreline would look like in my location..



The peak wave tops will be higher than the beach top without even considering the shallow water effect which will make them even higher. My house is only 3 feet above the OHWL and my basement floor is only about 1 foot above OHWL. If the soft shoreline did not provide almost as much energy absorption as the removed bulkhead, my house would be reached by waves and cause basement flooding. For these reasons I doubt a soft shoreline is feasible for lots similar to mine in locations similar to mine

My understanding of the proposed rules is that a hard structural shoreline will be allowed if a geotechnical report shows a soft approach is not feasible. Rather than transfer this burden to each individual home owner, I suggest the city do a generic feasibility design for representative Kirkland shorelines. In my opinion, a soft shoreline feasibility is dependent on three factors; 1) location (wave height), 2) house setback distance, and 3) lot slope. If it can be shown that it is not feasible for a class of lots at certain locations, this would be helpful. I understand approximately $130,000 is currently being spent on outside consultants. I suggest hiring an expert to evaluate under what general conditions and general locations a soft shoreline is feasible and under what conditions a hard shoreline is required. It may turn out a soft shoreline is not feasible on much of Kirkland's waterfront. Knowing this could relieve a great burden being passed down to the homeowners.

Another concern I have is, in the analysis to determine if a soft shoreline is feasible, what will be used for design criteria and what will be used to determine "feasible"? In flood plain studies, the criterion is a 100 year rain. A 100 year rain is the heaviest rain that occurs, on average, once in a 100 years. Will the soft design have to withstand a 100 year windstorm? The table below shows some of the significant windstorms that have occurred in the past.

Maximum Winds at Boeing Field for Selected Storms

Date of Storm	Peak Wind	Peak Gust
Oct 21, 1934	58 mph	75 mph (E)
Jan 20, 1993	**44 mph**	**70 mph**
Oct 12, 1962	44 mph	66 mph
Jan 15, 1951	40 mph	60 mph
Feb 25, 1958	40 mph	58 mph
Dec 12, 1995	40 mph	47 mph
Oct 27, 1950	35 mph	65 mph
Nov 24, 1983	35 mph	54 mph
Nov 14, 1981	35 mph	46 mph
Mar 3, 1999	33 mph	52 mph
Jan 16, 2000	32 mph	54 mph
Jan 09, 1953	31 mph	53 mph
Feb 28, 1955	30 mph	49 mph
Mar 26, 1971	30 mph	46 mph
Nov 15, 1981	29 mph	48 mph
Dec 27, 2002	26 mph	48 mph
Jan 19, 1964	25 mph	48 mph
Dec 22, 1955	25 mph	44 mph

Considering my observation that we get storms once or twice a year capable of peak waves higher than my dock, those storms must have peak winds of less than 25 mph, perhaps 20 mph. Articles I have read say wave height is generly proportional to sustained wind speed squared and wave energy is proportional to wave height squared. So if these are correct, going from 25 mph winds to 50 mph winds would cause the waves to be 4 times higher and the wave energy to be 16 times higher. Admittedly we do not get many 50 mph winds, but 30 to 40 are not rare. Wind speed going from 20 mph to 35 mph would cause the waves to be about 3 times higher and wave energy to be about 9 times higher. So what wind criteria should be used in a soft shoreline design? The criteria selected will greatly affect any design or feasibility analysis. I believe this should be specified so all analysis is done on a consistent basis.

What measure will be used to define a "feasible" design? If surface water (excluding mist) reaches the house, even during the worst storms, I believe that is not a feasible design. It is acknowledged some replenishment of the cobble/gravel/sand will be required periodically. How much replenishment is needed and how often replenishment is required can a design need and still be considered feasible?

A NOAA article on a beach sand replenishment project provided some definitions. They defined project "half life" as the time required for one half of the project volume (fill) to be transported from the project limits (boundaries) through spreading. They noted the longevity of the project was related to the square of the project (beach) length. Doubling the beach length increased the project longevity by a factor of 4. For the short length of gravel/cobble fill associated with a pocket beach, I suspect it would not last long based on my observations of heavy objects being moved northward in a storm. They also noted the doubling of wave height increased the movement of the fill by a factor of 5.

This article was about adding sand to an ocean beach which is certainly different than adding cobble/gravel to a lake shore pocket beach. So the results can not be directly applied to Kirkland's situation. However, I believe the principal of losing fill faster if the length is short and if the waves are higher holds true in both cases.

So how can this be converted to the definition of a feasible design? How much maintenance cost should the home owner be expected to bear? I suggest the city define a limit to how much and how often replenishment is required and still be considered acceptable.

If the threat (storm definition) condition and the success (feasible) criteria are not defined, shoreline beach designers would not know what they were designing against and what they would have to achieve. Also, it then would be left to the judgment of the city individual to determine feasibility. This could vary from person to person and time to time, presenting a moving target.

Prior to moving to Kirkland, I lived along Lake Washington in the Kennydale area. The property had a small inlet from the lake channel. All I did to secure my 14 foot runabout boat was to pull the bow 2 or 3 feet onshore. In 11 years, there was never enough wave action to dislodge my boat. So soft shorelines can work, and be more desirable, in some portions of the lake. Care must be taken to not assume one solution fits all parts of the lake.

E. What triggers will force me to make this conversion?

In my visits with neighbors, this is the biggest concern I hear. The city should provide clarity with specific items that require this conversion and which items do not.

To me there are two basic parts to this issue: 1) tying a upland development to a beach or dock replacement requirement and 2) defining the degree of repair allowed before a dock or bulkhead must be replaced with the new standards.

It seems tying upland development to shoreline enhancement is deliberately being left vague. On page 6 of the handout it states "…the Planning Commission indicated it wanted to further pursue requiring shoreline enhancement with upland development and were interested in incorporating the full scope of opportunities in this regard, including softening the shoreline, for major new development projects.

The review of this by the city attorney concluded with " ..a court.. would likely find that requiring bulkhead removal is not warranted in connection with upland development activity….". The staff also pointed out, tying upland development to beach enhancement is not required under provisions established in the State Guidelines.

So I cannot understand why the city would not state clearly that softening the shoreline or dock replacement shall not be required based on upland development.
If they are not willing to do this, do they intend to get progressively more aggressive in this area until they get sued and lose? I hope this is not their approach. **A clear statement in this area would, I think, be the single most important thing the city could do to relieve homeowner anxiety.**

The handout has developed some specific rules for what constitutes a repair and what constitutes a replacement for docks and bulkheads. I have not reviewed these in detail to comment on the specifics, but I applaud the approach of providing this level of clarity.

II. Some comments on selected details

A. Dock width
B. Shoreline Vegetation
C. Pesticides, Herbicides and Fertilizers
D. Setback Distance
E. Presenting extended linear faces

A. Dock width

The shoreline management plan (SMP) is limiting dock width to 4 feet. I consider a 4 foot dock to be a safety hazard. With two people meeting, especially if they are carrying something, there is little margin from being bumped off into the water. If they are seniors with poor balance, the situation is worse. I have seen neighbors go out on a wave swept dock to retrieve something dislodged by the storm. Being swept off the dock could be a fatality. I believe a 6 foot wide dock is needed for safety and comfort.

We are being told a 4 foot dock is necessary because the fish are afraid to swim into the dock shade. I have some property with a creek. In recent years, the creek has been going dry in the fall. When the water returns, so do the trout. To get there, they had to swim through culverts under the highway; 4 culverts if they came from upstream and 3 culverts if they came from downstream. The culvert near me is 5 foot in diameter and about 100 feet long. These culverts must be quite dark inside but clearly they do not stop the fish.

So, it is hard for me to visualize fish being intimidated by a 6 foot wide dock located a foot or two above the water. It gets more confusing when we are told they like tree shade but are afraid of dock shade. What hard evidence exists to substantiate the assertion that fish are afraid of dock shade? I have no doubt a person (fish biologist?) standing on a dock has seen minnows heading for a dock abruptly change course and head for deeper water. As a fisherman, I know if you sneak up on a trout in shallow water, and it sees you, it will immediately head for deeper water. So I will continue to believe this argument is weak until I see a good study to convince me otherwise.

The other argument that I think is weak is that smolt salmon frequent the Kirkland shoreline. To the best of my memory, I have never seen minnow size fish along my waterfront. This, of course, does not prove they are not there sometimes. However, if they were there very often, it would seem I would have had some random sightings in 38 years.

So I think the deck width cost (safety) vs benefit (fish) issue should come down on the side of safety, especially when the benefit side is based on a “weak squared” argument.

As a minimum, allow the new sun lighted docks to be 6 feet wide.

B. Shoreline Vegetation

Section 83.350.1 states significant trees must be retained. It also gives several other requirements regarding significant trees. I was not able to find a definition of a “significant tree”. Perhaps it is defined somewhere else. If so it would be helpful to repeat it, or move it, to this section to connect it with its requirements. If not, a significant tree should be defined.

This section also states all replacement trees and shrubs in the shoreline setback area shall be native species. On page 7 of the handout it states "Language has been added about use of vegetation from the Kirkland Native Plant List". I did not find a reference to the Kirkland Native Plant List in section 83.350. I reviewed the Kirkland Plant List. It says "Recommendations for Required Landscaping and Restoration Planting". Is it the intent in the SMP to change "recommendation" to "requirement"?

If so, what drives the requirement that only trees and shrubs from the Kirkland list are allowed? I thought the purpose of the shoreline trees was to provide fish shade along with some shoreline stabilization.
Is the shade from a Pacific Crabapple (on list) better than the shade from a Flowering Cherry (not on list)? Is its root structure better? Considering the homeowner will be the predominate person enjoying these trees and caring for them, shouldn't they get to pick trees they enjoy? This seems to me to be excessive government for little or no public benefit.

Also, the list of shrubs only had two shrubs less than 6 feet tall; Salal and Thimbleberry. Water views are precious and a 5 to 10 foot section of 6 foot high shrubs would block all ground level views.

I read an internet article on shoreline vegetation, and it had a list of 9 undesirable shoreline trees and shrubs. I have no issue with prohibiting trees or shrubs that are unsuitable for the shoreline. So I would recommend language along the line of; It is recommended shoreline vegetation be selected from the Kirkland Recommended List. However vegetation from the Kirkland Prohibited list shall not be allowed in the shoreline setback area.

C. Pesticides, Herbicides, and Fertilizers

One thing I suspect we can all agree on, is we need to protect the lake from pesticides, herbicides, and fertilizer leaching into the lake. The Best Management Practices (BMP) gives guidelines on how to achieve this.

Section 83.430.3.h.2) states "spray application of pesticides shall not occur within 100 feet of open water…". I do not believe the 100 foot restriction is necessary (perhaps a lesser amount). If BMP are used including spraying with a hose attachment sprayer (large drops rather than mist) on a day with no wind or a slight on shore breeze, I believe it can be done with confidence that no spray will enter the lake. The other concern is the dripped spray leeching through the ground, into the ground water, and on to the lake. I believe soil is a good filter and if product is used that degrades within 2 weeks, I don't think it can make its way through the soil and into the lake in this time period. Admittedly, this approach puts the burden on the property owner to do the right thing. I believe the vast majority of waterfront owners will, as we enjoy clean water more than most. For the few others, they would probably spray illegally anyway. There can be situations, such as tent caterpillars, where a pesticide is needed to save a tree or plant in the setback area.

Section 83.440.4.a.3) states no application of fertilizer shall be made within 50 feet of a waterway. Section 83.440 is "Critical Areas – General Standards" so I don't know if this applies to residential areas or not. If it is intended to apply to residential areas, this would preclude the use of fertilizer for the required shoreline vegetation. Depending on local soil conditions, some fertilizer may be required to sustain the required lakeside vegetation. I would request clarification on whether or not this applies to residential areas and if it does, this restriction be removed to allow survival of the shoreline vegetation.

D. Setback Distance

As I understand the proposed shoreline setback for Residential-L it is as follows:
35% of the average parcel depth except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet.

A presentation chart said the existing shoreline standard is 15 feet; 15% of average parcel depth, or average of adjoining lots, whichever is greater.

Another presentation chart showed the average lot depth, (OHWL to 5 Ave W) was 120 feet. Thirty five % of average lot depth = 42 foot setback.

At the March 12 meeting, it was stated the median existing setback in Residential-L is 42.5 feet.

If the new requirement is basically the same as the existing median, it means 50 percent of the existing homes that are now compliant will become non-compliant. What are the consequences for these new non-compliant homes? Will these lots be grandfathered in to maintain their existing setback? Will they be allowed to do a major house remodel keeping the existing setback? Will they be able to expand the house on the sides and back areas? Will they be able to do a complete tear down and rebuild on the existing setback foundation? We need a detailed set of rules in this area. We should not punish home owners who have complied with all past rules.

E. Presenting extended linear faces

Section 83.300.7.b states "The soft shoreline stabilization design shall size and arrange any gravels, cobbles, logs, and boulders so that the project remains stable in the long-term and dissipate wave energy, without presenting extended linear faces to oncoming waves".

I understand the intent of providing a design which does not reflect wave energy back into the lake, which extended linear faces would do. When a soft shoreline abuts an adjoining bulkhead, some form of hard energy absorption is required to prevent undermining the adjoining bulkhead by wave erosion. The sample designs accomplish this by using large boulders. The intent is to not allow these boulders to become a significant portion of the design.

The only problem I have is, how do you define "extended" and "linear"? Unless they are quantified, it does not allow the designer and city reviewer, to work against a known value. I believe this should be defined in a manner that is understood by all parties.

One approach could be something like "any face presented to oncoming waves shall be non-linear with a maximum radius of eight feet". This would limit "extended" to eight feet because, by this time, the face would have turned 90 degrees. You may have something better that still puts numerical values on the definition. I believe a measurable definition should be provided.

Summary

Thank you for letting waterfront property owners be part of this process. Together, I believe we can progress toward a common sense, balanced approach which protects waterfront property from storm damage, provides safe docks, clean water, and a fish friendly lake.

Allen Schwartz
409 5th Ave. W
Kirkland, WA 98033
425-827-5183
allenschwartz@hotmail.com

Teresa Swan

From: Teresa Swan
Sent: Thursday, March 26, 2009 4:10 PM
To: Teresa Swan
Subject: FW: QUESTIONS AND CONCERNS ON SMP RECOMMENDED BULKHEAD AND PIER REGULATIONS

From: Daved [mailto:Daved@waterfrontconstruction.com]
Sent: Thursday, March 19, 2009 10:47 AM
To: Teresa Swan; CLAUSON Stacy A; Paul Stewart
Cc: Richard Sandaas; vanskamok; Mark B. Nelson; Gregory W. Ashley; Ken Sethney
Subject: QUESTIONS AND CONCERNS ON SMP RECOMMENDED BULKHEAD AND PIER REGULATIONS

Hi Teresa, Paul and Stacy,

Hope all is well. I know all your hard work on the SMP is appreciated but I also have concerns that some of it looks rather routine with a pre-determined outcome the City, WA Dept of Ecology and the Biological Consultant are set on achieving regardless of public concern and the professional input from those familiar with how the general process "really" works. It also falls short on recognizing the vast environmental improvements made under existing SMP's and current WDFW and Corps guidelines.

There is a lot of paperwork in Kirkland and Houghton so everything runs together and it is hard to keep up. Can you point me to the most current pier and bulkhead regulations staff is promoting to the Commission and Council?

I am very concerned at your recommendation that property owners contact state and federal agencies directly on the science when it is clearly the city's responsibility during the process to research, question and even challenge it on behalf of your citizens. Best available science is at the very heart of the push for change so it must be validated or abandoned by every local government. The City has an obligation to its citizens to make sure the process respects and protects property rights regardless of the pressure placed on it by the state and the fear of legal action. This cannot be handed off to others. Future legal action from property owners would cost the city much more and could repeal the entire document or at least cause a domino effect if due diligence is not exercised. Nobody wants to see that type of failure and Kirkland is not alone in this possible scenario. This is why the City must base the SMP using solid and proven science and not the hypothetical, inferences, inconclusive, and "best guess" references being tossed its way. Although there may be some distant connection I think any reasonable legal body would find the action being taken against property owners (piers and bulkheads) to be disproportionate with the assumed impacts weakly documented and they could find little or no substantive relationship at all.

Questions and Concerns:

- The City should accept the planting plan approved by WDFW and the Army Corps. Due to many factors most projects approved along Lake Washington and Lake Sammamish do not include at least 2 native trees and 3 willows but they do include native plants, shrubs and trees from the approved native plant list and result in environmental improvements and mitigation offset. The City dictating a planting plan where there is absolutely no need removes the cooperative effort between applicant and agencies (which have fish biologists reviewing projects) charged with protecting listed species and critical habitat. This is redundant and unnecessary for projects involving WDFW and Army Corp permits.

- Is requiring a property owner to allow their property to erode until a primary structure is threatened before they can have any shoreline stabilization structure approved an unconstitutional infringement or taking of property rights?

- Does requiring a costly geotechnical report to support a protective bulkhead common to a single family residence violate the WAC which says it is exempt from the SDP process (although not exempt from the provisions of the SMA)?

- Does asking a geotechnical engineer to predict that erosion will or will not occur to a point that a primary structure will be threatened within 3 years place this professional in a legally sensitive position, especially in the case of a single

unusual storm event? In speaking with one of the most experienced geotechnical engineers on Lake Washington he said he would not be willing to sign such a report due to the liability and because it is too great a liability?

- When looking for a definition of pier repairs it is important that the city review the guidance under SDP and SEPA exemptions in the WAC. Assigning a % on pier repair and/or replacement is impractical since the entire pier and most piles deteriorate at a similar rate. I have included the sections that we use for exemption in regard to repairs (and even replacements) below. I have also included the wording for a protective bulkhead.

WAC 173-27-040

Developments *exempt from substantial development permit* requirement.

(b) Normal maintenance or repair of existing structures or developments, including damage by accident, fire or elements. ***"Normal maintenance" includes those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition. "Normal repair" means to restore a development to a state comparable to its original condition, including but not limited to its size, shape, configuration, location and external appearance, within a reasonable period after decay or partial destruction***, except where repair causes substantial adverse effects to shoreline resource or environment. ***Replacement of a structure or development may be authorized as repair where such replacement is the common method of repair for the type of structure or development and the replacement structure or development is comparable to the original structure or development including but not limited to its size, shape, configuration, location and external appearance*** and the replacement does not cause substantial adverse effects to shoreline resources or environment;

(c) Construction of the normal protective bulkhead common to single-family residences. A "normal protective" bulkhead includes those structural and nonstructural developments installed at or near, and parallel to, the ordinary high water mark ***for the sole purpose of protecting an existing single-family residence and appurtenant structures from loss or damage by erosion***. A normal protective bulkhead is not exempt if constructed for the purpose of creating dry land. When a vertical or near vertical wall is being constructed or reconstructed, not more than one cubic yard of fill per one foot of wall may be used as backfill. When an existing bulkhead is being repaired by construction of a vertical wall fronting the existing wall, it shall be constructed no further waterward of the existing bulkhead than is necessary for construction of new footings. When a bulkhead has deteriorated such that an ordinary high water mark has been established by the presence and action of water landward of the bulkhead then the replacement bulkhead must be located at or near the actual ordinary high water mark. Beach nourishment and bioengineered erosion control projects ***may*** be considered a normal protective bulkhead when any structural elements are consistent with the above requirements and when the project has been approved by the department of fish and wildlife.

Note- We routinely replace entire pier structures within the existing footprint including all piles under this WAC exemption because it is accepted as a common method of repair for the type of structure or development. We also repair and replace entire bulkheads under this WAC exemption as long as there is no expansion and it is within the same footprint or further upland.

WAC 197-11-800

Categorical exemptions.

The proposed actions contained in Part Nine are categorically exempt from threshold determination and EIS requirements, subject to the rules and limitations on categorical exemptions contained in WAC 197-11-305.

(3) **Repair, remodeling and maintenance activities.** The following activities shall be categorically exempt: The repair, remodeling, maintenance, or minor alteration of existing private or public structures, facilities or equipment, including utilities, involving no material expansions or changes in use beyond that previously existing; except that, where undertaken wholly or in part on lands covered by water, only minor repair or replacement of structures may be exempt ***(examples include repair or replacement of piling, ramps, floats, or mooring buoys, or minor repair, alteration, or maintenance of docks)***. The following maintenance activities shall not be considered exempt under this subsection:

(a) Dredging;

(b) Reconstruction/maintenance of groins and similar shoreline protection structures; or

Note: We routinely replace entire pier structures using this WAC exemption. The threshold is typically up to 50% of the piles under an exemption and if we replace more than 50% it must go through SEPA review. In every case where SEPA review is required the result is a Determination of Non-Significance.

- ***The staff should reconsider its position on the 4 foot maximum width for pier walkways. This will discourage anyone with an existing walkway wider than 4' from replacing their pier in a new location or with a more fish***

friendly design and they will simply hold on to the wider walkways through the repair and maintenance process. I cannot overemphasize that the RGP-3 "requirements" are only guidelines and the Corps has approved numerous walkways wider than 4 feet since the RGP-3 has been in effect. The current process for new piers between WDFW and the Corps has done a good job of limiting pier walkway widths and there is no need for the City to include this dimensional standard in the SMP. The restriction would be counterproductive.

*While the Houghton Community Council recommendation for a maximum walkway width may discourage many from replacing their existing piers, it is reasonable for a ***new*** pier. ***It should be stated this is for new piers and not replacement piers***.

- ***As emphasized on several occasions, use of the RGP-3 guidelines in any way for the SMP is problematic since the SMP is not flexible but the Corps RGP-3 is.*** Strict application of this document solely based on DOE using it to declare what does and does not result in a "no net loss" is misapplication of the document's original intent. The RGP-3 was designed to result in a "Not Likely to Adversely Affect" (NLAA) listed species and critical habitat under Section 7 of the Federal ESA. It is not the only way to have a NLAA determination under the federal review process. I can provide projects approved by the Corps, WDFW, DOE, Tribal Agencies, and local governments that are 2 and 3 times larger than what is listed in the RGP-3 and include walkways wider than 4 feet and ELLS up to 8 or 10 feet wide. Each of these received the same NLAA Determination as the RGP-3 after all aspects of the projects were reviewed. ***DOE has placed pressure on local governments to use the RGP-3 guidelines in meeting the no net loss goal without research and understanding of how the RGP-3 is actually used and this is causing major problems because the RGP-3 was not designed as SMP guidelines.***

- I have contacted the Corps of Engineers to request examples of projects on Lake Sammamish and Lake Washington that have used the PBE for Shoreline Protection Alternatives since its inception in December 2007 and the Project Manager stated she could only think of a couple projects. Over the span of nearly 15 months if the 3 recommended methods were reasonable and effective one would think numerous projects would be submitted.

The science on Chinook recovery does not support what the City is recommending on bulkheads and the RGP-3 continues to be referenced even though it is ***very flexible*** and has been the approval process used for less than 5% of projects on Lakes Washington and Sammamish. Simply put; it is flawed and problematic but works because it is flexible and can be used as a reference BE.

The process is moving quickly and the brakes need to be applied before a severely flawed program is adopted. I encourage the staff, Planning Commissioners and City Council Members to exhaust every effort in protecting their citizens from allowing this to happen.

Thank you for your time. I understand this is a complex and taxing issue and you are doing the best you can. I look forward to hearing from someone on these issues.

Respectfully,

Dave Douglas
Permit Coordinator
Waterfront Construction, Inc.

Teresa Swan

From: Allen Schwartz [allenschwartz@hotmail.com]
Sent: Wednesday, April 01, 2009 8:18 AM
To: robth@redcomm.com; robertc@thielsen.com; RLSTYLE; Jim Tosti; nelsonmb@gte.net; Richard Sandaas; patriciadorratcague@hotmail.com; anndonjenkins@hotmail.com; scjm@ckwmail.com; Teresa Swan
Cc: Paul Stewart; CLAUSON Stacy A
Subject: Re: Shoreline Property Owner Focus Group meeting on April 9, 2009

Teresa Swan,

I can attend an April 9 meeting. A couple suggestions on meeting the state guidelines:

1. I believe some waterfront owners would voluntarily plant shoreline vegetation if they didn't then get trapped into a requirement to hire an arborist and get a permit to later trim or change the vegetation. Pursue encouraging planting shoreline vegetation by removing this risk.

2. I believe some combination of large rock and cobble placed outside a hard bulkhead could be helpful in evolving toward the desired shoreline. As I believe a soft shoreline is not feasible for a large part of Kirkland's Residential-L property, this approach may be helpful.

My three major concerns with the Shoreline Management Plan are:

1. Tying any upland development (major or minor) to a requirement to:
   a. replace a hard bulkhead with a soft shoreline
   b. replacing a dock with one meeting the new guidelines
   c. plant shoreline vegetation with the new requirements including the 5 year monitoring plan

2. The proposed waterfront setback for Residential-L is being changed to match the existing mean setback. This means about half of these properties will now become non-conforming. What are the consequences, now and in the future, for these new non-conforming properties?

3. I believe a soft shoreline is not feasible for a significant portion of Kirkland's Residential-L due to the large wave action we are exposed to. I think the SMP should exclude the need for a geotechnical report for many properties based on their location and lot characteristics.

Thank you for scheduling this meeting and allowing input from the waterfront owners,

Allen Schwartz

----- Original Message -----
From: Teresa Swan
To: robth@redcomm.com ; robertc@thielsen.com ; RLSTYLE ; Jim Tosti ; nelsonmb@gte.net ; Richard Sandaas ; patriciadorratcague@hotmail.com ; anndonjenkins@hotmail.com ; scjm@ckwmail.com ; Allen Schwartz
Cc: Paul Stewart ; CLAUSON Stacy A
Sent: Thursday, March 26, 2009 3:15 PM
Subject: Shoreline Property Owner Focus Group meeting on April 9, 2009

To Shoreline Property Owners and other Interested Parties:

On April 9, 2009 from 6:30 to 8pm, the Planning Commission is available to meet with a focus group of 8-10 shoreline property owners to discuss concerns and issues on the update to the Shoreline Master Program. The purpose of this meeting is to get a better understanding of the issues unique to living next to Lake Washington and to identify approaches for policies and regulations that provide an appropriate balance between the protection of ecological functions and the use and enjoyment of property.

Please be prepared to suggest specific ideas for consideration by the Planning Commission that will meet the standards required by the state guidelines.

In preparation for the meeting, we invite you to visit our website at: http://www.ci.kirkland.wa.us/depart/Planning/Code_Updates/Shoreline_Master_Program_Update.htm. A draft of the proposed regulations is provided for your review.

The meeting will be held at City Hall in the **Peter Kirk Room** which is accessed through the south entrance (opposite the main north entrance to the Council Chambers).

If you are able to attend, by April 6th, please **RSVP and provide us with your top 2 to 3 key topics** that you would like to discuss at the meeting relating to the shoreline regulations being considered. We will prepare an agenda based on your input.

We hope that you can attend.

Teresa Swan
Senior Planner
(425) 587-3258 Fax (425) 587-3232
tswan@ci.kirkland.wa.us
City of Kirkland
123-5th Ave
Kirkland, WA 98033

Tuesdays-Thursday 8:45pm to 5pm

Please don't print this e-mail unless you really need to. Reduce, Reuse, Recycle.

From: Daved [mailto:Daved@waterfrontconstruction.com]
Sent: Thursday, April 02, 2009 8:09 AM
To: CLAUSON Stacy A
Cc: Mark Nelson
Subject: RE: HAVE THE DEVELOPMENT STANDARDS FOR PIERS IN THE DRAFT SMP BEEN REFINED OR ARE THEY STILL A TOPIC FOR DISCUSSION DURING APRIL MEETINGS?

Hi Stacy,

Can I get a copy of the pier regulations you will be recommending? If the pier regulations currently in the draft are what the City is recommending there are some major problems I see. It seems the City continues to make things far more complicated than necessary and is going out of their way to implement much stricter regulations than required. If I wasn't in this business or Kirkland was the only SMP Update I was attending I would probably be unaware of this fact like most of the property owners, PC and CC Members. Other local governments are doing much less, keeping things simpler and will achieve the same approval from DOE as Kirkland.

On another note, I also am waiting for the latest minutes from Seattle's Citizen Advisory Board where I was informed at the Governor's ORA Meeting last week in Kirkland that they are allowing existing bulkheads to be replaced outright whether or not a primary structure is threatened. I won't believe it until I see it but if they are this will set a precedent for property owners to question why Kirkland and others are not doing the same and could also set the stage for an appeal of the SMP or future legal action. I'll let you know when I get it.

It's as if there is an unprecedented environmental push from DOE, the biological consultant and Kirkland staff for some reason. I can't explain it and it didn't look like it was going to go in that direction when things first began but many months later it seems as if public meetings may simply be for show and most input has fallen on deaf ears and a predetermined agenda will be accomplished regardless. I hope my perception is wrong but I've been around the block more than once.

I appreciate your time and efforts.

Thanks,
Dave**From:** Daved [mailto:Daved@waterfrontconstruction.com]
Sent: Thursday, April 02, 2009 8:09 AM
To: CLAUSON Stacy A
Cc: Mark Nelson
Subject: RE: HAVE THE DEVELOPMENT STANDARDS FOR PIERS IN THE DRAFT SMP BEEN REFINED OR ARE THEY STILL A TOPIC FOR DISCUSSION DURING APRIL MEETINGS?

Hi Stacy,

Can I get a copy of the pier regulations you will be recommending? If the pier regulations currently in the draft are what the City is recommending there are some major problems I see. It seems the City continues to make things far more complicated than necessary and is going out of their way to implement much stricter regulations than required. If I wasn't in this business or Kirkland was the only SMP Update I was attending I would probably be unaware of this fact like most of the property owners, PC and CC Members. Other local governments are doing much less, keeping things simpler and will achieve the same approval from DOE as Kirkland.

On another note, I also am waiting for the latest minutes from Seattle's Citizen Advisory Board where I was informed at the Governor's ORA Meeting last week in Kirkland that they are allowing existing bulkheads to be replaced outright whether or not a primary structure is threatened. I won't believe it until I see it but if they are this will set a precedent for property owners to question

why Kirkland and others are not doing the same and could also set the stage for an appeal of the SMP or future legal action. I'll let you know when I get it.

It's as if there is an unprecedented environmental push from DOE, the biological consultant and Kirkland staff for some reason. I can't explain it and it didn't look like it was going to go in that direction when things first began but many months later it seems as if public meetings may simply be for show and most input has fallen on deaf ears and a predetermined agenda will be accomplished regardless. I hope my perception is wrong but I've been around the block more than once.

I appreciate your time and efforts.

Thanks,
Dave

Teresa Swan

From: Daved [Daved@waterfrontconstruction.com]
Sent: Friday, April 03, 2009 10:28 AM
To: CLAUSON Stacy A; Paul Stewart; Teresa Swan; Mark Nelson
Cc: Richard Sandaas; vanskamok@verizon.net; formikecollins@comcast.net; kathymrichardson@yahoo.com; Gregory W. Ashley; daryl; ken@sethney.com; donovan@donovantracy.com
Subject: COMMENTS ON 2-13-2009 AND 3-162009 SMP DOCUMENTS AND SLIDE PRESENTATION PRESENTED TO SHORELINE HOMEOWNERS
Attachments: Kirkland SMP Response 4-3-2009.doc

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Paul, Stacy, Teresa and SMP Interested Parties of Record,

I have reviewed the latest Kirkland documents and am concerned at the general direction the SMP continues to head, the failure to recognize what is going well with the current regulatory process and the improvements made, and the amount of inaccurate information still being distributed. It also seems the city is more interested in a more restrictive program update that exceeds minimum DOE requirements at the cost of property owners.

I have attached my comments in hopes of bringing balance back to the process and providing factual information based on working knowledge. Please pass this to Commission and Council members.

Thanks,
Dave Douglas

Teresa Swan

From: RLSTYLE [rlstyle@aol.com]
Sent: Saturday, April 04, 2009 3:59 AM
To: Teresa Swan; Paul Stewart
Subject: Mudslide hits 8 waterfront homes on Whidbey Island

The $2.3 million to improve Juanita Creek will attempt to improve the environmental settings for beavers. As I previously asked, what about the environment for those who live down water from the beaver dams that will be built. The recent mudslide incident on Whidbey Island was caused by beavers.

Shoreline planning in an urban environment must protect residential properties.

Mudslide hits 8 waterfront homes on Whidbey Island

Please make sure the Planning Commission understands the environmental consequences of beavers and other waterfront creatures have on residential homes. They probably are not compatible.

Sincerely,

Robert L. Style

Teresa Swan

From: Allen Schwartz [allenschwartz@hotmail.com]
Sent: Saturday, April 11, 2009 10:49 AM
To: eshields@ci.kirklqand.wa.us; Paul Stewart; Teresa Swan; sclauson@lcog.org
Cc: Randy Zeiler; rlstyle@aol.com; eride@msn.com; kharrang@hotmail.com; Mark Nelson; Rob Horwitz; Robert Conner; Jim Tosti; Patricia Dorratcague
Subject: Shoreline setbacks

Teresa Swan,

Please forward this E-mail to members of the Kirkland Planning Commission. I don't have their E-mail addresses.

Thanks,
Allen Schwartz

To: Eric Shields
Paul Stewart
Teresa Swan
Stacy Clauson
Kirkland Planning Commission

cc: Waterfront focus group

Thank you to the Kirkland Planning Commission, the Kirkland Staff, and representatives from DOE and Waterfront Construction for the informative and helpful meeting on April 9. Thank you also for the handout material which addressed many of the issues raised by us waterfront owners. I regret I did not read the handout material prior to the meeting as it already addressed some of the questions I ask. After reviewing this material and the meeting discussion, I would like to offer some additional comments on the subject of setbacks.

Shoreline Setback Issue

The Shoreline Management Plan proposes to change the Residential-L lake setback rules. There is nothing I am aware of in the federal or state rules that directly control shore setbacks. This change is proposed to ensure no net loss of ecological functions. The only tie between shoreline setback and ecological function, I am aware of is WAC 173-26-231 (3)(1) which basically states "Residential development should be sufficiently set back from shorelines vulnerable to erosion so that structural stabilizations are not required to protect such structures". I believe most of Kirkland's Residential-L lots already require hard structural stabilization due to their wind exposure, lot elevations and lot depth. So applying no net loss to lots already lost for soft shorelines has no benefit.

That said, there is a need to have control over lot setbacks. So let's compare the existing regulations to the proposed regulation.

Existing Regulation

15 feet, 15% of lot depth, or average of adjoining lots.

In my 38 years on 5th Ave W, there has been very little decrease in house setbacks, despite several complete tear downs and rebuilds. This is because the 15 foot rule is purely academic and the average of adjoining lots governs. This means only about half of the lots can move closer and then, not by much. So this rule has been effective in preventing any significant creep closer to shore. Considering major remodels for any property only occur once in many decades, this rule can continue to be effective. If necessary, supplement this rule to not allow decreased setback if it would transition the property from "suitable to a soft shoreline" to "requiring a hard shoreline".

With this rule, all homes are compliant with the setback requirements. With the supplemented rule, no net loss is assured.

Proposed Regulation

35% of the average parcel depth except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet.

This regulation means about 50 percent of the existing homes that are now setback compliant will become non-compliant. If one of these home owners wants to expand a now non-compliant portion of their home they can buy back the compliance that was taken away by mitigation. The table in section 83.360 of the SMP shows the amount that can be bought for a corresponding mitigation.

Using a typical lot depth of 120 feet, estimated costs for some sample mitigations are as follows:

Buy 12 feet by replacing a hard shoreline with a soft shoreline. This includes restoring the shoreline to a natural or semi-natural state. I assume this includes the new vegetation requirements with the 5 year monitoring plan.

	Initial cost	Annual maintenance
Shoreline conversion;	$50,000 - $100,000	$2,000 - $4,000
Vegetation	$2,000 - $4,000	$500 - $1,500

This assumes a soft shoreline is feasible, which for many lots is not.

Buy 9 feet by replacing 15 feet of hard shoreline and restoring shoreline.

Shoreline conversion	$10,000 - $25,000	$500 - $1,000
Vegetation	$2,000 -$4,000	$500 - $1,500

Buy 2.4 feet by providing 15 feet of vegetation in setback area

Buy 2.4 feet by limiting lawn area in setback to 50%

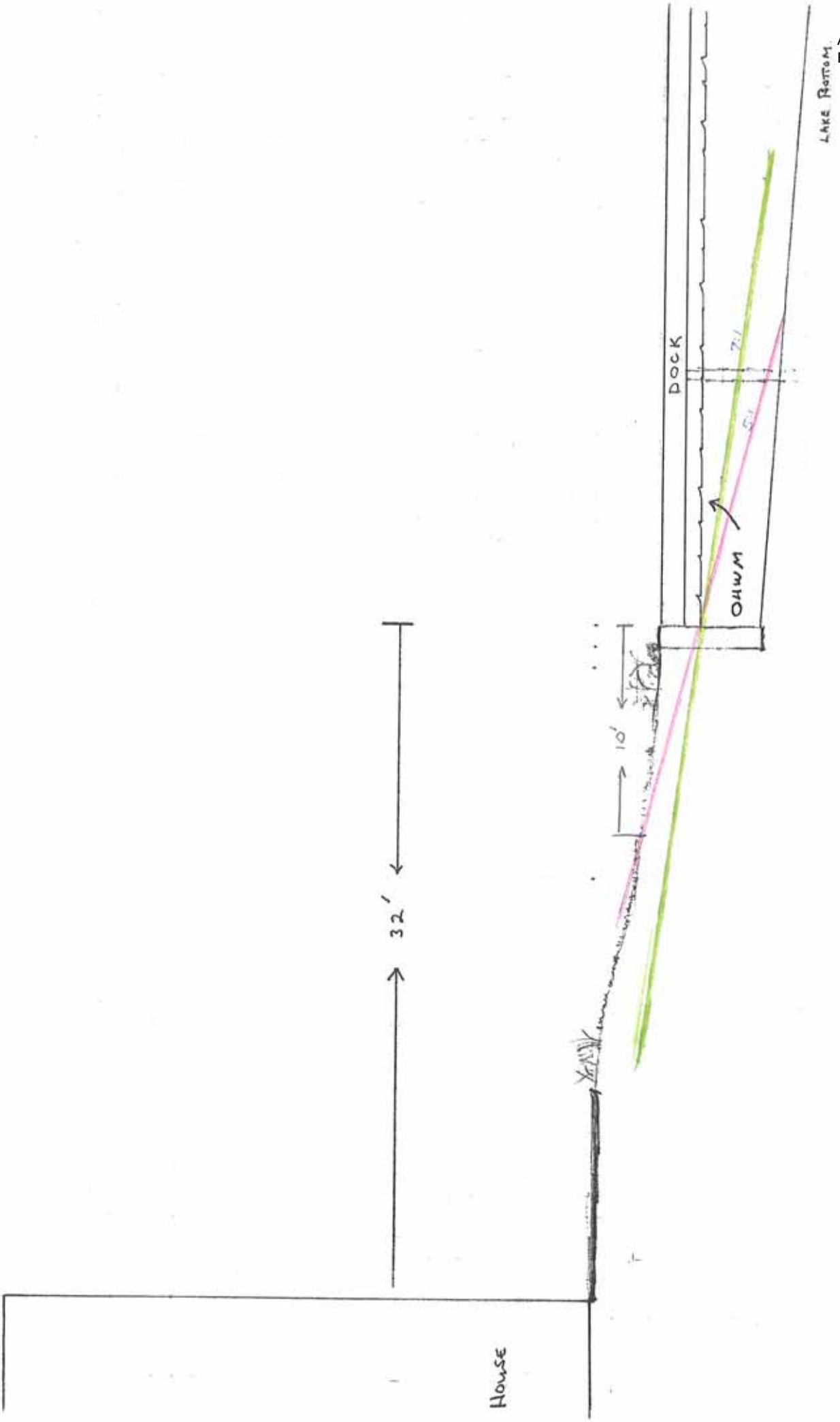
Meanwhile for the other half of the lots which are set back greater than 35% of lot depth they can immediately move forward with out mitigation. It must be assumed these moves forward are no net loss.

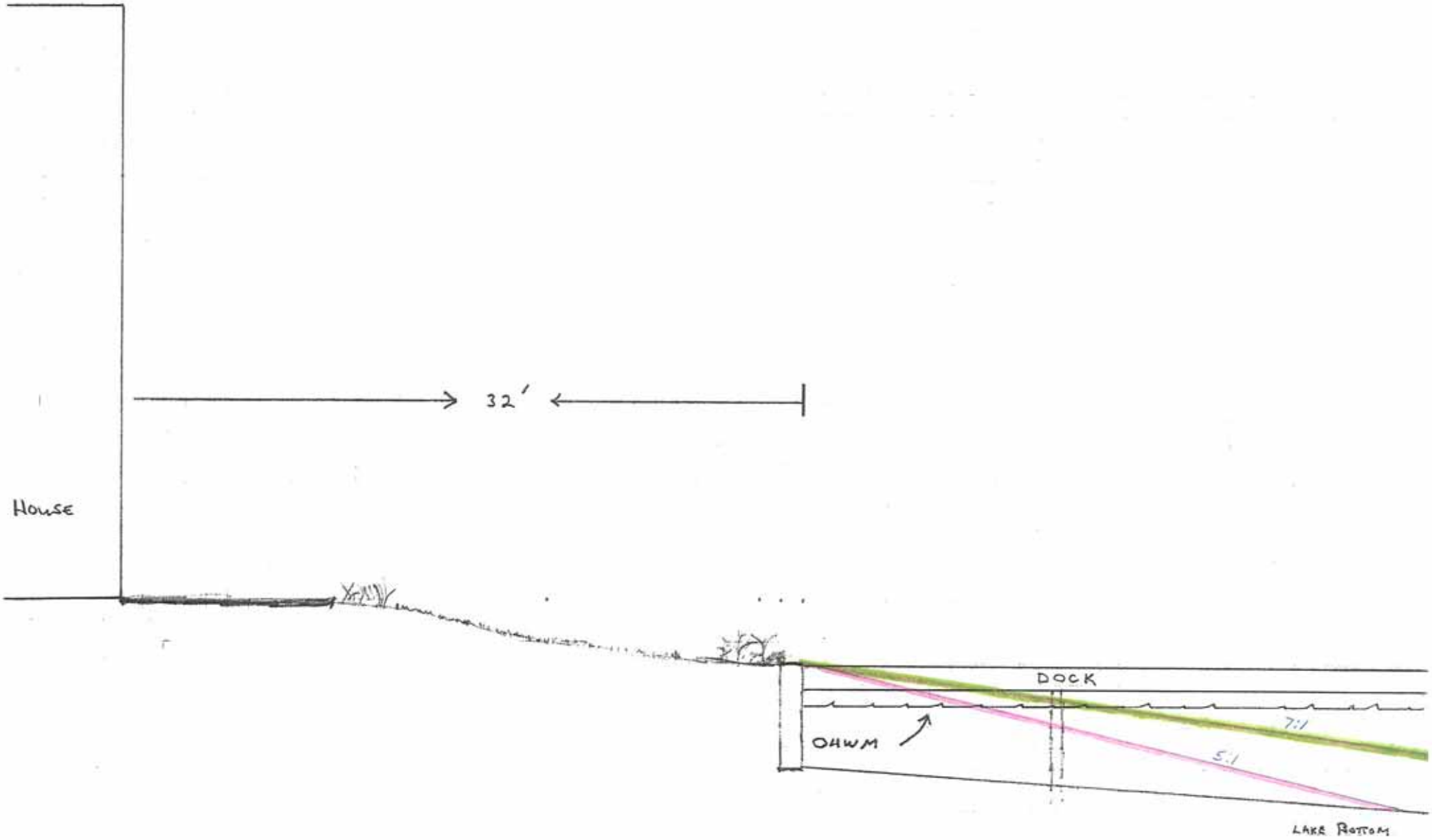
Summary

I believe the proposed setback rules are no more effective than the existing setback rules in controlling lot setbacks. In each case about half of the homes could move forward (generally by small amounts). If the issue is losing the ability for a soft shoreline, then tie setbacks to that.

I believe the proposed rules have gone beyond no net loss and beyond what is required by the federal and state regulations. They seem oriented to forcing home owners to bear the burden of restoration at large costs to them.

Allen Schwartz
409 5th Ave W
Kirkland, WA 98033
425-827-5183
allenschwartz@hotmail.com


LAKE BOTTOM
DOCK
7:1
5:1
OHWM
10'
32'
House



ATTACHMENT 15
HCC 5/20/09

Teresa Swan

From: Bob [mail@theflip.com]
Sent: Thursday, April 09, 2009 10:16 AM
To: Teresa Swan
Subject: Soft bulkhead design

Message from **Bob:**

This wind storm came in on March 31. The repaired bulkhead to the new design standards did little to attenuate the wave force. The spawning gravel was useless. Cobbles show slope from the top of bulkhead . Because the city's design does not do the job, the city should pay for a bulkhead that does.

Click on a video below to watch it:

Mar 31 2009 - VID00016
Video Length **0:50**
Click here to watch

Mar 31 2009 - VID00017
Video Length **0:25**
Click here to watch

To learn more about the Flip Video Camcorder, **click here**.

Teresa Swan

From: Eric Shields
Sent: Wednesday, April 15, 2009 9:04 AM
To: Paul Stewart; Teresa Swan; 'CLAUSON Stacy A'
Subject: FW: Status of shoreline recommedations

Eric Shields
Director
Kirkland Dept. of Planning & Community Development

From: RLSTYLE [mailto:rlstyle@aol.com]
Sent: Wednesday, April 15, 2009 4:16 AM
To: Eric Shields
Subject: Status of shoreline recommedations

Eric:

The shoreline owners had some very good recommendations at the Thursday's meeting with the Planning Commission, one of which would be easy to implement and would prevent the severe wave action as seen in the video I sent to Paul and Teresa.

The sloping of the cobble from the bulkhead as approved by some agency, I believe I heard it was Fisheries, starts at too low of a point from the ordinary high water mark to do any good for at least 7 months of the year. If the sloping is not done properly, properties remain in danger of erosion. All the agencies including the Planning Commission should be shown the video so they can consider removing the spawning gravel requirement and change the point at which sloping should occur. As it is now, it doesn't make sense. What ever agencies are involved, they should not ignore the laws of nature in their best available science.

Sincerely,

Bob Style

Teresa Swan

From: Daved [Daved@waterfrontconstruction.com]
Sent: Monday, April 20, 2009 7:48 AM
To: MPaine@bellevuewa.gov; Jean.White@kingcounty.gov; CBEAM@REDMOND.GOV; peterr@ci.issaquah.wa.us; jding@ci.kenmore.wa.us; EConkling@ci.renton.wa.us; mvannostrand@ci.sammamish.wa.us; Margaret.glowacki@seattle.gov; mhgreen@comcast.net; Harry.Reinert@kingcounty.gov; SBennett@ci.lake-forest-park.wa.us; Paul Stewart; travis.saunders@mercergov.org; george.steirer@mercergov.org; jobu461 @ECY.WA.GOV; Matt.torpey@mercergov.org; Teresa Swan; Stacy Clauson; rgrumbach@medina-wa.gov; psko461@ECY.WA.GOV
Cc: becky@marinellc.com; eride@msn.com; raa@vnf.com; nelsonmb@gte.net; donovan@donovantracy.com; vanskamok@verizon.net; formikecollins@comcast.net; kathymrichardson@yahoo.com; ken@sethney.com; greg@shoreline-permitting.com; Scott.Stolnack@kingcounty.gov; Yvette.Lizee-Smith@kingcounty.gov; Mary.Jorgensen@kingcounty.gov; kharrang@hotmail.com
Subject: BIAW WINS DECISION AGAINST WHATCOM COUNTY

Dear SMP Point of Contact and Interested Parties,

FYI

Please review the article below from the Bainbridge Shoreline Homeowners website and consider whether or not it applies to the SMP Update for your city/county. It may be the first of many future lawsuits if due diligence, respect for the process, private property rights and consideration of public input is not made a priority during the SMP Update process.

The article states the County Council "made a hasty decision to adopt Ecology's substantive amendments wholesale." Based on personal and direct involvement with several SMP Update processes thus far the same thing is being done locally.

The pending issue in the last paragraph has yet to play out but is important locally as DOE and some local governments push overly restrictive standards on property owners despite public and professional input, opposition and a request for balance. It challenges Whatcom County declaring all county shorelines as critical areas without regard to current shoreline conditions, including existing development. This could prove important for highly urbanized and developed residential lakes like Washington and Sammamish.

Although the decision is based on a couple of procedural issues specific to Whatcom County it lays the foundation for future challenges and should send a strong message that the public and the process must be respected.

You can review this excellent and informative website (which also provides some scientific articles) at http://bainbridgeshorelinehomeowners.wordpress.com/.
I am interested in any feedback you may have regarding how this may or may not impact your local SMP Update process or if you feel it may simply be the result of a procedural error.

Thanks,
Dave Douglas

Whatcom County loses challenge to Shoreline Master Plan

Published April 16, 2009 Legal Matters , Regional Planning , Shoreline Master Program Updates 0 Comments
The Building Industry Association of Whatcom County (BIAWC) won a major victory April 14, before Skagit County

Superior Court in the challenge to the County's adoption of a new Shoreline Management Plan (SMP). Superior Court Judge Michael Rickert ruled that the Whatcom County Council majority violated the County Charter by rushing through approval of the SMP last August by Resolution instead of by a formal Ordinance. The failure to use the Ordinance procedure avoided public scrutiny through a reopening of the public process and foreclosed the normal right of the Executive to veto Council action. BIAWC intervened in this action, and joined plaintiffs Citizens for Rational Shoreline Planning and Ron Jepson in this case.

At the time the resolution was passed, BIAWC's Governmental Affairs Director Mary Dickinson specifically told the County Council that adopting the SMP by Resolution violated the County Charter, but the County Council majority ignored this advice and rushed to adopt the SMP. She reminded the Council that language in the County Charter specifically states that resolutions do not have force in law. Before ruling in BIAWC's favor, **Judge Rickert questioned the County during the argument as to why he should allow Whatcom County an exemption from the rules, when the County comes before the Court often to demand strict application of County rules from its citizens.**

BIAWC's Government Affairs Director Mary Dickinson said: "The action by the County Council majority last August clearly violated the rights of County citizens by rushing through the approval without complying with the obvious requirements in the County Charter. We are proud that the judge recognized the importance of our Charter, a document created by Whatcom County's citizens, and reminded the Whatcom County Council majority and County staff that they are not above the law."

BIAWC's attorney Charlie Klinge said:
The Court decision means that the County approval of the SMP last August was illegal. That means that any person applying to the County for a shoreline permit since last August is entitled to have that application decided based on the old SMP, and not on the new SMP. The new SMP rules contain a land grab designed to prevent property owners from using a 100-150 foot buffer area next to the water.

BIAWC Executive Director Bill Quehrn said:
We expect the County and the State to immediately implement this court ruling by recognizing that all prior shoreline applications must be reviewed under the old SMP, and not the new objectionable SMP rules. The action by the County Council majority last August was a blatant disregard of the County Charter, which we could not ignore. This is not merely a builder issue, but one that seriously impacts property owners and private citizens.

Background: Whatcom County commenced a comprehensive update of its SMP in approximately August of 2004. The County's public process culminated in the adoption of an SMP via ordinance 2007-017 on February 27, 2007, which would not take effect until approved by the Washington State Department of Ecology. Ecology subsequently made its approval of the SMP contingent upon the County's adoption of 13 pages of substantive amendments. On August 5, 2008, rather than making these amendments subject to public scrutiny and reopening the public process, the County Council made a hasty decision to adopt Ecology's substantive amendments wholesale and even foreclosed the normal right of the Executive to veto Council action.

The County's new SMP applies new land use regulations to all unincorporated land touching marine waters, larger rivers, and major lakes including Lake Whatcom and Lake Samish. The County plan generally mandates a 100-150 foot buffer and setback for all waterfront property requiring property owners applying for almost any permit to permanently revegetate the buffer area with native plantings. In other words, **any waterfront property owner, including existing homes, seeking permits even for minor remodeling projects will be faced with the County's demand to take that buffer area, without compensation, for native plantings to benefit the public.** The County seeks to impose this onerous requirement on all properties even those with existing patios and landscaping in the buffer area whenever any permits are sought.

BIAWC has also challenged the SMP as an intervenor before the Western Washington Growth Management Hearings Board alleging that the County violated state law by (1) intentionally foreclosing public comment and input before making a rash decision in August of 2008 to enact a new SMP, and (2) designating all County shorelines as environmentally critical areas without regard to current shoreline conditions, including existing development. A decision by the Growth Board is expected next week.

Teresa Swan

From: Daved [Daved@waterfrontconstruction.com]
Sent: Monday, April 27, 2009 12:41 PM
To: CLAUSON Stacy A; Teresa Swan; Paul Stewart
Cc: nelsonmb@gte.net; rlstyle@aol.com
Subject: COMMENTS ON 2/28/09 RESPOJNSES TO SHORELINE HOMEWONERS AND CURRENT DRAFT SMP

Hi Stacy, Teresa and Paul,

Hope you all are well. I was unable to attend Thursday's meeting but I will have comments on each of the above documents. Our company, like many others, needs to be cautious during this economic downturn so my time is limited.

I am preparing a letter for the Planning Commission and Community Council because I am very concerned and a little frustrated (which I bet most of your shoreline homeowners are also) at where the staff is still directing the Commission and Council with the SMP Update. The SMA is about balance but the SMP Update process in the City of Kirkland is not reflective of that.

There are some areas that the planning department and SMP should not address and the draft SMP is reaching much further than DOE requires. This is making the Kirkland process much more complicated, onerous, cumbersome, time consuming and restrictive than needed. Why staff would purposely push for more than what DOE is requiring is very puzzling. No one from the public sector is aware of the discussions that take place during meetings with DOE or when local planners gather in monthly or quarterly meetings to discuss ways to restrict piers and bulkheads when the substantiated impacts are in the rivers and streams, and a decline in returns from saltwater. Is the City willing to study the whole picture or is the mere presence of Chinook along the Kirkland shoreline enough to justify overly strict regulations? Has anyone from the City reviewed the scientific studies on its own website? They simply raise more questions regarding the science behind the actions!

While each of you has expressed appreciation for our involvement (and that of property owners) in the process and the time and resources our company has contributed as a highly qualified "on the street" marine permitting and construction contractor, I think it is safe to say that many people feel the City is going through the motions but failing to take information from non-regulatory parties serious enough to challenge your own way of thinking and that of DOE. Minds appear to be made up as part of a strategic movement by local governments and state and federal regulatory agencies set on pushing their agenda regardless of the facts and the improvements it will make.

Several of the staff responses to shoreline homeowners reveal either a total lack of understanding or an unwillingness to be practical and reasonable on behalf of your citizens.

I haven't received a response to my letter of April 3, 2009 which contained several questions and provided the staff and others with clear and concise information and explanations on quite a few issues.

I will complete the letter in the next few days and would like it forwarded to the Commission and Council Members who I believe want to make the best and most well informed decisions possible. If the City fails to provide an SMP that respects all stakeholders, applies "science" in balanced way, formulates changes proportionate to causative impacts, and recognizes the improvements already made since the City's shoreline inventory was completed in 2006 as a result of other state and federal agency regulations, it will be a flawed document sure to be challenged.

Thank you,
Dave Douglas

Teresa Swan

From: Daved [Daved@waterfrontconstruction.com]
Sent: Monday, May 04, 2009 9:05 AM
To: Mark Nelson; Daved; Cathy Beam; MPaine@bellevuewa.gov; Peter Rosen; jding@ci.kenmore.wa.us; EConkling@ci.renton.wa.us; mvannostrand@ci.sammamish.wa.us; Margaret.glowacki@seattle.gov; mhgreen@comcast.net; Harry.reinert@kingcounty.gov; SBennett@ci.lake-forest-park.wa.us; Paul Stewart; travis.saunders@mercergov.org; Jean.White@kingcounty.gov; george.steirer@mercergov.org; Burcar, Joe (ECY); Matt.torpey@mercergov.org; Teresa Swan; Stacy Clauson; Robert Grumbach; Skowlund, Peter (ECY); Travis Saunders
Cc: becky@marinellc.com; eride@msn.com; raa@vnf.com; Mark Nelson; donovan@donovantracy.com; vanskamok@verizon.net; formikecollins@comcast.net; kathymrichardson@yahoo.com; rlstyle@aol.com
Subject: RE: Bainbridge Shoreline Homeowners News

Dear SMP Update Party of Interest,

I encourage everyone to look at what is and has been taking place on Bainbridge Island over the past several years as private property owners unite to protect their property rights. The Bainbridge Shoreline Homeowners are very active and have done their homework. Although Bainbridge Shoreline Homeowners and the Bainbridge Defense Fund may seem aggressive and maybe a little over the top for most people's liking this was fueled by years of disregard, disrespect and a moratorium placed on property owners by the City which was later overturned. It is a natural occurrence and expected result when good people are pushed into a corner and rendered powerless against arrogant bureaucracy, politics and special interests.

Although it may look extreme and is taking place in salt water well west of Lake Washington and Lake Sammamish it may be an indication of what may take place on local shorelines if actions taken against private piers, bulkheads and property are overly restrictive or disproportionate to their known impacts based on the "science".

Up to this point waterfront property owners tend to appreciate their local governments but have a varying degree of mistrust for state and federal regulators, primarily aimed at WA DOE. These are the facts and local governments must guard against being viewed in the same light since they and their waterfront citizens are the primary guardians of local shorelines. Good, hard-working waterfront property owners are not looking for an opportunity to battle their local government like what has occurred on Bainbridge. It is vital that local government and their citizens maintain the teamwork and cooperation that has resulted in improvements along the shoreline over the last 5 to 10 years.

Even locally, new homeowner groups have been formed and law firms contacted as a result of proposed changes to the SMP's. This is why it is absolutely vital that SMP Updates are done with balance and respect. Without these two elements the "Battle of Bainbridge" could be "Coming Soon to a Shoreline Near You". SMP's should not read like penal codes for doing something wrong but be a document that recognizes and rewards property owners for doing something right, especially in cases of redevelopment.

If you are a local staff member or part of a homeowners group you may want to consult with someone on the questions below. Local coffers and private citizen funds can be put to better use in improving the environment rather than making land use attorneys rich and draining local and state resources and staff time trying to defend decisions, especially in this economy. The SMP Update requirements direct all available resources be used and the information on this website fits within that mandate.

Thank you,
Dave Douglas

Control + click on the text or heading below to access the article or document.

From: Mark Nelson [mailto:nelsonmb@gte.net]
Sent: Saturday, May 02, 2009 4:49 PM

To: Mark Nelson
Subject: Bainbridge Shoreline Homeowners News

You will find what is happening on Bainbridge Island interesting and relevant to Kirkland's Shoreline Master Program update.

From: Daved [mailto:Daved@waterfrontconstruction.com]
Sent: Friday, May 01, 2009 7:34 AM
To:
Subject: FW: Bainbridge Shoreline Homeowners News

Hi Guys,

Here is some interesting stuff. Enjoy the sun!!

Dave

From: Ken Sethney [mailto:ken@sethney.com]
Sent: Friday, May 01, 2009 7:16 AM
To: Daved
Cc: Gary Tripp
Subject: Re: Bainbridge Shoreline Homeowners News

Dave,

These are great questions for a land use attorney.

It is my understanding that WAC interprets RCW to clarify what action city, state and county governments are to take. It isn't "law", but it might be challenged or referenced in a lawsuit. What couldn't be?

I suspect there is plenty of illegal taking here, and as of 2006, the state Attorney General made it clear to all departments that they were to avoid illegal taking. See the newest story on our blog, "Planners must avoid unconstitutional taking of private property." You can download the AG's guidance document from our site.

Evergreen Freedom Foundation has set up a property rights center and is working with local groups to gather strength (money and numbers) to file suit on the constitutional issues. The director is Trent England... (360) 956-3482 or TEngland@effwa.org.

Ken

From: Daved <Daved@waterfrontconstruction.com>
To: Bainbridge Shoreline Homeowners <bi.shoreline@gmail.com>
Cc: gary@tripp.net
Sent: Friday, May 1, 2009 6:38:09 AM
Subject: RE: Bainbridge Shoreline Homeowners News

Hi Ken and Gary,

Hope all is well. I have couple of questions after reading the article below.

1) Under the update SMP requirements, most local governments will require property owners to only have a bulkhead if it is protecting a primary structure but not to protect their property. The WAC allows for the protection of property also.
Does this represent a taking of property and property rights?
2) Under the SMP Update, in order for property owners to have hard shoreline stabilization approved they must provide a geotechnical report substantiating that a primary structure will be threatened within 3 years if the stabilization is not installed? This involves costly guesswork on the part of a geotechnical engineer or essentially

requires an owner to allow property to erode until threat of damage or destruction to the primary structure is imminent.
Does this sound legal?
3) Replacement of an existing bulkhead has always been approved as a shoreline exemption as repair or maintenance of an existing structure if it is the common method of repair. Under the SMP Update, because of the caveat in the WAC "as long as if does not cause adverse impacts" and the new No Net Loss requirement the in-kind replacement of bulkheads will probably not be exempt or even approved.
Is this legal?
4) Similar action is being taken against pier repairs and replacements to try and pull them under DOE control based on best guess and inconclusive science.

Look forward to hearing from you.

Thanks,
Dave Douglas

From: noreply+feedproxy@google.com [mailto:noreply+feedproxy@google.com] **On Behalf Of** Bainbridge Shoreline Homeowners
Sent: Thursday, April 30, 2009 6:24 PM
To: Daved
Subject: Bainbridge Shoreline Homeowners News

Bainbridge Shoreline Homeowners News

Shoreline moratorium lawsuit to be filed.

Posted: 30 Apr 2009 08:28 AM PDT

The following is an April 22 memo to the mayor and city council from Gary Tripp, Director, Bainbridge Defense Fund: Bainbridge Defense Fund (a Washington non-profit) is assisting six plaintiffs, who will file a class action suit in Superior Court of the State of Washington against the City of Bainbridge Island for monetary damages arising [...]

Email this

Shoreline Master Program update process.

Posted: 30 Apr 2009 08:15 AM PDT

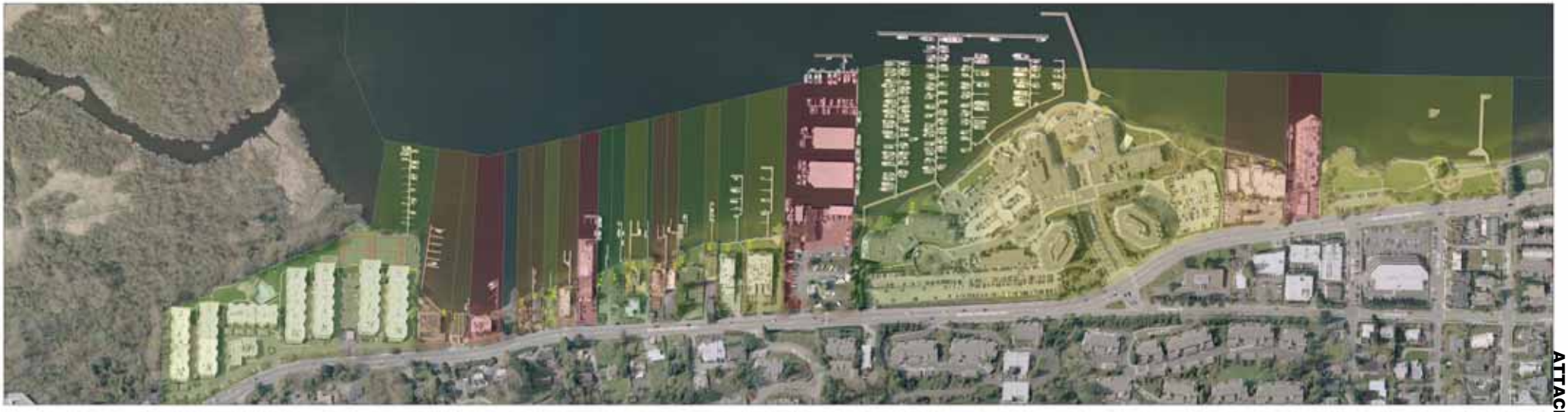
Local shoreline master programs (SMPs) regulate new development and use of shorelines along larger rivers, lakes over 20 acres and marine waterfronts. Guidance on this page is intended to help cities and counties updating their SMPs comply with Ecology's Shoreline Master Program Guidelines. For detailed information, visit the DOE website. Posted in Shoreline Master [...]

Email this

You are subscribed to email updates from Bainbridge Shoreline Homeowners
To stop receiving these emails, you may unsubscribe now.
Email delivery powered by Google

Inbox too full? Subscribe to the feed version of Bainbridge Shoreline Homeowners in a feed reader.

If you prefer to unsubscribe via postal mail, write to: Bainbridge Shoreline Homeowners, c/o Google, 20 W Kinzie, Chicago IL USA 60610



Primary Structure Setback Measurements - Sheet 1 of 2 - Map Scale 1" = 100'