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MEMORANDUM

To: Planning Commission

From: Stacy Clauson, Contract Planner
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Date: August 20, 2009

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

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II. RECOMMENDATION

Staff recommends that the Planning Commission:

1. Close the written record for the public hearing on the SMP;
2. Review public comments submitted since the Planning Commission meeting was held on July 23, 2009;
3. Begin deliberation on the proposed SMP; and
4. Either make a recommendation on the Shoreline Master Program to the City Council, or continue the matter to a future meeting.

II. **INTRODUCTION**

The revised draft regulations for the SMP are attached (see Attachment 1 for Chapter 83 KZC, Attachment 2 for Chapter 141 KZC and Attachment 3 for various Zoning Code changes to WDI, WDII and WDII). These regulations will also be discussed at the Houghton Community Council study meeting on August 24th; staff will report on the Houghton Community Council discussion and recommendation, if available, at the August 27th meeting.

The revisions to the draft regulations include changes made based on the Department of Ecology's preliminary comments on the draft SMP, public comments submitted as part of the hearing process before the Planning Commission and Houghton Community Council, as well as in response to issues identified by staff or issues posed by the Planning Commission or Houghton Community Council at their July meetings.

Staff has summarized both the Department of Ecology comments and public comments received during the public hearing process in Attachment 4, together with staff responses and a summary of changes, where those changes are recommended by staff in response to the issues raised.

In addition, staff has been working with representatives of the Kirkland Lakeshore Association (KLA), an organization representing single-family shoreline property owners. The KLA has worked with their legal counsel, Brent Carson of Gordon Derr LLP, to provide detailed comments and suggested edits to Chapter 83 (see Attachment 5). Staff has met with representatives of the KLA to review their comments and plan to also meet again to review changes made in response to these comments. Staff and in some cases the Department of Ecology have responded to these issues in Attachment 6.

Some of the key substantive changes were made since the July 23rd public hearing in the following areas of Chapter 83:

- Addition of definitions to Section 83.80 to ensure that all listed uses are appropriately defined;
- Reorganization of Section 83.300 addressing shoreline stabilization to improve clarity;
- Revisions to Section 83.360 addressing No Net Loss and Mitigation Sequencing to address when a Mitigation Sequencing analysis should be submitted and to address the role of cost in considering alternatives and mitigation;
- Revisions to Section 82.400 addressing Tree Management and Vegetation in Shoreline Setback. Vegetation placement provisions have now been consolidated in this section and additional provisions added addressing the availability of alternative planting to address view blockage from private property. In addition, staff has provided an alternative approach to the tree replacement provisions for the Planning Commission's input in Section IV below in response to the Houghton Community Council's ongoing concern about replanting requirements.
- Revisions to Section 83.550 addressing Nonconformances in response to some KLA concerns. It should be noted that nonconformances are a key concern of the shoreline property owners.

Staff wants to clarify miscommunication that may have occurred as part of the public hearings, which gave property owners the impression that they would be able to replace existing structures without bringing any nonconforming structures into compliance. This is not proposed under the draft regulations; instead, the draft regulations would require conformance with new setback standards if a property owner is proposing to make structural alterations to a roof or exterior wall that does not conform to the new shoreline setback provisions, except as permitted specifically under the special exceptions provided in Section 83.550. This is the same approach used to bring about gradual conformance to required yards throughout the city under the Zoning Regulations; and

- The addition of a new section addressing Emergency Actions.

Other changes are also proposed in additional sections as well. Please see Attachments 1-6 for more information.

III. BACKGROUND AND RESPONSE TO PC QUESTIONS

On July 23, 2009, the Planning Commission held a public hearing and continued the hearing to their August 13th meeting for written comments. They continued the hearing to their August 13th meeting for written comment and then at their August 13th meeting, and subsequently continued the hearing again to their August 27th meeting at the request of staff.

At the July 23rd meeting, the Planning Commission had posed several questions and requested some additional information on the following issues:

A. Topic: Scientific Studies

Planning Commission Question/Request for Information: Request for information on scientific studies.

Staff Response: The Shoreline Inventory and Analysis contains a bibliography that provides an overview of many of the major studies available as of 2006. Since that time, additional studies or compilations of studies of note have been completed, including (but not limited to) the following:

- Francis, T.B., D.E. Schindler, J.M. Fox, and E. Seminet-Reneau. 2007. Effects of Urbanization on the Dynamics of Organic Sediments in Temperate Lakes. Ecosystems. Vol. 10, No. 7/November 2007. Available at: http://students.washington.edu/tessa/Francis et al 2007 Ecosystems.pdf

- Jones and Stokes Associates (Jones and Stokes). 2006. Overwater Structures and Non-Structural Piling White Paper. Prepared for Washington Department of Fish and Wildlife. December 2006. Available at: http://wdfw.wa.gov/hcp/hpa_publications/ows_dec06.pdf

- Seattle Public Utilities and U.S. Army Corps of Engineers, Seattle District (SPU and USACE). 2008. Synthesis of Salmon Research and Monitoring – Investigations Conducted in the Western Lake Washington Basin. Draft Report. Review Draft October 20, 2008. Available at:

http://www.govlink.org/watersheds/8/pdf/LWGI_SalmonSyn123108.pdf

- Stanley, S., J. Brown, and S. Grigsby. 2005. Protecting aquatic ecosystems: A guide for Puget Sound Planners to understand watershed processes. Washington State Department of Ecology. Publication #05-06-027. Olympia, WA. Available at: http://www.ecy.wa.gov/biblio/0506027.html

- .A number of studies have been undertaken by the US Fish and Wildlife Service. For more information, see the following: http://www.fws.gov/westwafwo/fisheries/wwfish_projects.html

- In addition, the following information was compiled for the Programmatic biological evaluation for shoreline protective alternatives in Lake Washington: http://www.nws.usace.army.mil/PublicMenu/documents/REG/Programmatic_BE_for_Shoreline_Protection,_Lk_WA__Jan-08_.pdf

- In addition, King County's survey of Best Available Science addressing aquatic areas addresses information on aquatic buffers: http://your.kingcounty.gov/ddes/cao/PDFs04ExecProp/BAS-Chap7-04.pdf

B. **Topic: Shoreline Stabilization**

Planning Commission Question/Request for Information: Request for information showing the effectiveness of soft shoreline stabilization measures in protecting structures from erosion from waves over time.

Staff Response: Many of the long-term monitoring projects have been undertaken within Puget Sound. As noted by the Army Corps of Engineers in the Programmatic Biological Evaluation for shoreline protection, the same principles for shoreline protection apply to Puget Sound as Lake Washington.

Attachment 9 provides an evaluation of a number of different sites installed in Puget Sound and addresses actual performance of alternative mitigation measures employed under widely varying site conditions. The sites evaluated represent different site characteristics and some contain high wave energy typical of that found along Kirkland's shoreline. The low bank sites would be most similar to Kirkland's shoreline.

In addition, the Watershed Company has been involved with several installations of soft shoreline stabilization measures and, as part of this process, has been able to follow-up on sites after their initial installation. Attachment 10 contains photographs showing sites prior to installation, after installation, and several years later. The sites have remained stable over time.

C. **Topic: Zoning Code Changes**

Planning Commission Question/Request for Information: Requested response to the following issues:

- Garage setback issues raised by Robert Connor of Thielsen Architects;
- Setback issues along Lake Ave W raised by Mark Nelson;

Staff Response:

- Garage setback issues: The requirement for the additional front setback for garages only applies where there is a front property line (based on definition of the width of the adjacent street or easement), so it won't affect properties along the Lake Ave W, 5th Avenue West or Rose Point Lane easements. Thus, the requirement does not affect many small lot configurations. Staff does not recommend varying this standard for the shoreline area.
- Lake Ave W: Staff recommends revising the provision addressing front yard setbacks along 5th Ave W to also include the private easement portion of Lake Ave W as follows: The required yard along the east side of the private access easements known as 5th Ave W or Lake Avenue West is 0 feet.

D. **Topic: Wetland Buffer along Rose Pt. Lane**

Planning Commission Question/Request for Information: Respond to request from Robert Connor of Thielsen Architects to designate the west edge of the buffer protecting the Forbes Creek wetlands as terminating at the east side of Rose Point Lane rather than the west side.

Staff Response: Recently, as part of a wetland delineation determination completed in the area, the City's wetland consultant determined that the buffer functionally did extend across Rose Point Lane to the west side of the road. The determination of a wetland delineation is a technical question and not a policy issue.

The proposed regulations allow for the Planning Official to approve a modification of the required buffer to that portion of a wetland buffer that is divided by an improved right-of-way or structure, under certain conditions. If the applicant disagrees with the findings coming out of the delineation process, the applicant can address that issue through separate processes available in the code addressing wetland delineations.

Staff's recommendation is that the criteria remain in place as-is.

E. **Topic: Nonconformances**

Planning Commission Question/Request for Information: Requested response to the following issues:

- Nonconformance provisions raised by Robert Connor of Thielsen Architects, including:
    - **i.** Recommends a longer time frame be permitted for reconstruction of structures damaged due to fire or other casualty;

ii. Recommend deleting Section 83.550.5.b.4, which requires nonconforming accessory structures to come into compliance if the applicant is making an alteration to the primary structure, the cost of which exceeds 50 percent of the replacement cost of the structure
iii. Recommend amending Section 83.550.5.b to allow for greater than 10% addition to a non-conforming structure into the shoreline setback on the ground floor in order to provide more flexibility and obtain enhanced mitigation (Robert Connor).
iv. Recommend eliminating the limitation that prohibits successive additions within the shoreline setback with a 5-year time frame (Robert Connor).

Staff Response:

- Time frame for submittal of permits: Other nonconformance provisions addressing time frames for submittal of a building permit to rebuild a structure allow a 6 or 12-month time frame for submittal of a building permit. If the Planning Commission recommend extending the time frame in the SMP, it is recommended that the time frame for other provisions be re-evaluated in future amendments. Staff has proposed extending the time frame to 18 months.
- Nonconforming Accessory Structures: Requiring overall compliance of non conforming accessory structures on a property when significant investment is made on-site is a typical approach and specifically is also used in the critical area regulations in order to work towards gradual reductions of non-conformances.

  As a recent example on the shoreline, a property owner cleared a lot of all improvements and constructed a new home, but retained a non conforming shed located next to the water. Under current code, the City could not require the shed to be removed. Staff recommends that the provision addressing nonconforming structures be retained.
- Additions to Nonconforming Structures: Staff has concerns about whether providing broader allowance for enlargement of nonconformances will be consistent with Guidelines. Ecology has already commented that non-conformity should be minimized when possible. However, staff agrees that some additions should be permitted that would not further impact ecological functions. Staff has re-evaluated the provisions contained in Section 83.550.5.b and is recommending additional flexibility for upper story additions that do not increase the building footprint, since these do not increase the impacts.

F. **Topic: Applicability of RCW 90.58.270**

Planning Commission Question/Request for Information: Response to Barry Powell's comments on RCW 90.58.270, which appears to exempt certain provisions from applying to bulkheads and other structures installed prior to 1969.

Staff Response: The Department of Ecology has provided information to the City interpreting this provision (see Attachment 11). Based upon their review of the background regarding this provision, Ecology would suggest that the local SMP's provisions regarding nonconforming structures would apply to future development proposals of such structures,

just as they apply to any nonconforming structure built before enactment of the SMA.

IV. HOUGHTON COMMUNITY COUNCIL RECOMMENDED CHANGES

On July 27, 2009, the Houghton Community Council held their public hearing. They continued the hearing to their August 10th meeting for written comment and then at their August 10th meeting, and subsequently continued the hearing again to their August 24th meeting at the request of staff.

At the July 27th meeting, the Houghton Community Council identified the following issues that, if not addressed, could affect their recommendation on the SMP proposal.

a. Tree Management (Section 83.400)**.** The Houghton Community Council expressed continuing concerns with the tree management standards, commenting as follows:

i. The 3:1 replacement rate is too stringent and arbitrary
ii. Replanting provisions are too burdensome and act as a deterrent to tree preservation
iii. The provisions do not appropriately consider the impact of the replacement trees as they mature
iv. Concern about view preservation and use of property
v. Alternative compliance provisions should not require arborist/planner approval

Staff Response: Removal of existing significant trees is a key issue for the No Net Loss of ecological function provision along the shoreline area, and in general the Guidelines direct the SMP to look for opportunities to avoid and minimize impacts from activities, such as tree removal, and mitigate for functions lost as a result of removal. Specifically, the stated intent of the vegetation conservation provisions in WAC 173-26-2215) is to protect and restore the ecological functions and ecosystem-wide processes performed by vegetation along the shoreline. WAC 173-26-221(5)(c) notes that the SMP is required to establish vegetation conservation techniques that apply in the shoreline jurisdiction.

Staff has proposed to implement tree retention provisions specifically within the shoreline setback since vegetation in this area in particular provides key shoreline functions. Staff has proposed a replanting rate of 3:1 in order to address the temporal loss of vegetation that occurs.

As stated by the Department of Ecology in their comments to KLA (see Attachment 6): Ecology's interpretation of this standard is that tree replacement ratio is intended to support (make up for) functions that would be lost when a tree is removed. This is based on the reality that habitat functions associated with a larger mature tree could not be provided on a 1:1 ratio with a newly planted young tree. In other words, there is a temporal loss when a mature tree is removed and replaced with a young tree that may take many years to grow to a size equivalent to the original tree.

In order to further respond to the Council's continuing concerns about replacement rates, staff has designed the following new tree management concept for Houghton

Community Council input and consideration. This approach, unlike the current proposal, addresses and responds to the different functions that are provided by trees based on their size and type. As a result, staff believes that this is a better approach to managing trees along the shoreline, but also provides for reduced replacement rates for existing trees that provide lesser function and options for property owners to choose replacement provisions that best meet their needs.

Tree Replacement in Shoreline Setback

Removed Tree type	**Replacement Requirement**
1 conifer less than 24 inches in diameter as measured at breast height	For removal of confer tree up to 12″ in diameter: • Replace with 1 native conifer tree at least 6 feet in height measured from existing grade. For removal of conifer tree greater than 12″ in diameter but less than 24″ in diameter: • In addition to replacement tree required above, plant 80 square feet of native riparian landscaping or plant 1 additional tree. Additional tree shall be either a native conifer tree at least 6 feet in height or a deciduous tree at least 2″ in caliper measured 6″ above existing grade at the time of planting.
1 deciduous less than 24 inches in diameter as measured at breast height	For deciduous tree up to 12″ in diameter: • Replace with 1 deciduous tree at least 2″ in caliper measured 6″ above existing grade or a native conifer at least 6 height in height. For deciduous tree greater than 12" but less than 24″ in diameter: • In addition to the replacement tree required above, plant 80 square feet of native riparian or 1 additional tree. Additional tree shall be a native conifer at least 6 feet in height or a deciduous tree at least 2″ in caliper measured 6″ above existing grade at the time of planting.
1 conifer or deciduous trees 24 inches in diameter or greater as measured as measured at breast height	Only a tree meeting the criteria found in KZC 95 for a nuisance or hazard trees may be removed. A report, prepared by a qualified professional certified arborist, must be submitted, showing how the tree meets the criteria. The City arborist shall make the final determination if the tree meets the criteria for a nuisance or hazard tree and may be removed.

	If the City arborist approves removal of the tree, tree replacement shall be: • For removal of 1 conifer tree, replace with 2 native confer trees at least 6 feet in height at the time of planting • For removal of 1 deciduous; replace with 2 trees of either type. Native conifer tree shall be at least 6 feet in height and deciduous tree shall be at least 2" in caliper measured 6" above existing grade at the time of planting.

The City's arborist has indicated that a tree greater than 24 inches in diameter is a tree of high significant ecological value and should not be removed, except in the case of hazard or nuisance. Because of its high ecological value and needing to meet the State's No Net Loss provision, the replacement rate is recommended at a 2:1 ratio. Based on a recent field survey from the water, we do not have many trees of this size in the shoreline setback areas so it would be an exception when a 2:1 replacement ratio would occur.

A 12" in diameter tree is approximately a 20 year old tree. The arborist recommends this size as the threshold for providing additional planting beyond the 1:1 ratio to meet the No Net Loss provision.

In an attempt to respond to the Houghton Community Council's and KLA's concerns about private views being impacted by tree replacement, staff has proposed to add language that allows for an alternative proposal to be approved if:

New text: "The required tree replacement will obstruct existing views to the lake, at the time of planting or upon future growth, which cannot otherwise be mitigated through tree placement or maintenance activities. The applicant shall be responsible for providing sufficient information to the City to determine whether the tree replacement will obstruct existing views to the lake."

Planning Official approval is still proposed in order to ensure that the alternative provides comparable ecological functions as the base standard. The functions are the key issue that needs to be considered in order to ensure that development along Kirkland's shorelines can meet the No Net Loss provision as a whole.

b. Vegetation in Shoreline Setback (Section 83,400). The Houghton Community Council expressed continuing concerns with the vegetation standards for new development or significant additions within the shoreline setback area, commenting that:

i. The 3 trees per 100 linear feet was too burdensome and could impact views and conflict with use of property
ii. The plant list should allow use of lower shrubs to preserve views
iii. Alternative compliance provisions should not require City staff approval

<u>Staff Response:</u> As referenced in the Cumulative Impact Analysis, the shoreline vegetation standard for the shoreline setback area is proposed in order to offset for direct losses that occur across Kirkland's shorelines to shoreline functions resulting from reduction in the space between primary structures and their activities near the water's edge. The direct losses that would be impacted from this type of development include:

- *Reduction in ability of site to improve the quality of the storm water.*
- *Elimination of upland habitat occupied by wildlife that use riparian areas.*
- *Lighting effects to fish and wildlife in nearshore areas.*

Further, the provisions also respond to the stated intent of the vegetation conservation provisions in WAC 173-26-2215), which includes restoring the ecological functions and ecosystem-wide processes performed by vegetation along the shoreline.

In an attempt to respond to the Houghton Community Council's and KLA's concerns about private views being impacted by tree planting, staff has proposed to add language that allows for an alternative proposal to be approved if:

New text: "The required vegetation placement will obstruct existing views to the lake, at the time of planting or upon future growth, which cannot otherwise be mitigated through placement or maintenance activities. The applicant shall be responsible for providing sufficient information to the City to determine whether the vegetation placement will obstruct existing views to the lake;"

Planning Official approval is still proposed in order to ensure that the alternative provides comparable ecological functions as the base standard. The functions are the key issue that needs to be considered in order to ensure that development as a whole along Kirkland's shorelines can meet the No Net Loss provision.

A landscape architect at the Watershed Company, who has experience designing shoreline planting plans, has evaluated the City's Native Plant list to identify vegetation that would be appropriate for a shoreline location (see Attachment 7). The amendments proposed have slightly modified the potential full maturity height expectations for several species. The City plans to include this information into a new list for the shoreline area. Further, it is important to note that the provisions in Chapter 83 also allow for use of other plants not included on this list. Vegetation could also be pruned or otherwise maintained to preserve views.

c. Piers and docks (Section 83.270)**.** The Houghton Community Council expressed continuing concerns with the limitation of 4 feet for the width of the pier located within the nearshore 30 feet of the pier, citing potential safety concerns.

<u>Staff Response:</u> As noted in the information provided by Dave Douglas of Waterfront Construction, the 4-foot width is a standard contained within the Army Corp's RGP-3 and is implemented most of the time. Mr. Douglas notes that walkways up to 6' wide have been approved by the Corps. As proposed, the 4-foot width would only apply to the nearshore section of the main walkway so that applicants could have the option of a wider pier beyond

near 30 feet of the shoreline. Piers have been constructed within Kirkland that have met this standard. Applicants would also have an option to install a ramp that would provide handrails, if safety issues were a concern. Staff continues to support this provision, as we believe it is consistent with the WAC Guidelines and permitting requirements from federal and state agencies.

d. **Shoreline Stabilization** (Section 83.300)**.** The Houghton Community Council expressed concerns about the shoreline stabilization measures and lack of ability to consider protection of property from erosion impacts, as well as potential impacts that could result from shifts in the OHWM as a result of erosion, including setbacks and lot area.

Staff Response: This issue is mandated by WAC Guidelines, which address protection of principal uses or structures, but not property or accessory structures. Specifically, the Department of Ecology has advised the City that "accessory structures alone do not justify shoreline protection (modification). Such structures are not necessary to protect an allowed primary structure. While some may think protecting a private investment in accessory structures like a gazebo, swimming pool, tennis court or helicopter-pad may be nice, they cannot be justified by the SMA or the guidelines. Again, they are not necessary in support of a primary structure, and most can be moved if in danger from normal shoreline erosion."

In addition, Ecology has stated: "Normal shoreline accretion/avulsion, sloughing of steep bluffs, and erosion of property itself, is not justified unless required to protect a primary dwelling. Similarly, erosion caused by drainage alone is not enough to justify a shoreline stabilization structure."

Also, Ecology has said that: "In sum, regarding modifications, SMPs must:

1. *Allow structural shoreline modifications only where they are demonstrated to be necessary to protect a primary structure. Accessory structures alone do not justify protection.*
2. *Regarding all allowed shoreline modifications, reduce adverse effects as much as possible, limiting their number and extent.*
3. *Give preference to modifications types that have a lesser impact on ecological functions and require mitigation of identified impacts that result.*

When need is demonstrated, give priority to soft over hard measures, etc. etc." [e-mail correspondence from Peter Skowland dated January 20, 2009].

In response to KLA's comments on shoreline stabilization, Ecology also provided the following response: "We concur with City's response and do not believe the proposed change would be consistent with the Guidelines. It is important to note, that a majority of Kirkland's shoreline is already armored. The SMP (based on the Guidelines) should look for 'opportunities' to incorporate softer solutions when it is feasible to a specific lot. This does not mean that property owners need to accept significant erosion or "loss of property," it is more a case of reducing an on-going impact associated with hard-structures, when a softer solution can accommodate the same purpose to protect the primary structure on the property. If it is demonstrated that because of site specific

factors a soft solution will not protect the primary structure, then harder solutions may be appropriate. Further, this evaluation is isolated to bulkhead repair/replacement scenarios and will not retroactively be forced on any existing sites."

It is important to note that shoreline designers and reviewers examine a number of site characteristics when determining an appropriate shoreline design, including those features present in the decision tree that has been prepared as part of the draft regulations, including location of existing primary structure and water depth (see Attachment 8).

The regulations also require the submittal of an assessment of erosion potential. Staff believes that this provision provides property owners the opportunity to evaluate historical erosion rates over a long time frame, which would serve to dampen the effect of short term changes from storm events. Historical aerial photograph series can be used to evaluate long-term change as a result of erosion. This information can be used to establish a site specific erosion rate that could then be multiplied by a 3-year time frame which is the time frame required in the Guidelines.

In certain cases, there may be a need for an engineering study to conduct wave modeling, but this would still need to be completed on an individual site basis. As a result, staff is recommending that property owners be given the option as to whether to submit this type of engineering study. If they are concerned about the effectiveness of soft measures at their property, a property owner could certainly obtain the services of a coastal engineer to review wave energy issues, but it would not be a required study in every circumstance.

e. **North Property Line Setback.** The Houghton Community Council expressed concerns about the proposed elimination of the current North Property Line Setback, which is:
   - The greater of:
     - 15 feet, or
     - 1 1/2 times the height of the building above average building elevation minus 10 feet.

   The Council has expressed concerns that modifications proposed would not retain the openness along Lake Street/Lake Washington Blvd and would eliminate the sun angle protection.

   Staff Response:

   *Concerning **openness** along Lake Street/Lake Washington Blvd, the requirement of a view corridor requirement at 30% of the average parcel width is the provision that provides the openness looking east to west from the adjacent right-of-way. The view corridor cannot contain structures or other improvements that would block views to the lake. This provision would not change with the SMP update so the openness along the shoreline would continue.*

   One requirement of the view corridor provision is that it must be in a location that provides the best view given existing adjacent development. This means that if an

existing development provided the view corridor along its north property line (which it would most likely would do because of the current north property line setback requirement – see scenario #2 below), then the future development to the north must provide the view corridor on its south side to provide the best view of the lake. In this scenario, the future development must provide a view corridor along the south property line AND a north property line setback along the north side of the development (see scenario #1 below).

Parcel widths range from 60′ to 75′ along Lake Washington Blvd south of Carillon Point in WDIII. Looking at examples of existing parcel widths, here is how the view corridor and north property line setback combined would currently affects properties and why past variances have been approved.

1. *Scenarios when View Corridor and North Property Line are in Different Locations*

Parcel width at 60′	***Parcel width at 75′***
View Corridor on south side= 18′ wide	*View corridor on south side= 22.5′ wide*
North property line setback = 35′ wide	*North property line setback = 35′ wide*
**Parcel width left for residence = 7′ wide*	**Parcel width left for residence =17.5′ wide*

2. *Scenarios when View Corridor and North Property Line are in Same Location*

Parcel width at 60′	***Parcel width at 75′***
View Corridor on north side= 18′ wide	*View corridor on north side = 22.5′ wide*
North property line setback = 35′ wide	*North property line setback = 35′ wide*
South property line setback = 10′ wide	*South property line setback = 10′ wide*
**Parcel width left for residence = 15′ wide*	**Parcel width left for residence = 30′ wide*

As shown above, the combination of the view corridor and the north property line setback results in inadequate area (7′ to 17.5′) for structures and improvements. The City has received many variances for the north property line setback. Staff recommends deleting the north property line setback and replace it with the standard 5′ side yard setback required throughout the rest of the city.

Concerning the ***sun angle concept*** *for the north property line setback, this may or may not have been the reason for establishing the requirement. Nonetheless, since the shoreline regulations were adopted, structures along the shoreline area have developed with windows and decks facing west for views with few to no windows or decks on the south side of the structures. Few to no windows provide privacy to homeowners and to maximize windows on the west side. Staff is not aware of any solar panels installed to take advantage of the sun angle provision.*

This north property line setback requirement is not required anywhere else in the city and there appears no justification for keeping it along the shoreline. In addition, shoreline properties must provide more setbacks than any other residential properties in the city (front setback of 30′ compared to 20′; side yard setbacks of view corridor/north

property line compared to 5′ but total of 15′; and shoreline setback of 25′ or 15% of average parcel depth whichever is greater compared to 10′ rear yard setback.

To offset the shoreline setback increasing from a minimum of 15′ to 25′ under the SMP update, staff recommends deleting the north property line setback and replace it with the standard residential side setback of 5′ required throughout the rest of the city. Again, the view corridor setback would continue and provide openness from east to west along the shoreline.

f. **Float plane facilities.** Some members expressed continuing concerns about the new provisions that could permit a float plane facility under a CUP process.

Staff Response: Staff has recommended that this use be potentially considered because of its water orientation and potential to provide increased recreational and economic opportunities along the Lake. In many ways, this use has similar impacts as boats that currently operate within Lake Washington. A Conditional Use Process has been recommended to allow for additional consideration of whether a proposed facility would be appropriate, given the merits of a specific proposal. The Houghton Community Council could recommend that the use be prohibited if it feels that this use is not appropriate along Kirkland's shorelines.

V. KEY RECOMMENDED DISCUSSION POINTS

Attachment 6 provides an overview of the questions and requested changes from KLA. Staff has incorporated the majority of these requested changes in the revised Chapter 83 (see Attachments 1 and 5). There are, however, still several key issues where there are differences in the recommendations provided by staff and representatives for the KLA.

Staff would recommend that the Planning Commission consider and discuss these issues and provide direction to staff on what approach the Planning Commission would like to take:

Issue	KLA Comment/Recommendation	Staff Recommendation
Shoreline Setback in the Residential – L Environment	KLA has stated that it has yet to be adequately demonstrated that these changes in the status quo are needed to meet the "no net loss" standard in State law.	Staff believes the analysis in the Cumulative Impact Analysis addresses this need and recommends adopting new standards, as proposed in Chapter 83 KZC.

Issue	KLA Comment/Recommendation	Staff Recommendation
Nonconformances	Requesting that existing lawful non-conformances be permitted to exist and be maintained so long as the extent of the non-conformity is not increased. This principle is implemented in a number of ways, including: Broader allowances to replace existing nonconforming structures in their current location when property owner is voluntarily replacing a nonconforming structure.	In most cases, staff is in agreement with this principle – with a key difference – the voluntary replacement of structures. The proposed provisions are consistent with the typical approach to nonconforming structures, where the City requires gradual compliance when structures are voluntary replaced or modifications made to exterior walls or roof which are non-conforming. In the SMP, the City has allowed for greater flexibility for additions to nonconforming portions of buildings. Also, in terms of evaluating no net loss issues, the City relies upon this type of provision, which would result in some nonconforming development gradually coming into compliance in order to offset other improvements from newer construction that may occur closer to the lake. The City has allowed broad provisions for remodeling, but when replacement of a structure occurs, that is the best opportunity to see the redevelopment come into compliance.

Issue	KLA Comment/Recommendation	Staff Recommendation
	Request deletion of provision requiring nonconforming accessory structures to come into compliance when significant improvements are made on-site.	Requiring overall compliance on a property as significant investment is made on-site is a typical approach and specifically is also used in the critical area regulations in order to work towards gradual reductions of non-conformances.
Shoreline Stabilization	Allow for new lots created through land division to use hard stabilization measures, if needed, for reasonable development to occur.	Ensure that new lots do not require the use of hard shoreline stabilization measures.
	Requested deletion of provision in Section 83.300 requiring new development or redevelopment to be located and designed to avoid the need for new or future shoreline stabilization to the extent feasible.	Require new development or redevelopment to be located and designed to avoid the need for new or future shoreline stabilization to the extent feasible.
	Requested changes to Section 83.300 that would address protection of private property and accessory structures.	Address protection of primary structures and uses, as addressed by WAC Guidelines.
	Requested changes to Section 83.300 to allow for consideration of imminent threat to be based on a 5-year time frame.	Retain 3-year timeframe, as required by WAC Guidelines.
	Requested deletion of provisions requiring sloping the bulkhead landward in order to mitigate impacts of this type of hard shoreline stabilization measure, because of concern over loss of property.	Require as a mitigation measure, where feasible. This is a standard minimization technique that needs to be considered for applicability, while also considering site specific constraints.

Issue	KLA Comment/Recommendation	Staff Recommendation
Tree Management and Shoreline Vegetation	Requested change to apply tree management provisions only within 25 feet of ordinary high water mark, rather than within shoreline setback, which varies due to lot depth.	Apply provisions within shoreline setback.
	Eliminate language requiring the use of previously installed landscaping to be reviewed to ensure that the vegetation provides landscaping that is at least as effective in protection the shoreline functions as the required vegetation	Require consideration of functions.

There are other key concerns posed by KLA for which staff has attempted to respond, but recognize that we may not have fully addressed their concerns, including:

- Establishing a cost threshold for mitigation measures.
- Using cost as a measure to assess the feasibility of an action.
- Including language allowing property owners to propose alternatives to tree/vegetation planting where the new requirements would have an unreasonable effect on residential views.

In addition, there are several recommendations that KLA have made and staff is recommending be approved that address issues that the Planning Commission has previously discussed, including:

- Eliminating tree replacement provisions for trees that have fallen or otherwise removed as a result of natural causes (See Section 83.400).
- Require consideration of the least environmentally damaging location for replacement of damaged improvements (with the exception of over-water residential structures, which would still have special criteria) (see Section 83.550.4).
- Modifying the definition of major repair for shoreline stabilization measures (see Section 83.300).
- Modifying provisions for joint use piers (see Section 83.280).

Additionally, staff has proposed a new approach for tree management (see Section IV) that it would recommend that the Planning Commission evaluate as a potential replacement to the current version.

Finally, there are a number of **individual comments** that have been submitted that **raise issues** that staff recommends the Planning Commission discuss, including:

- How should the **massing issues on the upper floors** be addressed in the WD II if the sun angle setback is replaced with a new provision? Staff continues to recommend a performance measure be included addressing where the reduction in upper floor massing should be applied (on the side yards similar to the sun angle setback). Robert Connor of Thielsen Architects has suggested revisions to these provisions (anywhere on the upper floors). Ultimately, this issue does not have significant public impact, but is a key issue for property owners in this area. Property owners have not provided significant feedback on this issue, but there was one owner concern about potential impacts to massing and sheer walls.
- Should the **garage setback provisions** be limited in their application along the shoreline? Staff has not recommended any changes to the garage setback provisions contained in KZC 115.43 since they apply to very few lots only the shoreline. Robert Connor of Thielsen Architects has recommended that this provision be eliminated for lots with less than 3,000 square feet.
- Are the provisions for limited **expansion of nonconforming structures** within the shoreline setback appropriate? Staff has proposed a limit on the square footage, as well a timeframe (5 years) within which a proposal can be requested if a previous proposal was approved. Robert Connor of Thielsen Architects has advocated for more flexible provisions.

Based on these issues, staff has compiled the following **key discussion points** that it recommends the Planning Commission address:

- **Shoreline setbacks** (see Section 83.180 in Attachment 1). Are the shoreline setbacks proposed appropriate, given the needed balance between protecting ecological functions, meeting the No Net Loss provision and shoreline uses?
- **Nonconformances** (see Section 83.550 in Attachment 1).
  - Are the provisions for limited expansion of nonconforming structures within the shoreline setback appropriate?
  - Should the provisions for addressing gradual abatement of nonconforming structures apply within the shoreline, as it does elsewhere within the City? If not, then the City may need to re-examine the Cumulative Impact Analysis and identify additional beneficial provisions to mitigate for on-going impacts.
  - Should the provision addressing nonconforming accessory structures be deleted?
- **Shoreline stabilization** (see Section 83.300 in Attachment 1).
  - Given the mandate established within the State Guidelines for shoreline stabilization, are any changes needed to these provisions?
  - Is the threshold for major repair activities at 50% of the linear length of the stabilization measure, as revised in the current draft, appropriate?
- **Tree Management and Vegetation** in the shoreline setback (see Section 83.400 in Attachment 1).
  - Should the tree management provisions be revised as indicated in Section IV?
  - Should these standards be limited to the area within 25 feet of the OHWM?

    - How should protection of private views be considered? Is the new approach proposed appropriate?
- **Costs** (see Section 83.360 in Attachment 1). Is the proposed approach to address property owner's concerns about costs appropriate?
- **Zoning Changes** (see Attachment 3).
    - Should the garage setback requirements of KZC 115.43 be revised?
    - Should the new provisions replacing the sun angle setback in the WD II zone be revised?

There may be additional issues that the Planning Commission wants to discuss as well.

VI. PUBLIC COMMENTS

Since distribution of the last Planning Commission meeting packet, the City has received six public comment letters (see Attachments 12-17).

Please note that several of these comments, including the comments from the Muckleshoot Indian Tribe, were not submitted in sufficient time for staff to respond for this packet. Staff will be considering these issues and addressing these as soon as possible.

VII. NEXT STEPS

The project schedule includes a meeting with the Houghton Community Council on August 24th. Staff will be over viewing the Houghton Community Council recommendations at the August 27th meeting. The City Council is tentatively scheduled to review the proposed SMP at a special study session in October. Action by the Council is expected to occur by the end of the year.

In taking action, the City Council would adopt a "resolution of intent" to adopt the SMP. Following action by the City Council, the SMP update will be submitted to Houghton Community Council for action. After this action by the City, the update will be submitted to the Department of Ecology for their consideration.

The Washington Department of Ecology (DOE) must approve all master programs before they become effective. These steps are outlined in WAC 173-26-100 through 173-100-120. 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 the SMP update is deemed complete, DOE has a 30-day comment period and may conduct its 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 a new review and

approval process. The master program takes effect when it is approved or adopted by rule by the Department of Ecology.

VIII. **ATTACHMENTS**

1. Revised Chapter 83
2. Revised Chapter 141
3. Revised Zoning Code Changes
4. Summary of Public Comments and Staff Responses
5. KLA Comments and Proposed Edits
6. Staff Responses to KLA Comments
7. Redlined Native Plant List
8. Decision Tree for Shoreline Stabilization Measures
9. Study of shoreline stabilization designs
10. Photographs of soft shoreline stabilization measures over time
11. Department of Ecology response to questions about RCW 90.58.270
12. Public Comment from Gaerda Zeiler dated July 25, 2009
13. Public Comment from Robert Connor dated August 12, 2009
14. Public Comment from Pascali dated August 14, 2009
15. Public Comment from Karen Walters, Muckleshoot Indian Tribe, dated August 17, 2009
16. Public Comment letter from Dave Douglas dated August 17, 2009
17. Public Comment letter from Michael Mohaghegh dated August 18, 2009

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

Chapter 83 – SHORELINE MANAGEMENT

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83.30 Purpose and Intent
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Uses and Activities in Shoreline Environment

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83.200 Residential Uses
83.210 Commercial Uses
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83.520 Geologically Hazardous Areas
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Authority and Purpose

83.10 Authority

1. This Chapter is adopted as part of 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. The requirements of this Chapter apply to uses, activities and development within shoreline jurisdiction.
2. Designation – The waters of Lake Washington and shorelands associated with Lake Washington are designated as shorelines of statewide significance.
3. Shoreline Jurisdiction
   a. The provisions of this Chapter shall apply to all shorelines of the state, all shorelines of statewide significance, and shorelands.
   b. Lake Washington, its underlying land, associated wetlands, and those lands extending landward 200 feet from its OHWM 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 OHWM of Lake Washington.

83.30 Purpose and Intent - The Kirkland Shoreline Master Program, consisting of this Chapter, the Shoreline Element Chapter of the Comprehensive Plan and the Restoration Plan, 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~~ existing natural areas along~~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, found in the City's Comprehensive Plan, 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 Element Chapter of the Comprehensive Plan.

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

~~1.~~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 Shoreline Management Act is exempted from the rule of strict construction; the Act and this Shoreline Master 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. (this is a repeat of 83.40.2)

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 City 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

For the purposes of this Chapter the following terms shall have the meaning ascribed to them below. Terms not defined in this section shall be defined as set forth in Chapter 5 KZC.

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

2. 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

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

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

5. Appurtenance: For the purpose of an exemption of a single family residence, also referred to as a detached dwelling unit on one lot, and its associated appurtenances from a substantial development permit, an appurtenance includes those listed under WAC 173-14-040 as well as tool sheds, greenhouses, swimming pools, spas, accessory dwelling units and other accessory structures common to a single family residence located landward of the OHWM and the perimeter of a wetland.

Accessory Dwelling Unit: See Chapter 5 KZC.

6. Average Parcel Depth: The average of the distance from the ~~high waterline~~ OHWM 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~~OHWM of the subject property and the quarter points of the ~~high waterline~~OHWM 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.~~

7. Average Parcel Width: The average of the distance from the north to the south property lines as measured along the OHWM and the front property line, or along the east and west property lines if the parcel does not abut Lake Washington.

8. 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.

9. 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.

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

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

12. 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.

Boating Facilities: Facilities providing boat moorage space, fuel, or other commercial services. As used in this Chapter, boating facilities refer to the following use listings: Piers, Docks, Moorage Buoys, Boatlifts and Canopies serving Attached, Stacked and Detached Dwelling Units and Marinas and Moorage Facilities Associated with Commercial Uses.

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

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

15. 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 83.500.3(b) and 83.510.3(b). The buffer setback serves to protect the wetland or stream buffer during development activities, use, and routine maintenance occurring adjacent to these resources.

16. 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.

17. Canopy: A cover installed as a component of a boatlift.

18. 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.

19. 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.

20. 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.

Commercial Use: Includes retail, office services, entertainment, recreation and/or light industrial uses, depending on the location. Retail uses are those which provide goods and/or services directly to the consumer, including service uses not usually allowed within an office use.

21. 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.

22. Conditional Uses: A use, development, or substantial development that is classified as a conditional use in section 83.170 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.

Convalescent Center: See Chapter 5 KZC.

23. 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.

24. 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.

25. 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 requires access to deep water.

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

27. 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.

28. Dry Land Boat Storage: A commercial service providing storage of boats and other boat on the upland portion of a property.

Dwelling Unit, Attached: See Chapter 5 KZC.

Dwelling Unit, Detached: See Chapter 5 KZC.

Dwelling Units, Stacked: See Chapter 5 KZC.

29. 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.

30. Ecological Restoration: See Restore.

31. 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.

32. 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.

33. 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.

d. The burden of proving infeasibility is on the applicant in cases where these guidelines require certain actions.

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.

34. 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.

35. 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~~OHWM, in wetlands, or on shorelands in a manner that raises the ground elevation or creates dry land.

36. 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.

37. 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. May be used for private or public purposes.

38. 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 that meets the objectives of the Shoreline Management Act.

Forest Practices: Any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber.

39. 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.

40. 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.

41. Geotechnical Analysis: See Geotechnical Report.

42. 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.

43. 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.

44. 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.

45. Helipad: A takeoff and landing area for helicopters.

46. 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 semi-permanent anchorage/moorage facilities.

47. 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. Impervious surfaces do not include pervious surfaces as defined in this Chapter.

Industrial Uses: Uses such as manufacturing, assembly, processing, wholesaling, warehousing, distribution of products and high technology.

In-Stream Structure: A structure placed by humans within a stream or river waterward of the OHWM that either causes or has the potential to cause water impoundment or the diversion, obstruction, or modification of water flow. In-stream structures may include those for hydroelectric generation, irrigation, water supply, flood control, transportation, utility service transmission, fish habitat enhancement, or other purpose.

48. 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.

49. 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.

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

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

52. 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 drainage ways and storage areas.
- Preservation of portions of the site in undisturbed, natural conditions.
- Reduction of the use of piped systems. Whenever ~~possible~~feasible, site design should use multifunctional open drainage systems such as vegetated swales or filter strips which also help to fulfill vegetation and open space requirements.
- Use of environmentally sensitive site design and green building construction that reduces runoff from structures, such as green roofs.

53. Marina: A private or public facility providing the purchase and or lease of a slip for storing, berthing and securing motorized boats or watercraft, including both long-term and 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.

54. 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.

55. Minor Improvements: Walkways, pedestrian bridges, benches, and similar features, as determined by the Planning Official, pursuant to KZC 83.500.3(e) and 83.510.3(e).

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

57. Moorage pile: A piling to which a boat is tied up to prevent it from swinging with changes of wind or other similar functions.

58. Must: means a mandate; the action is required.

58. 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.

59. 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.

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

61. 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 markOHWM cannot be found, the ordinary high water markOHWM adjoining fresh water shall be the line of mean high water, or as amended by the State. For Lake Washington, the ordinary high water markOHWM corresponds with a lake elevation of 21.8 feet, based on the NGVD 29 datum.

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

63. 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 pPervious surfaces, include, but are not limited to: ding pervious asphalt, pervious concrete, pervious gravel, e and grass or pervious pavers.

64. 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.

65. 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.

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

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

68. Primary Basins: The primary basins shown on the Kirkland Sensitive Areas Map.

Primary Structure: A structure housing the main or principal use of the lot on which the structure is situated, including a detached garage associated with the primary structure. This term shall not include

accessory uses, structures or activities as defined in Chapter 5 KZC.

69. 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.

70. 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.

71. Public Access Pier or Boardwalk: An elevated structure that is constructed waterward of the OHWM and intended for public use.

72. 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.

73. 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.

74. 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.

75. Rain Garden: Rain gardens and bioretention areas are vegetation 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.

Recreational Use: Commercial and public facilities designed and used to provide recreational opportunities to the public.

Residential Use: Developments in which persons sleep and prepare food, other than developments used for transient occupancy. As used in the Chapter, residential development includes single-family development (known as detached dwelling unit), as well as multifamily development (known as detached, attached or stacked dwelling units) and the creation of new residential lots through land division.

76. 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.

77. Restoration: See Restore.

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

79. 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, habitat and other riparian features that are important to both riparian forest and aquatic system conditions.

80. 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.

81. Secondary Basins: The secondary basins depicted on the Kirkland Sensitive Areas Map.

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

83. Shorelands: Those lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the ~~ordinary high water mark~~OHWM; 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.

84. Shoreland Areas: See Shorelands.

85. Shoreline Functions: See Ecological Functions.

86. 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.

87. 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.

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

89. 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.

90. 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.

91. 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 OHWM 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.

92. 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.

93. Sign, Interpretive: A permanent sign without commercial message, located on a publicly-accessible sit, 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 Tree: See Chapter 5 KZC.

94. 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.

95. Soft Structural 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.

96. 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.

Structural Shoreline Stabilization: Means for protecting shoreline upland areas and shoreline uses from the effects of shoreline wave action, flooding or erosion that incorporate structural methods, including both hard structural shoreline stabilization methods and soft structural shoreline stabilization measures.

97. Substantial Development: As defined in the Washington State Shoreline Management Act (SMA) found in 90.58 RCW, and WAC 173-27-030 and 173-27-040.

98. Transportation Facilities: Facilities that include street pavement, curb and cutter, sidewalk and landscape strip as regulated under KZC 110.

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

100. Tree: A woody plant with one main trunk at a minimum height of 12' measured from the existing ground at maturity, having a distinct head in most cases. The Urban Forester shall have the authority to determine whether any specific woody plant shall be considered a tree or a shrub.

101. Upland: Generally described as the dry land area above and landward of the ~~ordinary high water mark~~OHWM, but not including wetlands.

102. 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.

103. 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.

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

105. 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.

106. Water-Dependent Use: A use or portion of a use that 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.

107. 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 foster shoreline enjoyment.

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

109. 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.

110. 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.

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

112. 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.

113. 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 OHWM of the stream.

114. 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 does not include accessory facilities such as ticketing booths and does not include the transport of vehicles.

115. 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.

116. 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.

Shoreline Environment Designations and Statewide Significance

83.90 Shoreline Jurisdiction and Official Shoreline Map

1. Shoreline Map -

d. 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.

e. 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 OHWM 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 OHWM 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 OHWM 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 OHWM 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 OHWM 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 83.550 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 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 that 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~~OHWM.

2. Designation Criteria - An Aquatic environment designation should be assigned to lands waterward of the ordinary high-water mark.

Uses and Activities in the Shoreline Environment

83.160 User Guide

1. Explanation of Uses Table

   a. The table contained in KZC 83.170 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 83.170 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.

2. See KZC 83.370 for federal and state approval.

83.170 Shoreline Environments, Permitted and Prohibited Uses and Activities Chart

The chart is coded according to the following legend. SD = Substantial Development[1] 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
Scientific research and Native American fishing	SD	SD	SD	SD	SD	SD
Commercial Uses						
Water-dependent uses						

[1] A development activity may also be exempt from the requirement to obtain a substantial development permit. See Chapter 141 KZC addressing exemptions. If a development activity is determined to be exempt, it must otherwise comply with applicable provisions of the act and the local master program;

The chart is coded according to the following legend. SD = Substantial Development[1] 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[2]	X	X	X	X	CU	See adjacent upland environments
Any water-dependent Retail Establishment other than those specifically listed in this chart, selling goods or providing services.	X	SD[3]	X	X	SD	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[4]	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
2 Permitted as an accessory use to a Public Park

The chart is coded according to the following legend. SD = Substantial Development[1] 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[4]	X	CU[5,7]	SD[6]	See adjacent upland environments
Retail establishment providing gas and oil sale for boats	X	X	X	CU[5,7]	CU[7]	See adjacent upland environments
Retail establishment providing boat and motor repair and service	X	X	X	CU[5,7]	CU[7]	X
Restaurant or Tavern[8]	X	X	X	CU[5]	SD	X
Concession Stand	X	SD[4]	X	X	SD[4]	X
Entertainment or cultural facility	X	CU[9]	X	X	SD	X

[5] 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.
[6] Permitted in the Juanita Business District or as an accessory use to a marina.
[7] Accessory to a marina only.
[8] Drive-in or drive-through facilities are prohibited.
[9] Use must be open to the general public.

The chart is coded according to the following legend. SD = Substantial Development[1] 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**
Hotel or Motel	X	X	X	CU[10]/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[11]	X
Office Uses	X	X	X	X	SD[11]	X
Neighborhood-oriented Retail Establishment	X	X	X	CU[12]	SD[11]	X
Private Lodge or Club	X	X	X	X	SD[11]	X
Vehicle Service Station	X	X	X	X	X	X
Automotive Service Center	X	X	X	X	X	X

[10] Permitted in Planned Area 3B established in the Lakeview Neighborhood Plan only.
[11] Permitted as part of mixed-use development containing water-~~oriented~~ dependent 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.
[12] 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[1] 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**
Dry land boat storage	X	X	X	X	X	X
Industrial Uses						
Water-dependent uses	X	X	X	X	X	~~See adjacent upland environments~~X
Water-related uses	X	X	X	X	X	X
Nonwater-oriented uses	X	X	X	X	X	X
Recreational Uses						
Water-dependent uses						
Marina[13]	X	CU	X	SD	SD	See adjacent upland environments
Piers, docks, boat lifts and canopies serving Detached Dwelling Unit[13]	X	X	SD	SD	SD[17]	

[13] 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[1] 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
Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units [13]	X	X	X	SD	SD	
Float	X	SD[4]	X	X	SD[4]	
Tour Boat Facility	X	X	X	X	SD[14]	
Moorage buoy[13]	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	
Swimming beach and other public recreational use	CU	SD	SD	SD	SD	
Any water-dependent recreational development other than those specifically listed in this chart	CU	SD	SD	SD	SD	

[14] Permitted as an accessory use to a Marina or Public Park only.

The chart is coded according to the following legend. SD = Substantial Development[1] 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**
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[15]	CU	SD	SD	SD	SD	X
Public Access Facility	SD[16]	SD	SD	SD	SD	See adjacent upland environments
Nonwater-oriented uses						
Nonwater-oriented recreational development.	X	X	X	X	SD[11]	X
Residential Uses						
Detached dwelling unit	CU	CU	SD	SD	SD[17]	X

[15] This use does not include other public recreational uses or facilities specifically listed in this chart
[16] Limited to trails, viewpoints, interpretative signage and similar passive and low-impact facilities.
[17] Permitted if located south of NE 60th Street only.

The chart is coded according to the following legend. SD = Substantial Development[1] 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**
Accessory dwelling unit[18]	X	X	SD	SD	SD[17]	X
Detached, Attached or Stacked Dwelling Units (Multi-family units on one lot)	X	X	X	SD	SD	X
Houseboats	X	X	X	X	X	X
Assisted Living Facility[19]	X	X	X	CU	SD	X
Convalescent Center or Nursing Home	X	X	X	CU[20]	SD[21]	X
Land division	SD[22]	SD[22]	SD	SD	SD	X
Institutional Uses						
Government Facility	X	SD	SD	SD	SD	X
Community Facility	X	X	X	X	SD	X
Church	X	X	X	CU[20]	SD[21]	X
School or Day-Care Center	X	X	X	CU[20]	SD[11]	X

[18] One accessory dwelling unit (ADU) is permitted as subordinate to a detached dwelling unit
[19] A nursing home use may be permitted as part of an assisted living facility use.
[20] Permitted if located on the east side of Lake Washington Blvd NE/Lake St S, or the east side of 98th Avenue NE.
[21] 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.
[22] 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[1] 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**
Mini-School or Mini-Day-Care Center	X	X	X	SD[20]	SD[11]	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[23]	SD[23]	SD[23]	SD[23]	
Nonwater-oriented						
Arterials, Collectors, and neighborhood access streets	CU	SD[24]/CU	SD	SD	SD	X
Helipad	X	X	X	X	X	X
Utilities						
Utility production and processing facilities	X	CU[25]	CU[25]	CU[25]	CU[25]	X
Utility transmission facilities	CU[25]	SD[25]	SD[25]	SD[25]	SD[25]	CU[25]

[23] Permitted as an accessory use to a marina or a public park.
[24] Construction of pedestrian and bicycle facilities only.
[25] This use may be allowed provided there is no other feasible route or location.

The chart is coded according to the following legend. SD = Substantial Development[1] 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**
Personal Wireless Service Facilities[26]	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[27]/CU	SD[27]/CU	See adjacent upland environments
Dredging and dredge materials disposal	SD[27]/CU	SD[27]/CU	SD[27]/CU	SD[27]/CU	SD[27]/CU	
Fill waterward of the ~~ordinary high water mark~~OHWM	SD[27]/CU	SD[27]/CU	SD[27]/CU	SD[27]/CU	SD[27]/CU	
Land surface modification	SD[27]/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 Structural Shoreline Stabilization Measures	X	SD	SD	SD	SD	

[26] New towers are not permitted.

[27] Permitted under a substantial development permit when associated with a restoration or enhancement project.

Use Specific Regulations

83.180 Shoreline Development Standards

1. General –
   a. See KZC 83.40 for relationship to other code and ordinances.
   b. Development standards specified in this Chapter shall not extend beyond the geographic limit of the shoreline jurisdiction, except as noted in the provisions contained below.
2. Development Standards Chart –
   a. The following chart establishes the minimum required dimensional requirements for development. At the end of the chart are footnotes pertaining to certain uses and activities.
   b. KZC Section 83.170 contains an overview of the activities permitted under each of the use classifications contained in the development standards chart.
   c. KZC 83.180 through KZC 83.550 contains additional standards for the uses and activities, including provisions for No Net Loss and Mitigation Sequencing in KZC 83.360 and federal and state approval in KZC 83.370.

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						

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
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 parcel depth, except in no case is the shoreline setback permitted to be less	Outside of shoreline jurisdictional area, if feasible, otherwise 50'.	30 % 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	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.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
		than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter.		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 to both the north and south property lines of the subject property, then the shoreline setback of the primary structure on the subject property is the average of the shoreline setback of these adjacent dwelling units, but at a minimum		

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				width of 15 feet. If a dwelling unit is not adjacent to the property, then the setback of the adjacent property without a dwelling unit for the purposes of determining an average setback shall be based upon 30% of the average parcel depth. Also see Section 83.190.2.b.3		
Maximum Lot Coverage	n/a	50%	50%	50%	60%	80% except for the following: In the CBD zones, 100% for properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[30]	n/a	25' above ABE[28]	35' above ABE	30' above ABE	35' above ABE	35' above ABE

[28] Structure height may be increased to 30' above ABE in the Natural shoreline environment. See KZC 83.190.4.c.1).

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
Other Residential Uses (Attached, Stacked, and Detached Dwelling Units; Assisted Living Facility; Convalescent Center or Nursing Home)						
Maximum Density[29]	n/a	n/a	n/a	n/a	3,600 sq. ft./unit, except 1,800 sq. ft./unit for up to 2 dwelling units if the public access provisions of KZC 83.420 are met	No minimum lot size in the CBD zones; 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, a mixed-use development 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 CBD zones, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[30]	n/a	n/a	n/a	n/a	30' above ABE[31]	41' above ABE, except for the following:

[29] 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
						• In the CBD zones, if located on the east side of Lake Street South, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. • 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.[32]
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 uses: 0', Water-related use: 25', Water-enjoyment	n/a	The greater of: a. 25' or b.15% of the average	The greater of: a. 25'or b.15% of the average parcel

[30] The height limit applies to that portion of the building physically located within the shoreline jurisdiction. Permitted increases in building height are addressed in KZC 83.190.4.
[31] Structure height may be increased to 35' above ABE. See KZC 83.190.4.
[32] See KZC 83.190.4.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
			use: 30', Other uses: Outside of shoreline jurisdictional area, if feasible, otherwise 50'.		parcel depth.	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 CBD zones, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[30]	n/a	n/a	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30' above ABE.[31]	n/a	30' above ABE[31]	41' above ABE, except for the following: • In the CBD zones, if located on the east side of Lake St S, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
						Plan shall comply with the Master Plan provisions. [33]
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', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shoreline area, if feasible, otherwise 50'.	Water-dependent uses: 0', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shoreline jurisdictional area, if feasible, otherwise 50'.	30% 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.
Maximum Lot Coverage	n/a	10%	30%	30%	80%	80% except for the following: • In the CBD zones, 100% on properties that do not

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

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
						abut Lake Washington; otherwise 90%
Maximum Height of Structure[30]	n/a	25' above ABE	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30' above ABE[31]	25' above ABE	30' above ABE[31]	41' above ABE, except for the following: • In the CBD zones, if located on the east side of Lake St S, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. • 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.
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 jurisdictional area, if feasible, otherwise 50'.	Outside of the shoreline jurisdictional area, if feasible, otherwise 30% of the average	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.

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 ft. or required to be greater than 60 ft., except as otherwise specifically allowed through this Chapter.		
Maximum lot coverage	n/a	n/a	50%	50%	80%	80% except for the CBD zones, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum height of structure[30]	n/a	n/a	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30' above ABE[31]	25' above ABE	30' above ABE[31]	41' above ABE, except In the CBD zones, if located on the east side of Lake St S, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property.
Transportation Facilities						
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	n/a	Outside of shoreline area, if ~~possible~~feasible, otherwise 50'.	30% 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[30]	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
Shoreline Setback	n/a	Outside of shoreline area, if ~~possible~~feasible, otherwise 50'.	Outside of shoreline area, if ~~possible~~feasible, otherwise 50'.	30% of the average parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet	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.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter.		
Maximum Lot Coverage	n/a	5%	30%	50%	80%	80% except in the CBD zones, 100% on properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[30]	n/a	25' above ABE	If adjoining the Residential-L Shoreline Environment, then 25' above ABE. Otherwise, 30' above ABE[31]	25' above ABE	30' above ABE[31]	41' above ABE, except for the following: • In the CBD zones if located on the east side of Lake St South, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. • In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
						Master Plan provisions.

83.190 Lot Size or Density, Shoreline Setback, Lot Coverage and Height

1. Calculation of Minimum Lot Size or Maximum Density –

   a. Development shall not use lands waterward of the ~~ordinary high watermark~~OHWM to determine minimum lot size or to calculate allowable maximum 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 will be partially located within the shoreline jurisdiction, the City may approve an increase in the actual number of units in the shoreline jurisdiction, provided that the total square footage of the units within the shoreline jurisdiction does not exceed the allowed density multiplied by the average unit size in the proposed development on the subject property.

   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 0.50.

   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

2. 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 OHWM on the horizontal plane and in the direction that results in the greatest dimension from the OHWM (see Plate XX).

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

      3) For those properties located along Lake Ave W south of the Lake Ave W Street End Park, in instances where the shoreline setback of adjacent dwelling units has been reduced through a shoreline reduction authorized under KZC Section 83.380, the shoreline setback of these adjacent dwelling units, for the purpose of calculating a setback average, shall be based upon the required setback that existed prior to the authorized reduction.

   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, except within the Natural environment, provided that they are constructed and maintained in a manner that meets KZC 83.360 for avoiding or at least minimizing adverse impacts to shoreline ecological functions:

      1) For public pedestrian access required under KZC 83.420, walkways, benches, and similar features, as approved by the Planning Official.

      2) For private access to the shoreline, walkways within the shoreline setback are permitted, subject to the following standards:

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

b) The walkway corridor area shall be located outside of areas of higher ecological and habitat value.

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

d) The walkway corridor area may contain minor improvements, such as garden sculptures, 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 walkway corridor area and any view corridor requirements under KZC Section 83.410. Light fixtures approved under this subsection shall comply with the provisions contained in KZC 83.470.

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, including swimming beaches.

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~~OHWM.

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, shall 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 shall not be closer than 25 feet to the OHWM, subject to the following standards:

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

b) The total horizontal dimension of the improvement that extends into the shoreline setback shall not exceed 50 percent of the length of the facade of the primary structure.

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

11) Outdoor seating areas for restaurants, hotels and other water enjoyment commercial uses may extend up to 10 feet into the shoreline setback, but shall be no closer than 16 feet to the OHWM, subject to the following standards:

a) The improvement 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 improvement that extends into the shoreline setback shall not exceed 50 percent of the length of the facade of the primary structure.

c) The 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 structure to the seating area or to follow the existing topography.

d) All outdoor lighting is required to meet the lighting standards of KZC Section 83.470.

e) The seating area is required to be fenced off from the shoreline by rope stanchions, portable planters, or similar device approved by the City, with openings through the fencing for customer entry. The floor plan of the seating area shall be designed to preclude the seating area from being expanded.

f) The applicant is required to provide one (1) or more approved trash receptacles and one (1) or more ashtrays.

g) The area of the seating shall be considered new gross floor area for the purposes of determining whether vegetation is required under the provisions of KZC Section 83.400.

12) 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 83.400;

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

c.) The structure shall meet the view corridor provisions of KZC 83.410.

13) Public bridges and other essential public facilities that must cross the shoreline.

14) Parking as authorized by the Planning Official under the provisions of KZC 83.440.3.

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

16) Fences, swimming pools, tool sheds, greenhouses and other accessory structures and improvements are not permitted within the shoreline setback, except those specifically listed above in subsection 83.190 2.d.2).d).

3. Maximum Lot Coverage –

a. General –

1) KZC 83.180.3, Development Standards Chart, establishes the maximum lot coverage by use and shoreline environment.

2) In calculating lot coverage, lands waterward of the ~~ordinary high watermark~~OHWM shall not be included in the calculation.

3) 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.

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

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

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

4. Height Regulations –

a. General –

1) KZC 83.180.3, Development Standards Chart, establishes the maximum allowed building height for all primary and accessory structures. In the event that the maximum allowable building height in KZC 83.180.3 is greater than the maximum allowable height in the Kirkland Zoning Code, the lower of the two height provisions shall apply.

2) 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.

3) In the CBD zones, maximum building height shall be measured from the midpoint of the abutting right-of-way, not including alleys.

4) Pursuant to RCW 90.58.320, no permit shall be issued for any new or expanded building or structure more than 35 feet above average grade level that will obstruct the view to the lake 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 to the lake for 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 2 as described in KZC 115 for calculating average building elevation and depicted in Plate 17B.

b. Exceptions –

1) Element or feature of a structure, other than the appurtenances listed below, shall not 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 to the lake 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 as regulated in KZC 115.

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

d) Rooftop solar panels or other similar energy devices provided that the equipment is mounted as flush to the roof as ~~possible~~feasible.

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

a) In the Natural shoreline environment, the structure height of a detached dwelling unit may exceed the standard height limit by a maximum of 5 feet above average building elevation if a reduction in the footprint of the building is sufficient to lessen the impact on a sensitive area and sensitive area buffer. The City shall include in the written decision any conditions and restrictions that it 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 83.410.

c) Properties in the PLA 15A zone in the UM Shoreline Environment that contain mix 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.

83.200 Residential Uses

1. General – Residential uses shall not occur over water, including houseboats, live-aboards, or other single- or multi-family dwelling units.

2. Detached Dwelling Units in the Residential-L environment- Not more than one dwelling unit shall be on each lot, regardless of the size of each lot, except an accessory dwelling unit.

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.

83.210 Commercial Uses

1. Float Plane Landing and Mooring Facilities –

a. Use of piers or docks 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) 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; and

3) Hours of operation may be limited to minimize impacts on nearby residents.

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 83.440.

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.

   g. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.

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 is provided, boats shall be removed from the water and debris shall be captured and disposed in a proper manner.

   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.

   b. Drive-in or drive-through facilities are prohibited.

83.220 Recreational Uses

1. Motorized Boats – See KMC Chapter 14.24, Operation of Watercraft, for prohibition of use within restricted shoreline areas and established speed limits.

2. Floats/swim platforms – Only public floats/swim platforms are permitted.

3. Marina, Piers, Moorage Buoy or Pilings, Boat Facility and Boat Canopies – See standards contained in KZC Section 83.270 through 290.

4. 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, such as, but not limited to, a consideration of the following conditions: the presence of submerged aquatic vegetation, proximity to shoreline associated wetlands, critical nesting and spawning areas, water depth, water circulation, sediment inputs and accumulation, and wave action

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. Associated buildings and structures, other than moorage structure for the tour boat facility, 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.

g. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.

5. Public Access Pier, Dock or Boardwalk –

a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing and constructing the use minimizing impacts

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

c. See KZC 83.370 for federal and state approvals prior to submittal of a building permit for this use.

d. Must provide at least one (1) covered and secured waste receptacle upland of the ~~ordinary high water mark~~OHWM.

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

f. Piers or docks 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. Public access structures shall not be within 10 feet of a side property line, except that setbacks between moorage structures and north and south property lines may be decreased for over-water public use facilities that connect with waterfront public access on adjacent property.

i. Public access structures shall be separated from the outlet of a stream, including piped streams, by the maximum extent ~~possible~~feasible, 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 primary walkways and floats shall be no wider than 8 feet.

6. 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 extent~~d~~ 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.

7. Boat Launch (for motorized boats) -

a. Location Standards –

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

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

a) Separated from existing designated swimming areas by a minimum of 25 feet.

b) Meet KZC 83.360 for avoiding impacts to fish and wildlife habitats.

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

d) Not be located within 25 feet 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 6 feet below the OHWM, unless the City determines that a greater depth is needed for a public boat launch facility.

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.

8. Public Park - Recreation facilities that support non-water related, high-intensity activities, such as basketball and tennis courts, baseball and soccer fields and skate parks, shall be located outside of shoreline jurisdiction to the extent feasible.

9. 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, designed and constructed to meet KZC 83.360 for net loss of shoreline ecological functions.

83.230 Transportation Facilities

1. General -

   a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.

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

   c. 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.

   d. 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.

   e. 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 riparian 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. Construct facilities that cross streams to allow passage of fish inhabiting the stream or which may inhabit the stream in the future are allowed.

   e. Construct facilities within the 100-year floodplain to allow for water pass-through are allowed.

3. Passenger-only Ferry Terminal –

   a. See KZC 83.360 for minimizing impacts when locating, designing, constructing and operating the use.

   b. Associated buildings and structures, other than moorage structure for the ferry terminal 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. The City will make the determination if any parking and/or a passenger loading area will be required.

4. Water Taxi –

   a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.

   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.

5. Arterials, Collectors, and Neighborhood Access Streets and Bridges –

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 identifies significant features along the shoreline.

j. Vegetation 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~~feasible.

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

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

83.240 Utilities

1. General –

a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use

b. 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.

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

d. New utilities shall not be located waterward of the OHWM or in the Natural shoreline environment unless it is demonstrated that no feasible alternative exists.

e. 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.

f. 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.

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

h. Utilities shall provide screening of facilities from water bodies and adjacent properties in a manner that is compatible with the surrounding environment. The City will determine the type of screening on a case-by-case basis.

i. 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.

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. Construction of pipelines placed under aquatic areas shall be placed in a sleeve in order to avoid the need for excavation in the event of a failure in the future.

d. Construction located near wetlands and streams shall use native soil plugs, collars or other techniques to prevent potential dewatering impacts.

~~c.~~e. See KZC 83.480 for conducting maintenance activities that minimize impacts.

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 other equipment from the lake and public pedestrian pathways or public use areas.

83.250 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 83.420, unless otherwise excepted or modified under the provisions of KZC 83.420.
3. Land Divisions shall establish a prohibition on new private piers and 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 83.270.
4. View corridors, established as part of a land division, shall be depicted on the face of the recorded document.

Shoreline Modification Regulations

83.260 General

1. See KZC 83.360 for No Let Loss Standard and mitigation sequencing.
2. KZC 83.370 for federal and state approval required prior to submittal of a building permit.
3. KZC 83.430 for In Water Construction.
4. 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.

83.270 Piers, Docks, Moorage Buoys and Piles, Boatlifts and Boat Canopies Serving a Detached Dwelling Unit Use

1. General –

   a. Piers, Docks, Moorage Buoys and Piles, Boatlifts and Canopies may only be developed and used accessory to existing 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 shall not be leased, rented, or sold unless otherwise approved as a Marina under the provisions of KZC 83.290.

   b. In the following circumstances, a joint use pier shall be required:~~The applicant for any new private pier or dock associated with a detached dwelling unit must demonstrate that a shared or joint-use pier is not feasible:~~.

      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.~~

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

      ~~3)~~2)New residential development of two or more dwelling units with waterfront access rights~~ must provide a joint-use or community dock facility~~.

   c. Piers, docks, boatlifts and moorage piles shall be designed and located to meet KZC 83.360 No Net Loss standard and Mitigation Sequencing.

   d. See KZC 83.370 for structures proposed to be extended waterward of the Inner Harbor Line.

2. Setbacks

   a. All piers, docks, boatlifts and moorage piles for Detached Dwelling Unit Use shall comply with the following location standards:

New Pier, Dock, Boatlift and Moorage Pile for Detached Dwelling Unit	Minimum Setback Standards
Side property lines	10 ft.
Another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required side property line setback	25 ft.
Outlet of a stream regulated under KZC 90, including piped streams	Maximum distance feasible ~~possible~~ while meeting other required setback standards established under this section
Public park	25 ft., except that this standard shall not apply within the Urban Mixed shoreline

	environment.

b. Joint-use structures may abut property lines provided the property owners sharing the moorage facility 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 or dock is used by the other property. The applicant must file this statement with the King County ~~Bureau of Elections and Records~~ Recorder's Office to run with the properties.

3. General Standards –

a. Proposed piers and docks that 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.

b. 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.

c. 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.

d. The following structures and improvements are not permitted:

a.) Covered moorage, boathouses, or other walled covered moorage, except boat canopies that comply with the standards in this subsection.

b.) Skirting on any structure

c.) Aircraft moorage

e. See KZC 83.470 Lighting Standards for required lighting.

f. 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 4 inches high.

g. 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 and windows shall be generally non-reflective.

h. Must provide at least one (1) covered and secured waste receptacle.

i. All utility and service lines located waterward of the OHWM must be below the pier deck. All utility and service lines located upland of the OHWM shall be underground, where feasible.

4. New Pier or Dock Dimensional Standards –

a) New piers or docks may be permitted, subject to the following regulations:

New Pier, Dock or Moorage Piles for Detached Dwelling Unit	**Dimensional and Design Standards**
Maximum Area: surface coverage, including all attached float decking, ramps, ells and fingers	480 sq. ft. for single property owner 700 sq. ft. for joint-use facility used by 2 residential property owners 1000 sq. ft. for joint-use facility used by 3 or more residential property owners

	These area limitations shall include platform lifts Where a pier cannot reasonably be constructed under the area limitation above to obtain a moorage depth of 10 ft. measured above ordinary high water, an additional 4 sq. ft. of area may be added for each additional foot of pier length needed to reach 10 feet of water depth.
Maximum Length for piers, docks, ells, fingers and attached floats	150 ft, but piers or docks extending further waterward than adjacent piers or docks must demonstrate that they will not have an adverse impact on navigation. 26 ft. for ells 20 ft. for fingers and float decking attached to a pier
Maximum Width	4 ft. for pier or dock 6 ft. for ells 2 ft. for fingers 6 ft. for float decking attached to a pier, must contain a minimum of 2 ft. of grating down the center of the entire float.
Height of piers and diving boards	Minimum of 1.5 ft. above ordinary high water to bottom of pier stringers, except the floating section of a dock and float decking attached to a pier Maximum of 3 feet above deck for diving boards or similar features above the deck surface Maximum of 3 feet above deck for safety railing, which shall be an open framework
Minimum Water Depth for ells and float decking attached to a pier	Must be in water with depths of 9 feet or greater at the landward end of the ell or finger. Must be in water with depths of 10 feet or more at the landward end of the float
Decking for piers, docks walkways, platform lifts, ells and fingers	Piers and docks and platform lifts must be fully grated ~~with 40% open area~~or contain other materials that allow a minimum of 40% light transmittance through the material If float tubs for docks preclude use of fully grated decking material, then a minimum of 2 ft. of grating down the center of the entire float shall be provided
Location of ells, fingers and deck platforms	30 ft. waterward of the OHWM Within 30 ft. of the OHWM, only the access ramp portion of pier or dock is allowed
Pilings, Moorage Piles, and Buoys	Piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds. First set of piles located no closer than 18 ft from OHWM Maximum 2 moorage piles or buoys per detached dwelling unit, including existing piles Maximum 4 moorage piles or buoys for joint use piers or docks, including existing piles

b. The City may approve the following modifications to new pier proposals that deviate from the dimensional standards of KZC 83.270.4 if the following requirements are met:

Item	Requirements
State and Federal Agency Approval	U.S. Army Corps of Engineers, the Washington Department of Ecology, and the Washington Department of Fish and Wildlife have approved proposal.
Maximum Area	No larger than authorized through State and Federal approval
Maximum Length	Same as noted in KZC 83.270.4
Maximum Width	4 ft. for portion of pier or dock located within 30 feet of the OHWM; otherwise, 6 feet ~~ft. for pier or dock~~for walkways and ell Otherwise, the pier and all components shall meet the standards noted in KZC 83.270.4

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

1) Any existing in-water and overwater structures shall be removed if they are associated with either a moorage structure or other recreational use that is located within 30 feet of the OHWM ~~shall be removed~~.

2) Emergent vegetation shall be planted waterward of the ~~ordinary high water mark~~OHWM, unless the City determines that it is not appropriate or feasible.

3) Native riparian vegetation shall be planted 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~~OHWM, but may be a minimum of five (5) feet wide to allow for variation in landscape bed shape and plant placement. Joint-use piers required under the provisions of this Chapter shall~~will~~ require a vegetative riparian zone along all properties sharing the pier. Other joint-use piers shall be required to provide the same mitigation as required for one property, which can be slit evenly between the subject properties.

4) 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 or shoreline appropriate 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~~ shall be allowed if approved by other state and federal agencies.

In addition, the City shall~~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 vegetation.

b) Vegetation placement – See the provisions contained in Section 83.400.

~~i.In shoreline environments that require a view corridor, 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.~~i. ~~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.~~

5) In addition to a native planting plan, a 5 -year vegetation maintenance and monitoring plan shall be submitted to the City for approval. 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 5 years, that include written and photographic documentation on tree and shrub mortality, subject to the following success criteria:

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

ii. 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, provided that the reports address a 5 year maintenance and monitoring plan.

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

6. Replacement of Existing Pier or Dock –

a. A replacement of an existing pier or dock shall meet the following requirements:

Replacement of Existing Pier or Dock for Detached Dwelling Unit	**Requirements**
Replacement of entire existing pier or dock, including piles OR more than 50 percent of the pier-support piles and 50 percent of the decking or decking substructure (e.g. stringers)	Must meet the dimensional and design standards for new piers as described in KZC 83.270.4, except the City may administratively approve an alternative design described in subsection b. below.
Mitigation	Existing skirting shall be removed and may not be replaced Existing in-water and overwater structures located within 30 feet of the OHWM, except for existing or authorized shoreline stabilization measures or piers or docks, shall be removed

b. Alternative Design - The City may approve pier replacement proposals that deviate from the dimensional standards of KZC 83.270.4 if the following requirements are met:

Administrative Approval for Alternative Design of Replacement Pier or Dock for Detached Dwelling	**Requirements**

Unit	
State and Federal Agency Approval	U.S. Army Corps of Engineers, the Washington Department of Ecology, and the Washington Department of Fish and Wildlife have approved proposal.
Maximum Area	No larger than existing pier
Maximum Length	26 ft. for fingers and float decking attached to a pier Otherwise, the pier and all components shall meet the standards noted in KZC 83.270.4
Maximum Width	8 ft. for ells and float decking attached to a pier Otherwise, the pier and all components shall meet the standards noted in KZC 83.270.4

Additions to Pier or Dock –

Proposals involving the modification and/or enlargement of existing private piers or docks must comply with the following requirements:

Addition to Existing Pier or Dock for Detached Dwelling Unit	**Requirements**
Addition or enlargement	Must demonstrate that there is a need for the enlargement of an existing pier or dock. Examples of need include, but are not limited to ~~based upon~~ safety concerns or inadequate depth of water.
Pier or dock length and width, height, water depth, location, decking and pilings	Enlarged portions must comply with the dimensional, materials, and mitigation standards for new piers as described in KZC 83.270.
Decking for piers, docks walkways, ells and fingers	Must convert an area of existing nearshore decking to grated decking equivalent in size to the additional surface coverage
Mitigation	Existing skirting shall be removed and may not be replaced Existing in-water and overwater structures located within 30 feet of the OHWM, except for existing or authorized shoreline stabilization

	measures or pier or docks, shall be removed at a 1:1 ratio to the area of the addition

8. Repair of Existing Pier or Dock–

Repair proposals that replace only decking or decking substructure and less than 50 percent of the existing pier-support piles must comply with the following regulations:

Repair of Existing Pier or Dock for Detached Dwelling Unit	**Requirements**
Replacement piles	Must use materials as described under KZC 83.270.5 Must minimize the size of piles and maximize the spacing between pilings to the extent allowed by site-specific engineering or design considerations
Replacement of 50 percent or more of the decking or 50 percent or more of decking substructure	Must replace any solid decking surface located within the nearshore 30 feet of the pier or dock with a grated surface material

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 cumulative repairs of an existing pier or dock would make a proposed repair exceeds the threshold for a replacement pier established in KZC 83.270.5, above, the repair proposal shall be reviewed under KZC 83.270.4 for a new pier or dock, , except as described in KZC 83.270.5.b for administrative approval of alternative design.

9. Boatlifts, Boatlift Canopies and Moorage Piles –

Boatlifts, boatlift canopies and moorage piles may be permitted as an accessory to piers and docks, subject to the following regulations:

Boatlift, Boat Canopy and Moorages Buoy for Detached Dwelling Unit	**Requirements**

Location	Boat lifts shall placed as far waterward of the OHWM as feasible and safe, within the limits of the dimensional standards for piers established in KZC 83.270.4 Bottom of a boatlift canopy shall be elevated above the boatlift to the maximum extent feasible, the lowest edge of the canopy must be a least 4 ft. above the ordinary high water, and the top of the canopy must not extend more than 4 ft. above an associated pier. Moorage piles or buoys shall not be closer than 30 ft. from OHWM or any farther waterward than the end of the pier or dock Moorage piles or buoys shall be located no further than 12 ft. from a pier or dock
Maximum Number	1 free-standing or deck-mounted boatlift per detached dwelling unit 2 jet ski lifts or 1 fully grated platform lift per detached dwelling unit use 1 boatlift canopy per detached dwelling unit, including joint use piers 2 moorage piles per detached dwelling unit, including existing piles 4 moorage piles for joint use piers or docks, including existing piles
Canopy Materials	Must be made of translucent fabric materials. Must not be constructed of permanent structural material.
Fill for Boatlift	Maximum of 2 cubic yards of fill are permitted to anchor a boatlift, subject to the following requirements: • May only be used if the substrate prevents the use of anchoring devices which can be embedded into the substrate • Must be clean • Must consist of rock or pre-cast concrete blocks • Must only be used to anchor the boatlift • Minimum amount of fill is utilized to anchor the boatlift

83.280 Piers, Docks, Boat lifts and Canopies Serving Detached, Attached or Stacked Dwelling Units (Multi-family)

1. General –

   a. Piers, Docks, Moorage Buoy and Piles, Boatlifts and Canopies may only be developed and used accessory to existing 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 shall not be leased, rented, or sold unless otherwise approved as a Marina under the provisions of KZC 83.290.

b. Piers, docks, boatlifts and moorage piles shall be designed and located to meet KZC 83.360 No Net Loss standard and Mitigation Sequencing.

c. See KZC 83.370 for structures to be extended waterward of the Inner Harbor Line.

2. Setbacks –

All piers, docks, boatlifts and moorage piles serving Detached, Attached or Stacked Dwelling Units shall comply with the following setback standards:

New Pier, Dock, Boatlift and Moorage Pile for Detached, Attached or Stacked Dwelling Units (multi-family)	**Minimum Setback Standards**
Side property lines	10 ft.
Lot containing a detached dwelling unit	The area defined by a line that starts where the OHWM of the lot intersects the side property line of the lot closest to the moorage structure and runs waterward toward the moorage structure and extends 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. This standard shall not apply within the Urban Mixed shoreline environment.
Another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required north and south property line setback	25 ft.
Outlet of a stream regulated under KZC 90, including piped streams	Maximum distance ~~possible~~feasible while meeting other required setback standards established under this section
Public park	100 feet; or The area defined by a line that starts where the OHWM of the park intersects with the side property line of the park closest to the moorage structure and extends 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. This standard shall not apply within the Urban Mixed shoreline environment.

3. Number of Moorage Spaces – The City will limit the total number of moorages to one per each dwelling unit on the subject property. In addition, each unit shall be allowed to moor jet skis or kayaks or similar watercraft on the property. (already stated in 83.280.1)

4. General Standards -

   a. The design of the site must be compatible with the scenic nature of the waterfront.

   b. Must provide at least 2 covered and secured waste receptacles upland of the OHWM.

   c. All utility and service lines located waterward of the OHWM must be below the pier deck. All utility and service lines located upland of the OHWM shall be underground, where feasible.

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

   e. Exterior finish shall be generally non-reflective.

   f. 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.

   g. See KZC 83.470 Lighting Standards for required lighting.

      h. The following structures and improvements are not permitted:

      a.) Covered moorage, boathouses, or other walled covered moorage, except boat canopies that comply with the standards in this subsection.

      b.) Skirting on any structure

      c.) Aircraft moorage

5. New Pier or Dock Dimensional Standards -

   a. Moorage structures shall 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:

      1) 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;

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

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

      4) 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 standards:

New Pier, Dock or Moorage Piles for Detached, Attached or Stacked Dwelling Units (Multi-family)	**Dimensional and Design Standards**

Maximum Width	4 ft. within 30 ft of the OHWM for pier, dock or floating deck 6 ft. for pier or dock more than 30 ft. waterward of the OHWM 8 ft. for ells 4 ft. for fingers, 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. 6 ft. for float decking attached to a pier An alternative design in lieu of meeting these requirements ~~may~~ shall be allowed if approved by other state and federal agencies.
Height of piers and diving boards	Minimum of 1.5 ft above ordinary high water to bottom of pier stringers, except the floating section of a dock and float decking attached to a pier Maximum of 3 ft. above deck for diving boards or similar features above the deck surface Maximum of 3 feet above deck for safety railing, which shall be an open framework
Minimum Water Depth for ells and float decking attached to a pier	Must be in water with depths of 9 feet or greater at the landward end of the ell or finger. Must be in water with depths of 10 feet or more at the landward end of the float
Decking for piers, docks walkways, platform lifts, ells and fingers	Must be fully grated ~~with 40% open area~~or contain other materials that allow a minimum of 40% light transmittance through the material If float tubs for docks preclude use of fully grated decking material, then a minimum of 2 ft. of grating down the center of the entire float shall be provided
Location of ells, fingers and deck platforms	No closer than 30 ft. waterward of the OHWM Within 30 ft. of the OHWM, only access ramp portion of pier or dock is allowed
Pilings and Moorage Piles	First set of piles located no closer than 18 ft from OHWM Pilings shall be composed of steel, concrete, plastic or untreated wood. Piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds.

6. Mitigation –

All proposals involving new piers or docks are subject to the following mitigation requirements:

a. Any existing in-water and overwater structures shall be removed if they are associated with either a moorage structure or other recreational use that is located within 30 feet of the OHWM ~~shall be removed~~.

b. Emergent vegetation shall be planted waterward of the ~~ordinary high water mark~~OHWM, unless the City determines that it is not appropriate or feasible.

c. Native riparian vegetation shall be planted 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~~OHWM, 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 vegetative riparian zone along all properties sharing the pier.

d. Mitigation plantings shall be subject to the following requirements:

1) 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 or shoreline appropriate 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.

2) An alternative planting plan or mitigation measure in lieu of meeting these requirements ~~may~~ shall be allowed if approved by other state and federal agencies. In addition, the City ~~may~~ shall 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 vegetation.

3) Vegetation placement – See the provisions contained in Section 83.400.

~~a)In shoreline environments that require a view corridor, 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.~~

~~b)~~a)~~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.~~

4) In addition to a native planting plan, a 5 -year vegetation maintenance and monitoring plan shall be submitted to the City for approval. 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 5 years, that include written and photographic documentation on tree and shrub mortality, subject to the following success criteria:

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

ii) 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, provided that the reports address a 5 year maintenance and monitoring plan.

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

7. Replacement, Additions and Repairs -

a. Replacement - Replacement of Piers and Docks serving Detached, Attached or Stacked Dwelling Units shall be considered under the provisions for New Piers and Docks Serving Detached, Attached or Stacked Dwelling Units established in KZC 83.280.

b. Additions – Proposals involving the modification and/or enlargement of existing piers or docks must comply with the following measures:

Additions to Pier, Dock or Moorage Piles for Detached, Attached or Stacked Dwelling Units (Multi-family)	**Requirements**
Addition or enlargement	Must demonstrate that there is a need for the enlargement of an existing pier or dock. Examples of need include, but are not limited to, ~~based upon~~ safety concerns or inadequate depth of water.
Pier or dock length and width, height, water depth, location, decking and pilings	Enlarged portions must comply with the dimensional, materials, and mitigation standards for new piers as described in KZC 83.280.
Decking for piers, docks walkways, ells and fingers	Must convert an area of existing nearshore decking to grated decking equivalent in size to the additional surface coverage
Mitigation	Existing skirting shall be removed and may not be replaced Existing in-water and overwater structures located within 30 feet of the OHWM, except for existing or authorized shoreline stabilization measures or pier or docks, shall be removed at a 1:1 ratio to the area of the addition

c. Repair– 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:

Repair to Pier, Dock or Moorage Piles for Detached, Attached or Stacked Dwelling Units (Multi-family)	**Requirements**
Replacement piles	Must use materials as described under KZC 83.280.5 Must minimize the size of piles and maximize the spacing between pilings to the extent allowed by site-specific engineering or design considerations

Replacement of 50 percent or more of the decking or 50 percent or more of decking substructure	Must replace any solid decking surface located within the nearshore 30 feet of the pier or dock with a grated surface material

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 cumulative repairs of an existing pier or dock would make a proposed repair exceeds the threshold established in KZC 83.280.5.b, above, the repair proposal shall be reviewed under KZC 83.280 for a new pier or dock.

8. Boatlifts, Boatlift Canopies and Moorage Piles for serving Detached, Attached or Stacked Dwelling Units –

Boatlifts, boatlift canopies and moorage piles may be permitted as an accessory to piers and docks, subject to the following regulations:

Boatlift, Boat Canopy and Moorages Buoy for Detached, Attached or Stacked Dwelling Units (Multi-family)	**Regulations**
Location	Boat lifts shall placed as far waterward of the OHWM as feasible and safe, within the limits of the dimensional standards for piers and docks established in KZC 83.280.5 Bottom of a boatlift canopy shall be elevated above the boatlift to the maximum extent feasible, the lowest edge of the canopy must be a least 4 ft. above the ordinary high water, and the top of the canopy must not extend more than 4 ft. above an associated pier. Moorage piles shall not be closer than 30 ft. from OHWM or any farther waterward than the end of the pier or dock Moorage piles shall be located within 12 ft. of a pier or dock
Maximum Number	1 freestanding or deck-mounted boatlift is allowed per dwelling unit on the subject property. 2 jet ski lifts or 1 fully grated platform lift is permitted per dwelling unit on the subject property. 2 boatlift canopies or equal to 10 percent of the dwelling units on the subject property, whichever is greater.
Canopy Materials	Must be made of translucent fabric materials. Must not be constructed of permanent structural material.

Fill for Boatlift	Maximum of 2 cubic yards of fill are permitted to anchor a boatlift, subject to the following requirements: • May only be used if the substrate prevents the use of anchoring devices which can be embedded into the substrate • Must be clean • Must consist of rock or pre-cast concrete blocks • Must only be used to anchor the boatlift • Minimum amount of fill is utilized to anchor the boatlift

9. Submittal Requirements - In addition to submitting an application to construct a new, enlarged or replacement pier or dock, the applicant shall submit an assessment of the impacts and measures taken to avoid, minimize, and mitigate impacts. See Section 83.360 KZC for information on mitigation sequencing.

83.290 Marinas and Moorage Facilities Associated with Commercial Uses

1. General –

   a. Marinas shall not be approved in cases where it is 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.

   b. Marinas shall be designed and located according to the following criteria:

      1) Shall not interfere with the public use and enjoyment of the water or create a hazard to navigation;

      2) Shall meet KZC 83.360 for avoiding adverse impacts, minimizing impacts and mitigating unavoidable impacts; and

      3) Shall be located only at sites with sufficient water depth, adequate navigational and vehicular access, and not adjacent to an outlet of a stream.

   2. Setbacks

   Moorage structures within marinas shall comply with the following location standards:

Feature	Minimum Setback Standards
Side property lines	10 ft.
Lot containing a detached dwelling unit	The area defined by a line that starts where the OHWM of the lot intersects the side property line of the lot closest to the moorage structure and runs waterward toward the moorage structure and extends 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. This standard shall not apply

	within the Urban Mixed shoreline environment.
Another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required north and south property line setback	25 ft.
Outlet of a stream regulated under KZC 90, including piped streams	Maximum distance ~~possible~~feasible while meeting other required setback standards established under this section
Public park	100 feet; or The area defined by a line that starts where the OHWM of the park intersects with the side property line of the park closest to the moorage structure and extends 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. This standard shall not apply within the Urban Mixed shoreline environment.

3. Number of Moorage Slips –

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

1) The suitability of the environmental conditions, such as, but not limited to: the presence of submerged aquatic vegetation, proximity to shoreline associated wetlands, critical nesting and spawning areas, water depth, water circulation, sediment inputs and accumulation, and wave action.

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

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

4. General Standards -

a. See KZC 83.370 for required state and federal approval.

b. Structures, other than each moorage structure or public access pier, shall not be waterward of the OHWM. For regulations regarding public access piers, see KZC 83.220.

c. At least 2 covered and secured waste receptacles shall be provided upland of the OHWM.

d. Utility and service lines located waterward of the OHWM must be below the pier deck. Utility and service lines located upland of the OHWM shall be underground, where feasible.

e. Public restrooms shall be provided upland of the OHWM.

f. At least 1 pump-out facility for use by the general public shall be provided. This facility must be easily accessible to the general public and clearly marked for public use.

g. 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.

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

i. Exterior finish shall be generally non-reflective.

j. 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.

k. See KZC 83.470 Lighting Standards for required lighting.

l. Covered moorage, including boatlift canopies, is not permitted.

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

n. Marinas and other moorage facilities associated with commercial uses shall be designed and operated consistent with federal and state water quality laws and 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. Rules for spill prevention and response, including reporting requirements, shall be posted on site.

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

5. New Pier or Dock Dimensional Standards –

a. Moorage structures shall 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:

1) 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;

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

3) 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 of the lake.

b. (already in 83.290.1.b)For public access piers, docks or boardwalks associated with public parks and other public facilities see KZC 83.220.5 for allowed width of the structure.

c. Piers and docks shall be the minimum size necessary to meet the needs of the proposed water-dependent use and shall meet the following dimensional and design standards:

Marinas and Moorage Facilities Associated with Commercial Uses	**Dimensional and Design Standards**
Maximum Width	6 ft. for access ramp portion of pier or dock and primary walkways 8 ft. for ells 4 ft. for fingers, 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. 6 ft. for float decking attached to a pier. An alternative design in lieu of meeting these requirements may be allowed if approved by other state and federal agencies.

Height of piers, diving boards and railings	Minimum of 1.5 ft above ordinary high water to bottom of pier stringer, except the floating section of a dock and float decking attached to a pier Maximum of 3 ft. above deck for diving boards or similar features above the deck surface Maximum of 3 ft. above deck for safety railing, which shall be an open framework
Decking for piers, docks walkways, ells and fingers	Fully grated or contain other materials that allow a minimum of 40% light transmittance through the material~~with 40% open area~~ If float tubs for docks preclude use of fully grated decking material, then a minimum of 2 ft. of grating down the center of the entire float shall be provided
Location of ells, fingers and deck platforms	No closer than 50 ft. waterward of the OHWM Within 50 ft. of the OHWM, only access ramp portion of pier or dock is allowed
Pilings	First set of piles located no closer than 18 ft from OHWM Pilings shall be composed of steel, concrete, plastic or untreated wood. Piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds.

6. Replacement, Additions and Repairs –

a. Replacement - Replacement of marinas or portions thereof shall be considered under the provisions for marinas established in KZC 83.290.

b. Additions– Proposals involving the modification and/or enlargement of marinas must comply with the following measures:

Additions to Marinas and Moorage Facilities Associated with Commercial Uses	**Requirements**
Addition or enlargement	Must demonstrate that there is a need for the enlargement of an existing pier or dock based upon safety concerns or inadequate depth of water.
Pier or dock length and width, height, water depth, location, decking and pilings	Enlarged portions must comply with the dimensional, materials, and mitigation standards for new piers as described in KZC 83.290.
Decking for piers, docks walkways, ells and fingers	Must convert an area of existing nearshore decking to grated decking equivalent in size to the additional surface coverage
Mitigation	Existing skirting shall be removed and may not be replaced

	Existing in-water and overwater structures located within 50 feet of the OHWM, except for existing or authorized shoreline stabilization measures or pier or docks, shall be removed at a 1:1 ratio to the area of the addition

c. Repair– 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:

Repair to Marinas and Moorage Facilities Associated with Commercial Uses	**Requirements**
Replacement piles	Must use materials as described under KZC 83.290.5 Must minimize the size of piles and maximize the spacing between pilings to the extent allowed by site-specific engineering or design considerations
Replacement of 10 percent or more of the decking or decking substructure	Must replace any solid decking surface located within the nearshore 30 feet of the pier or dock with a grated surface material
Repair of the roof structure of existing boathouses or other similar covered moorage	Must use translucent materials

Other repairs to existing legally established marinas 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 cumulative repairs of an existing marina would make a proposed repair exceeds the threshold established in KZC 83.290.5.b, above, the repair proposal shall be reviewed under KZC 83.290 for a new marina.

7. 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 KZC 83.360 for mitigation sequencing.

83.300 Shoreline Stabilization

1. General -

a. The standards in this section apply to all developments and uses in shoreline jurisdiction.

b. New development or redevelopment shall be located and designed to avoid the need for new or future soft or hard structural shoreline stabilization to the ~~maximum~~ extent feasible.

c. If structural stabilization is necessary to protect the primary structure, then the feasibility of soft structural measures shall be evaluated prior to consideration of hard structural measures. Soft structural stabilization measures must be used unless the City determines that it is not ~~to be~~ feasible based on information required in this section and provided by the applicant.

~~c.~~d. Soft shoreline stabilization may include the use of gravels, cobbles, boulders, and logs, as well as vegetation.

~~d.~~e. Plate XX provides guidance on different shoreline stabilization measures that ~~should~~ may be considered, based upon the unique characteristics of the subject property and shoreline.

~~e.~~f. During construction or repair work on a shoreline stabilization measure, areas of temporary disturbance within the shoreline setback shall be restored as quickly as ~~possible~~feasible to their pre-disturbance condition or better to avoid impacts to the ecological function of the shoreline. Also see KZC 83.430 for in-water construction activity.

~~f.~~g. The following is a summary of the key requirements found in KZC 83.300.2 through KZC 83.300.5:

Shoreline Stabilization Measures	Requirements
~~Soft Shoreline versus Hard Shoreline~~Structural and Nonstructural Methods	~~Natural shoreline is~~ Nonstructural methods preferred, but if a structural stabilization measure is demonstrated to be needed to protect primary structure, then soft structural stabilization must be considered prior to hard structural stabilization.
New or Enlargement of Hard Shoreline Structural Measures (enlargement includes additions and increases in size, such as height, width, length, or depth, to existing shoreline stabilization measures)	Allowed when existing primary structure is 10 feet or less from OHWM When existing primary structure is greater than 10 feet from OHWM, r~~R~~equires geotechnical report to show need, ~~except when existing primary structure is 10 feet or less from OHWM.~~, and an ~~Requires~~ evaluation of the feasibility of soft structural shoreline stabilization measures in lieu of hard structural shoreline stabilization measures and ~~, as well as~~ design recommendations for minimizing structural shoreline measures.
Major Repair or Replacement of Hard Shoreline Structural Measures	~~The following shall be regulated as new stabilization measure, except for requirement for a formal geotechnical~~

	report: When considered major repair or replacement: • Repair of a collapsed or eroded stabilization structure or a demonstrated a loss of structural integrity of stabilization structure, or repair of toe rock or footings; and is more than 50% than 15 feet in continuous linear length • 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 Allowed when existing primary structure is 10 feet or less from OHWM For existing primary structure is more than 10 feet from the OHWM, rRequires a needs assessment, except not when existing primary structure is 10 feet or less from the OHWM or when hard structural stabilization is replaced with soft structural stabilization measure.
Minor Repair of Hard Shoreline Stabilization Measure	Does not meet threshold of new, enlarged, major repair or replacement measurement. No geotechnical report or needs assessment required.
New, Enlarged, Repair or Replacement of Soft Shoreline Stabilization Measure	Allowed when existing primary structure is 10 feet or less from OHWM or for repair or replacement. For primary structure greater than 10 feet from the OHWM, new or enlarged requires needs assessment

2.1 New or Enlarged Structural Shoreline Stabilization –

A. New hard or soft structural shoreline stabilization measures shall not be authorized, except when a geotechnical report confirms that that there is a significant possibility that an existing structure will be damaged generally within 3 years as a result of shoreline erosion in the absence of such 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.

a. b. EnlargementFor the purposes of this section, enlargement of an existing structural stabilization shall include additions to or increases in size (such as height, width, length, or depth).

b. c. Structural stabilization measures shall not beWhen allowed:-

The City may only approve a new or enlarged hard or soft structural shoreline stabilization measure in the following circumstances:

1) To protect an existing primary structure~~s~~, including ~~residences, when conclusivea~~ a detached dwelling unit, in either of the following circumstances:

a) The existing primary structure is located 10 feet or less from the OHWM. For the purposes of the provision, the distance shall be measured to the most waterward location of the primary structure, or

b) The existing primary structure is located more than 10 feet from the OHWM .~~and Conclusive evidence, documented by a geotechnical analysis, is provided to the City that the primary structure is in danger from shoreline erosion caused by waves. The geotechnical analysis shall evaluate~~

In order to be approved, the applicant must demonstrate the following:

(1). For new or enlarged hard structural shoreline stabilization, conclusive evidence, documented by a geotechnical analysis, that the primary structure is in danger from shoreline erosion caused by waves The analysis must show that t~~T~~here is a significant possibility that an existing structure will be damaged within three (3) years as a result of shoreline erosion in the absence of 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. Where the geotechnical report confirms a need to prevent potential damage to a primary structure, but the need is not as immediate as three (3) years, the report may still be used to justify more immediate authorization to protect against erosion using soft structural shoreline stabilization measures.

(2). ~~-~~For new soft structural shoreline stabilization measures, show need for structural stabilization to protect the new primary structure.

(3). For hard and soft shoreline stabilization measures, a~~A~~ny on-site drainage issues~~-~~ ~~and address drainage problems~~ have been directed away from the shoreline edge ~~before~~prior to considering structural shoreline stabilization.

(4). For hard and soft shoreline stabilization measures, ~~N~~nonstructural measures, such as planting vegetation, or installing on-site drainage improvements are shown not to be feasible or ~~not~~ sufficient to protect the primary structure .

~~The geotechnical analysis requirement shall be waived when an existing primary structure, including residences, is located 10 feet or less from the OHWM.~~

2) To protect a new primary structure ~~In support of new non-water-dependent development~~, including a detached dwelling unit~~, or existing or new water-dependent development~~ when all of the conditions below apply:

a) For new non water dependant uses, placing the new primary structure farther upland from the OHWM is not feasible or not sufficient to prevent erosion of the primary structure from wave action,

b) Upland conditions, such as drainage problems and the loss of vegetation, are not causing the erosion;

c) Nonstructural measures, planting vegetation, or installing on-site drainage improvements ~~and, for new non water-dependent development, placing the development farther from the shoreline~~ are shown not to be feasible or ~~not~~ sufficient to prevent erosion from wave action; and

d) The need to protect the new primary structures from potential damage due to erosion from wave action. For hard structural stabilization measures, a geotechnical report must be submitted demonstrating need. For soft structural stabilization

measures, an assessment by a qualified professional must be submitted demonstrating need. ~~is demonstrated through a geotechnical report. Natural processes, such as waves, must cause the damage.~~

3) 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. Submittal Requirements for New or Enlarged ~~Replacement~~ Structural Stabilization Measures -

In addition to the requirements described in KZC 83.300.2 above, t~~T~~he following shall be submitted to the City for an existing primary structure more than 10 feet from the OHWM or for a new primary structure:

1) For a hard structural shoreline stabilization measure, a geotechnical report prepared by a qualified professional with an engineering degree. The report shall include the following:

a) ~~1).~~ An assessment of the necessity for hard structural ~~shoreline~~ stabilization by estimating time frames and rates of erosion and documenting ~~reporting on~~ the urgency associated with the specific situation.

b) ~~2.)~~ An assessment of the cause of erosion, looking at processes occurring both waterward and landward of the OHWM.

~~Geotechnical report requirements for new or enlarged hard or soft structural shoreline stabilization measures shall be waived when a primary structure, including residences, is located 10 feet or less from the OHWM.~~

2) ~~b.~~ An assessment prepared by a qualified professional (e.g., shoreline designer or other consultant familiar with lakeshore processes and shore stabilization), containing the following:

a) ~~1) An~~ For a hard structural shoreline stabilization measure, an evaluation 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.~~ The evaluation ~~should~~ shall address the feasibility of implementing options presented in Plate XX~~, given~~ based on an assessment of the subject property's characteristics.

b) For a soft structural shoreline stabilization measure, an assessment of:

i) The erosion potential resulting from the action of waves or other natural processes operating at or waterward of the OHWM in the absence of the soft structural shoreline stabilization.

ii) The feasibility of using nonstructural measures in lieu of soft structural shoreline stabilization measures.

c) For both hard and soft structural shoreline stabilization measures, design - recommendations for minimum the sizing of ~~soft structural or hard structural~~ shoreline stabilization materials, including gravel and cobble beach substrates necessary to dissipate wave energy, eliminate scour, and provide long-term shoreline stability.

d~~c~~) See additional submittal requirements below in subsections 8, 9 and 10 for general submittal requirements, maintenance agreement and general design standards.

4. Replacement or Major Repair of Hard Structural Shoreline Stabilization -

~~Minor Repair -~~

~~1) The following improvements shall be considered as "minor repair" of a hard or soft shoreline measure:~~

a. For the purposes of this section, major repair or replacement of a hard shoreline stabilization measure shall include the following activities:

1) 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 the repair is ~~15 feet in continuous~~ 50 percent or greater than ~~of~~ the linear length of the shoreline stabilization measure; or

2) A repair to ~~less~~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.

b. When allowed - ~~Repair activities not meeting the threshold for a 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 for~~

~~The City may approve a major repair.~~

~~Minor repairs do not require a geotechnical report nor needs assessment.~~

~~b. Major Repair or Replacement~~

~~Major repair or replacement shall be treated as a new shoreline stabilization measure subject to the restrictions of subsection 2 above and the requirements of this section, except for the requirement to prepare a geotechnical analysis.~~

~~A geotechnical analysis is not required for major repairs or replacements of an existing hard or soft structural shoreline stabilization with a similar measure if the applicant demonstrates need through a report, drawings or photos to protect the primary structure from erosion caused by waves or other natural processes operating at or waterward of the OHWM.~~

~~In those circumstances where a primary structure, including residences, is located ten (10) feet or less from the OHWM demonstration of need is not required.~~

~~1) 3) Replacement hard structural stabilization measures shall not encroach waterward of the OHWM or waterward of the existing shoreline stabilization measure unless the primary structure was constructed prior to January 1, 1992 (RCW 90.58.100.6 and WAC 173.26.241 and WAC 173.26.231.3. j) and there is overriding safety or environmental concerns. In such cases, the replacement structure shall abut the existing with a soft structural shoreline stabilization structure. All other replacement structures shall be located at or landward of the existing shoreline stabilization structure measure that is consistent with the standards of this section.~~

~~4) Hard and soft stabilization measures may allow a reasonable amount of gravel, logs and rocks waterward of the OHWM, as approved by the City and federal and state agencies, to provide enhancement of shoreline ecological functions through creation of nearshore shallow-water habitat.~~

~~5.~~ The City may only approve a major repair or replacement of an existing hard structural shoreline stabilization measure with a hard structural shoreline stabilization measure to protect existing primary structures or principle uses, including detached dwelling units, in either of the following circumstances:

a) The primary structure is located 10 feet or less from the OHWM. For the purposes of the provision, the distance shall be measured to the most waterward location of the primary structure; or

b) For a primary structure located more than 10 feet from the OHWM or a use, c~~C~~onclusive evidence is provided to the City that the primary structure or use is in danger from shoreline erosion caused by waves as required in KZC 83.300. 4 below.

5. Submittal Requirements for Major Repairs or Replacements of Hard Stabilization Measures -

The following shall be submitted to the City when the primary structure is located more than 10 feet landward of the OHWM or for a use:

1. W~~If proposing a hard structural shoreline stabilization measure where the primary structure is located 10 feet landward of the OHWM, a~~A~~A~~ritten narrative that provides a demonstration of need shall be submitted. A qualified professional (e.g., shoreline designer or other consultant familiar with lakeshore processes and shore stabilization), but not necessarily a licensed geotechnical engineer shall prepare a written narrative. The demonstration of need shall consist of the following:

a) An assessment of the necessity for ~~continued~~hard structural stabilization, considering site-specific conditions such as water depth, orientation of the shoreline, wave fetch, and location of the nearest structure. The evaluation ~~should~~shall address the feasibility of implementing options presented in Plate XX, given an assessment of the subject property's characteristics.

b) An assessment of erosion potential resulting from the action of waves or other natural processes operating at or waterward of the OHWM in the absence of the hard structural shoreline stabilization.

c) An assessment of the feasibility of using soft structural shoreline stabilization ~~measures~~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.

~~Design recommendations for minimizing impacts of any necessary hard structural shoreline stabilization.~~

2)~~3A demonstration of need shall 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 10 feet or less from the OHWM~~~~d~~D~~D~~esign recommendations for minimizing impacts and ensuring that the replacement or repaired stabilization measure is designed, located, sized, and constructed to assure no net loss of ecological functions.

3).See additional submittal requirements below in subsections 8, 9 and 10 for general submittal requirements, maintenance agreement and general design standards.~~.~~

6. Minor Repairs of Hard Shoreline Stabilization – Minor repairs of hard shoreline stabilization include those maintenance and repair activities not otherwise addressed in the subsection above. The City shall allow~~t~~ minor repair activities to existing hard structural shoreline stabilization measures.

7. Repair or Replacement of Soft Shoreline Stabilization and Submittal Requirements –

1. The City shall allow repair or replacement of soft shoreline stabilization.~~-~~

2. The applicant shall submit to the City design recommendations for minimizing impacts and ensuring that the replacement or repaired stabilization measure is designed, located, sized, and constructed to assure no net loss of ecological functions.

3).See additional submittal requirements below in subsections 8, 9 and 10 for general submittal requirements, maintenance agreement and general design standards.~~.~~

8. General Submittal Requirements for New, Enlarged, Replacement and Major Repair Measures ~~--~~

~~a. The following shall be submitted to the City:~~

~~1) a.~~ Detailed construction plans shall be submitted to the City, including the following:

a. Plan and cross-section views of the existing and proposed shoreline configuration, showing accurate existing and proposed topography and OHWM.

b. 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.

c. For hard structural stabilization measures when shoreline vegetation is required as part of mitigation, a d~~D~~etailed 5-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 5-year maintenance and monitoring plan, consisting of ~~two~~one site visit~~s~~ 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.

d. Fee for City staff or a consultant selected by the City to review the shoreline stabilization plan, the monitoring and maintenance program, the narrative justification of demonstrated need, and drawings. In addition, the Planning Official may require a fee for City staff or a consultant to review the geotechnical report and recommendations. In the case of use of a consultant, the applicant shall sign the City's standard 3-party contract.

9. Maintenance Agreement for ~~Soft~~Hard and Soft Structural ~~Shoreline~~ Stabilization -

~~In lieu of submitting a maintenance security for a soft stabilization measure, the~~ The applicant shall complete and submit a 5-year period maintenance agreement, using the City's standard form, for recording to ensure maintenance of ~~the soft shoreline stabilization measure.~~

~~6 8. General Design Standards - When a hard or soft~~ any structural shoreline stabilization measure. ~~is determined to be necessary, the.~~

10. ~~-~~General Design Standards - The following design standards shall be incorporated into the stabilization design:

a. ~~a.~~ Soft structural shoreline stabilization measures shall be used to the maximum extent feasible, 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 hard shoreline stabilization measures on adjacent properties. The length of hard structural shoreline stabilization connections to adjacent properties shall be minimized to the maximum extent feasible, and extend into the subject property from adjacent properties no more than needed.~~10 fee~~.

b. ~~b.~~ For enlarged, major repair or replacement of hard structural shoreline stabilization measures, excavation and fill activities associated with the structural stabilization shall be landward of the existing OHWM, except when not feasible due to existing site constraints or to mitigate impacts of hard structural stabilization by increasing shallow water habitat with gravel, rocks and logs.

c. ~~c.~~ For short-term construction activities, hard and soft ~~all~~ structural stabilization measures must minimize and mitigate any adverse impacts to ecological functions by 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. ~~d.~~ For long-term impacts, new, enlarged or major repair or replacement of hard structural shoreline stabilization shall incorporate the following measures into the design wherever feasible:

1) Limiting the size of hard structural shoreline stabilization measures to the minimum necessary, including height, depth, and mass.

2) ~~2)~~ Shifting hard stabilization measures 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. ~~e.~~ For new and enlarged hard shoreline stabilization, the following additional measures shall be incorporated into the design:

1) ~~1)~~ To increase shallow-water habitat, install gravel/cobble beach fill waterward of the OHWM, grading slope to a maximum of 1 Vertical (V): 4 Horizontal (H). The material shall be sized and placed to remain stable and accommodate alteration from wind- and boat-driven waves.

2) Plant native riparian vegetation as follows:

a) At least 75 percent of the nearshore riparian area located along the edge of the OHWM shall be planted.

b) The vegetated portion of the nearshore riparian area shall average 10 feet in depth from the OHWM, but may be a minimum of five (5) feet wide to allow for variation in landscape bed shape and plant placement provided that the total square footage of the planted area equals 10 feet along the water's edge.

c) Restoration of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least 3 trees per 100 linear feet of shoreline must be included in the plan.

d) Plant materials must be native and selected from the Kirkland Native Plant List, or other native or shoreline appropriate species approved by the Planning Official or Urban Forester.

e) An alternative planting plan or mitigation measure in lieu of meeting this section ~~may~~shall be allowed if approved by other state and federal agencies. In addition, the City ~~may~~ shall 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 vegetation.

~~For public views, plant materials shall be selected and positioned on the property so as not to obscure view within designated public view corridors from the public right-of-way to the water and the shoreline on the opposite side of the Lake at the time of planting or upon future growth.~~

~~For private views, plant materials may be selected and positioned to maintain private views to the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met.~~

f) ~~f.~~ Standards for vegetation placement are provided in Section 83.400 KZC.

f. ~~The~~ Hard and soft shoreline stabilization measures shall be designed to not significantly interfere with normal surface and/or subsurface drainage into Lake Washington, constitute a hazard to navigation or extend waterward more than the minimum amount necessary to achieve effective stabilization.

g. Hard and soft stabilization measures are allowed to have gravel, logs and rocks waterward of the OHWM, as approved by the City and federal and state agencies, to provide enhancement of shoreline ecological functions through creation of nearshore shallow-water habitat.

h. Stairs or other water access measures may be incorporated into the shoreline stabilization, but shall not extend waterward of the shoreline stabilization measure.

i. ~~h.~~ The shoreline stabilization measures shall be designed to ensure that the measures do not restrict public access or make access unsafe to the shoreline, except where such access is modified under the provisions of KZC Section 83.420 for public access. Access measures shall not extend farther waterward than the face of the shoreline stabilization structure.

~~j. If shoreline stabilization measures any action required by this Chapter, or intended to improve ecological functions result in shifting the OHWM landward of the pre-modification location, structure setbacks, expan the shoreline jurisdiction on any property other than the subject property, the City shall notify the affected property ownermay propose to grant relief from OHWM or lot area for the purposes of calculating lot coverage shall be measured from the pre-modification location. The pre-modification OHWM. The proposal to grant relief must be submitted to the Department of Ecology under the procedures established in 141.70.5. If approved, the shall be recorded in a form approved by the City Attorney and recorded in the King County Department of Elections and Records.Recorder's Office.~~

j. See subsections 11 and 12 below concerning additional design standards for hard structural stabilization and subsection 13 for soft structural stabilization.

~~l. k. If shoreline stabilization measures pursuant to any action required by this Chapter, or intended to improve ecological functions shift the OHWM 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 RecordsRecorder's Office, consenting to the shoreline jurisdiction creation and/or increase on such property."~~

11. Specific Design Standards for New or Enlarged Hard Structural Stabilization –

In addition to the general design standards in subsection 10 above-, the following design standards shall be incorporated:

a. Where hard stabilization measures are not located on adjacent properties, the construction of a hard stabilization measure on the site shall tie in with the existing contours of the adjoining properties, as feasible, such that the proposed stabilization will not cause erosion of the adjoining properties.

b. Where hard stabilization measures are located on adjacent properties, the proposed hard stabilization measure may tie in flush with existing hard stabilization measures on adjoining properties, but by no more than as reasonably required. ~~10 feet into the adjacent property~~. The new hard stabilization measure shall not extend waterward of OHWM, except as necessary to make the connection to the adjoining hard stabilization measures. No net intrusion into the lake and no net creation of upland shall occur with the connection to adjacent stabilization measures.

c. Fill behind hard shoreline stabilization measures 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.

12. Specific Design Standards for Replacement of Hard Structural Stabilization –

Replacement hard structural stabilization measures shall not encroach waterward of the OHWM or waterward of the existing shoreline stabilization measure unless the primary structure was constructed prior to January 1, 1992 (RCW 90.58.100.6 and WAC 173.26.241 and WAC 173.26.231.3. j), and there is overriding safety or environmental concerns if the stabilization measure is moved landward of the OHWM. 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.

13. Specific Design Standards for Soft Structural Stabilization –

~~10~~ In addition to the general design standards in subsection 10, the following design standards shall be incorporated:

a. Provide sufficient protection of adjacent properties by tying in with the existing contours of the adjoining properties to prevent erosion at the property line. Proposals that include necessary use of hard structural stabilization measures only at the property lines to tie in with adjacent properties shall be permitted as soft structural shoreline stabilization measures. The length of hard structural stabilization connections to adjacent properties shall be the minimum needed and extend into the subject property from adjacent properties ~~no more than 10 feet~~as reasonably required.

b. Size and arrange any gravels, cobbles, logs, and boulders so that the improvement remains stable in the long-term and dissipate wave energy, without presenting extended linear faces to oncoming waves.

14. Expansion of SMA Jurisdiction from Shift in OHWM

~~j~~If a shoreline stabilization measure from any action required by this Chapter or intended to improve ecological functions results in shifting the OHWM landward of the pre-modification location -that expands the shoreline jurisdiction onto any property other than the subject property, then as part of the shoreline permit process found in KZC 141:

a.) The City shall notify the affected property owner in writing, and

b.) The City may propose to grant relief for the affected property owners from applicable shoreline regulations resulting in expansion of the shoreline jurisdiction. The proposal to grant relief must be submitted to the Department of Ecology with the shoreline permit under the procedures established in KZC 141.70.5. If approved, notice of the relief, in a form approved by the City Attorney, shall be recorded on the title of the affected property ~~title in a form approved by the City Attorney and recorded~~ in the King County Office.

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 of 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. The benefits to the public provided by the moorage facility or other public water-dependent uses protected by the breakwater outweigh any undesirable effects or adverse impacts on the environment or nearby waterfront properties.
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~~feasible structure to meet the requirements of this Chapter and accomplish its purpose and that the design will result in the minimum ~~possible~~feasible adverse impacts upon the environment, 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~~feasible, to minimize the need for new and maintenance dredging.

2. Dredging waterward of the OHWM may be allowed for only the following purposes:

   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 must 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 OHWM 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 OHWM. The project must be associated with a significant habitat enhancement project.

3. Depositing dredge materials waterward of the OHWM shall only be allowed in approved sites, only when the material meets or exceeds state pollutant standards, and only for the purposes of fish or wildlife habitat improvement or permitted beach enhancement.

4. 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 -

   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 OHWM and have data points at a minimum of 2-foot depth increments.

      2) A habitat survey identifying aquatic vegetation, potential native fish spawning areas, or other physical or biological habitat parameters.

      2) Information on the stability of lakebed adjacent to proposed dredging area.

      3) Information on the composition of the material to be removed.

   c. A description of:

1) Dredging procedure, including length of time it will take to complete dredging, method of dredging, and amount of material removed.

2) Where the materials will be placed to allow for sediment to settle, by what means the materials will be transported away from the dredge site, and specific approved land or open-water disposal site.

3) Plan for anticipated future maintenance dredging and disposal, including frequency and quantity, for at least a 20-year period.

d. Copies of state and federal approvals.

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.

h. Except as is necessary during construction, dirt, rocks and similar materials shall not be stockpiled on the subject property. If stockpiling is necessary during construction, it must be located as far as ~~possible~~feasible from the lake and strictly contained to prevent erosion and runoff.

2. Permitted Activities -

a. Land surface modification is prohibited within the shoreline setback, except for the following:

1) For the purpose of shoreline habitat and natural systems enhancement projects, setting back shoreline stabilization measures or portions of shoreline stabilization measures from the OHWM, or ~~soft shoreline stabilization measures~~soft structural shoreline stabilization measures under a plan approved by the City.

2) As authorized by a valid shoreline permit or approval issued by the City.

3) Associated with the installation of improvements located within the shoreline setback or waterward of the OHWM, as permitted under KZC Section 83.190.2.

4) Removal of prohibited vegetation.

5) As performed in the normal course of maintaining existing vegetation on a lot associated

with existing 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) As necessary to maintain or upgrade the structural safety of ~~an existing legally established or~~a legally established structure.

8) For 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 floodwater-holding capabilities.

2. Fills landward and waterward of the OHWM 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 use or public access use, including maintenance of beaches or

   b. As part of an approved mitigation or restoration project.

4. Any placement of materials landward of the OHWM 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~~OHWM, 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 City's Restoration Plan.

e. Implementation of any project or activity identified in the *Final WRIA 8 Chinook Salmon Conservation Plan and related documents.*

General Regulations

83.360 No Net Loss Standard and Mitigation Sequencing

1. General –

a. If specific standards, such as setbacks, pier dimensions and tree planting requirements, are provided in this Chapter, then the City shall not require additional mitigation sequencing analysis under these provisions.

b. In the following circumstances, the applicant shall provide an analysis of measures taken to mitigate environmental impacts:

a) Where specific regulations for a proposed use or activity are not provided in this Chapter;

b) Where either a Conditional Use or Variance application are proposed;

c) Where the standards contained in this Chapter require an analysis of the feasibility of or need for an action or require analysis to determine whether the design has been minimized in size; and

d) Where the standards provide for alternative compliance or mitigation measures.

c. Under WAC Chapter 173-26, uses and shoreline modifications along Kirkland's shoreline shall be designed, located, sized, constructed and/or maintained to achieve no net loss of shoreline ecological functions. -

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

e. Where evaluating the feasibility of a proposed action, the City may consider whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of the proposed disturbance, including any continued impacts on functions and values over time.

f. Where mitigation is required, the City may consider alternative mitigation measures that may be less costly than those prescribed in this Chapter, provided that the alternatives are as effective in meeting the requirements of no net loss.

1.2. Mitigation Analysis - In order to assure that development activities contribute to meeting the no net loss provisions by avoiding, minimizing, and mitigating for adverse impacts to ecological functions or ecosystem-wide processes, an applicant required to complete a mitigation analysis pursuant to subsection 1 above, shall utilize the following mitigation sequencing guidelines, which appear in order of preference, during the design, construction and operation of the proposal:

a. Avoiding the impact altogether by not taking a certain action or parts of an action;

b. 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;

c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

d. Reducing or eliminating the impact over time by preservation and maintenance operations;

e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and

f. Monitoring the impact and the compensation projects and taking appropriate corrective measures.

3. Failure to demonstrate that the mitigation sequencing standards have been met may result in permit denial. The City may request necessary studies by qualified professionals to determine compliance with this standard and mitigation sequencing.

~~2.In addition, uses shall be located, designed and configured to prevent significant adverse impacts on water quality, fish and wildlife habitat, and the environment and the need for new shoreline stabilization or flood hazard reduction measures.~~

~~5.~~3. ~~Maintenance activities shall be conducted in a manner that minimizes impacts to fish, wildlife, and their associated habitat and utilizes best management practices.~~

83.370 Federal and State Approval

1. All work at or waterward of the OHWM 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.
2. 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 applicable laws and regulations ~~as stipulated by state and federal agencies, local tribes, or others that have jurisdiction~~.
3. If structures are proposed to 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.

83.380 Shoreline Setback Reduction

1. Improvements permitted within the Shoreline Setback - See standards contained in KZC Section 83.190.2.
2. Shoreline Setback Reductions –
   a. In the Residential – L shoreline environment, the shoreline setback may be reduced by 2 feet if subject to the Historic Preservation provisions of KMC 22.28.048, but in no case closer than 25 feet with the exception in the Residential L - shoreline environment south of the Lake Ave West street end where the minimum shoreline setback is 15 feet.
   b. The required shoreline setback may be reduced to a minimum of 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. In the portion of the Residential-L environment located south of the Lake Ave W Street End Park, the required shoreline setback may be reduced to a minimum of 15 feet. The following standards shall apply to any reduced setback:
      1) The minimum setback that may be approved through this reduction provision is 25 feet in width, except that properties in the Residential L – shoreline environment south of the Lake Street Ave street end may reduce to a minimum setback of 15 feet. Any further setback reduction below 25 feet or 15 feet, respectively, in width shall require approval of a shoreline variance application.
      2) The City ~~may~~ shall accept previous actions that meet the provisions established in the setback reduction method chart in subsection d. below as satisfying the requirements of this section, provided that all other provisions are completed, including but not limited to the agreement noted in Section 83.380.2.b.4 ~~subsection 4) below~~ are completed. The reduction allowance for previously completed reduction actions may only be applied once on the subject property.
      3) Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built plan of any completed improvements authorized or required under this subsection.
      4) All property owners who obtain approval for a reduction in the setback must record the final approved setback and corresponding conditions, including

maintenance of the conditions throughout the life of the development, unless otherwise approved by the City, in a form acceptable to the City Attorney, and recorded with the King County ~~Department of Records and Elections~~Recorder's Office. The applicant shall provide land survey information for this purpose in a format approved by the Planning Official.

5) The shoreline setback reduction mechanisms shall not apply within the Natural Environment.

c. The reduction allowance shall be applied to the required shoreline setback. For instance, if a reduction is proposed in the Residential – L environment, where the shoreline setback requirement is 30% of the average parcel depth, the shoreline setback could be reduced to 20% of the average parcel depth, but in no case less than 25 feet, if Reduction Mechanism Item 1 in the table below is used.

d. The chart below describes the setback reduction options:

Shoreline Setback Reduction Options		**Reduction Allowance**	
		Standard Reduction (min. 25' setback)	**Residential-L, south of Lake Ave W Street End Park (min. 15' setback)**
Water Related Conditions or Actions			
1	Presence of non-structural or soft structural~~atural~~ shoreline ~~conditions (e.g., no hard structural shoreline stabilization measure)~~stabilization measures located at, below, or within 5 feet landward of the lake's OHWM along at least 75 percent of the linear lake frontage of the subject property. This can include the removal of an existing hard structural shoreline stabilization measure 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 conjunction with Method #2 below	Reduce required setback by 15 percentage points, or in cases where the required setback is 60' reduce setback by 30 feet	Reduce required setback by 15 feet
2	Presence of non-structural or soft structural shoreline stabilization measures ~~natural shoreline conditions (e.g., no hard structural shoreline stabilization measure)~~ located at, below, or within 5 feet landward of the lake's OHWM along at least 15 linear feet of the lake frontage of the subject property. This can include the removal of an existing hard structural shoreline stabilization measure 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 Method #1 above;	Reduce required setback by 5 percentage points, or in cases where the required setback is 60' reduce setback by 10 feet	Reduce required setback by 5 feet
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	Reduce required setback by 5	Reduce required setback by 5

Shoreline Setback Reduction Options		Reduction Allowance	
		Standard Reduction (min. 25' setback)	**Residential-L, south of Lake Ave W Street End Park (min. 15' setback)**
	provided with a native planted buffer at least 5 feet wide on both side of the stream, and must not encumber adjacent properties with a 5 foot wide buffer without express written permission of the adjacent property owner. A qualified professional must design opened watercourses. The opened watercourse shall be exempt from the buffer provisions of KZC 83.490. The opened watercourse is exempt from the buffer requirements and standards of KZC 83.510.	percentage points, or in cases where the required setback is 60' reduce setback by 4 feet	feet
4	Hard structural shoreline stabilization measure is setback from the OHWM between 2 ft. to 4 ft based on feasibility and existing conditions and/are sloped at a maximum 3 Vertical (V): 1 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, or in cases where the required setback is 60' reduce setback by 4 feet	Reduce required setback by 5 feet
5	Soft structural shoreline stabilization measures are installed waterward of the OHWM. ~~Soft shoreline stabilization measures~~ They may include the use of gravels, cobbles, boulders, and logs, as well as vegetation. The material shall be of a size 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, or in cases where the required setback is 60' reduce setback by 4 feet	Reduce required setback by 2 feet
Upland Related Conditions or Actions			
6	Installation of biofiltration/infiltration mechanisms in lieu of piped discharge to the lake, such as mechanisms that infiltrate or disperse surface water on the surface of the subject property, These mechanisms shall be 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 requirements in the City's current	Reduce required setback by 2 percentage points, or in cases where the required setback is 60' reduce setback by 4	Reduce required setback by 2 feet

Shoreline Setback Reduction Options		Reduction Allowance	
		Standard Reduction (min. 25' setback)	**Residential-L, south of Lake Ave W Street End Park (min. 15' setback)**
	surface water design manual.	feet	
7	Increasing the width of the required landscape strip within the reduced shoreline setback a minimum of 5 additional feet in width.	Reduce required setback by 2 percentage points, or in cases where the required setback is 60' reduce setback by 4 feet	Reduce required setback by 2 feet
6	Installation of pervious material for all pollution generating surfaces such as driveways, parking or private roads that allows water to pass through at rates similar to pre-developed conditions. Excluded from this provision is the private easement roads, such as ~~of~~ 5th Ave West or Lake Ave W in the Residential – L shoreline environment.	Reduce required setback by 2 percentage points, or in cases where the required setback is 60' reduce setback by 4 feet	Reduce required setback by 2 feet
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, or in cases where the required setback is 60' reduce setback by 4 feet	Reduce required setback by 2 feet
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, or in	Reduce required setback by 2 feet

Shoreline Setback Reduction Options		Reduction Allowance	
		Standard Reduction (min. 25' setback)	Residential-L, south of Lake Ave W Street End Park (min. 15' setback)
		cases where the required setback is 60' reduce setback by 4 feet	

83.390 Site and Building Design Standards

1. 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:
   a. Buildings are designed with windows that orient toward the shoreline.
   b. Buildings are designed to incorporate outdoor areas such as decks, patios, or viewing platforms that orient toward the shoreline.
   c. Buildings are designed with entrances along the waterfront façade and with connections between the building and required public pedestrian walkways.
   d. Service areas are located away from the shoreline.
   e. Site planning includes public use areas along waterfront public pedestrian walkways, if required under the provisions established in KZC 83.420, that will encourage pedestrian activity, including but not limited to:
      1) Permanent seating areas;
      2) Vegetation, including trees to provide shade cover; and
      3) Trash receptacles.
2. Exemptions – The following are exempt from the requirements of subsection 1:
   a. Non-water oriented commercial and recreational uses that 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.
3. Buildings shall not incorporate materials that are reflective or mirrored.

83.400 Tree Management and Vegetation in Shoreline Setback

1. 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:

   a. Tree removal when no development activity is proposed or in progress.

1) An owner of a developed a property may remove up to 2 significant trees from their property within a 12 month period subject to the standards contained in Chapter 95 KZC.

2) Replacement Standards in the Shoreline Setback –

a) If a significant tree located within the shoreline setback area is to be removed, is damaged or has fallen, a 3–for-1 replacement is required as mitigation. 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. See alternative mitigation option in subsection 2.d.below that may be proposed.

b) In circumstances where the proposed tree removal includes a tree that was required to be planted under the provisions of this subsection or as part of the required vegetation in the shoreline setback established in subsection 83.400.4 below, the required tree replacement shall be addressed under the provisions of subsection 4 below, which ~~permits~~ requires only a 1:1 replacement.

c) For required replacement trees, a planting plan showing the location, size and species of the new trees is required to be submitted 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 or shoreline appropriate species approved by the Planning Official or Urban Forester.

d) ~~d)~~ An alternative mitigation option may be ~~proposed~~ approved if an applicant can demonstrate that :

i) ~~I~~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, or

~~i)~~ii) The required tree replacement will obstruct existing views to the lake, at the time of planting or upon future growth, which cannot otherwise be mitigated through tree placement or maintenance activities. The applicant shall be responsible for providing sufficient information to the City to determine whether the tree replacement will obstruct existing views to the lake.

The alternate mitigation must be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. This may include, but shall not be limited to, a riparian restoration plan consisting of shrubs, or groundcovers selected from the Kirkland Native Plant List which shall equal at a minimum 80 square feet for each tree to be replanted. The applicant shall submit a planting plan to be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request. If the alternative plan is consistent with the standards provided in this subsection, the Planning Official or Urban Forester shall approve the plan or may impose conditions to the extent necessary to make the plan consistent with the provisions. If the alternative mitigation is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal.

b. Tree removal when development activity is proposed or in progress.

1) Submittal Requirements in the Shoreline Setback –

a) A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of existing structures, driveways, access ways and easements and the proposed improvements.

b) An arborist report stating the size (DBH), species, and assessment of health of all significant trees located within the shoreline setback. This requirement may be

waived by the Planning Official if it is determined that proposed development activity will not potentially impacts significant trees within the shoreline setback.

2) Tree Retention Standards in the Shoreline Setback - 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 consistent with the 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.

3) Replanting Requirements in the Shoreline Setback –

a) If the Planning Official approves removal of a significant tree in the shoreline setback area, then a three (3) for one (1) 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. See alternative mitigation option in subsection 3) c. below that may be proposed.

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 or shoreline appropriate species approved by the Planning Official or Urban Forester.

c) ~~c)~~ An alternative mitigation option may be ~~proposed~~ approved if an applicant can demonstrates that:

i. It~~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., or

~~i.~~ii. The required tree replacement will obstruct existing views to the lake, at the time of planting or upon future growth, which cannot otherwise be mitigated through tree placement or maintenance activities. The applicant shall be responsible for providing sufficient information to the City to determine whether the tree replacement will obstruct existing views to the lake.

The alternate mitigation must be equal or superior to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. This may include, but shall not be limited to, a riparian restoration plan consisting of shrubs, perennials, groundcovers selected from the Kirkland Native Plant List which shall equal at minimum 80 square feet for each tree to be replanted. The applicants shall submit a planting plan to be reviewed by the Planning Official or Urban Forester, who may approve, approve with conditions, or deny the request. If the alternative plan is consistent with the standards provided in this subsection, the Planning Official or Urban Forester shall approve the plan or may impose conditions to the extent necessary to make the plan consistent with the provisions. If the alternative mitigation is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal.

2. 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:

a. In no circumstance shall removal of more than one-third (1/3) of the original crown be permitted;

b. Pruning shall not include topping, stripping of branches or creation of an imbalanced canopy;

~~c.~~Pruning shall retain branches that overhang the water to the maximum extent ~~possible~~feasible~~; and~~

~~d.~~c. ~~Pruning shall not directly impact the nearshore functions and values including fish and wildlife habitat.~~

3. Required Vegetation in the Shoreline – Riparian vegetation contributes to shoreline ecological functions in a number of different ways, including maintaining temperature, removing excessive nutrients and toxic compounds, attenuating wave energy, removing and stabilizing sediment and providing woody debris and other organic matter. In order to minimizing potential impacts to shoreline ecological functions from development activities, the following shoreline vegetation standards are required:

a. For properties that do not comply with the shoreline vegetation standards contained in this subsection, refer to Section 83.550 to determine when compliance is required.

~~a.~~b. Minimum Landscape Standard Compliance –

1.) Location –

a) Water-dependent Uses or Activities - Those portions of water-dependent development that require improvements adjacent to the water's edge, such as fuel 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, swimming beaches or other similar activities shall plant native vegetation on portions of the nearshore riparian area located along the water's edge that are not otherwise being used for the water-dependent activity.

b) All Other Uses - The applicant shall plant native vegetation, as necessary, in at least 75 percent of the nearshore riparian area located along the water's edge.

2) Planting Requirements –

a) For uses other than those list below in subsection 2) b), the vegetated portion of the nearshore riparian area shall average 10 feet in depth from the OHWM, but may be a minimum of 5 feet wide to allow for variation in landscape bed shape and plant placement. Total square feet of landscaped area shall be equal to a continuous 10-foot wide area.

b) For Detached, Attached or Stacked Dwelling Units within the Residential – M/H shoreline environment, the vegetated portion of the nearshore riparian area shall average 15 feet in depth from the OHWM. Total square feet of landscaped area shall be equal to a continuous 15-foot wide area.

c) The public access pathway required under Section 83.420 may extend into the required landscape strip as necessary to meet the public access requirements, provided that the overall width of the landscape strip is maintained.

d) Installation of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least 3 trees per 100 linear feet of shoreline must be included in the plan, with portions of a tree rounded up to the next required tree.

e) Plant materials must be native and selected from the Kirkland Native Plant List, or other native or shoreline appropriate species approved by the Planning Official or Urban Forester.

b. Use of Existing Vegetation - The City ~~may~~ shall accept existing native trees, shrubs and groundcover as meeting the requirements of this subsection, 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 vegetation. The City may require the applicant to plant trees, shrubs, and

groundcover according to the requirements of this subsection to supplement the existing vegetation in order to provide a buffer at least as effective as the required buffer.

c 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 subsection, 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.

d. Vegetation Placement – When required either by this subsection or as a mitigation measure, such as for a new pier or dock or structural shoreline stabilization measure, v~~V~~egetation selection and placement shall comply with the following standards:

1) 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 Lake and the shoreline on the opposite side of the Lake at the time of planting or upon future growth.

2) Vegetation may be selected and positioned to maintain private views to the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met~~.~~, unless alternative compliance is approved.

~~e.~~d. Alternative Compliance - Vegetation required by this subsection shall be installed unless the applicant demonstrates one of the following:

1) The vegetation will not provide shoreline ecological function due to existing conditions, such as the presence of extensive shoreline stabilization measures that extend landward from the OHWM; or

2) It is not feasible to plant all of the required vegetation on the subject property, given the existing tree canopy coverage and location of trees on the property, the location of structures on the property, or minimum spacing requirements for the vegetation to be planted; or

3) The vegetation will substantially interfere with the use and enjoyment of the portion of the property located between the residence and OWHM ~~because the primary structure is located within 15 feet of the OHWM~~;

4) The required vegetation placement will obstruct existing views to the lake, at the time of planting or upon future growth, which cannot otherwise be mitigated through placement or maintenance activities. The applicant shall be responsible for providing sufficient information to the City to determine whether the vegetation placement will obstruct existing views to the lake; and

~~3)~~That alternate measures will be equal or superior to the provisions of this subsection in accomplishing the purpose and intent of maintaining and improving shoreline ecological functions and processes. ~~Examples include, but are not limited to:~~

~~For a proposed alternative to the required vegetation of the in the shoreline setback area~~

~~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.~~

~~For a proposed modification to the tree plantings required as part vegetation in the shoreline setback~~

~~c)~~a) ~~Increasing the width of the required vegetation in the shoreline setback by a minimum of 5 additional feet.~~

Requests to use alternative measures shall be reviewed by the Planning Official who may approve, approve with conditions, or deny the request. Cost of producing and implementing the alternative plan, and the fee to review the plan by City staff or the City's consultant shall be borne by the applicant. If the alternative plan is consistent with the standards provided in this subsection, the Planning Official shall approve the plan or may impose conditions to the extent necessary to make the plan consistent with the provisions. If the alternative mitigation is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal.

4. Responsibility for Regular Maintenance.

   a. The applicant, landowner, or successors in interest shall be responsible for the regular maintenance of vegetation required under this section. Plants that die must be replaced in kind or with similar plants contained on the Native Plant List, or other native or shoreline appropriate species approved by the Planning Official or Urban Forester.

   b. All required vegetation must 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 vegetation that is required by the City.

83.410 View Corridors

1. General - Development within the shoreline areas located west of Lake Washington Boulevard and Lake Street South shall include public view corridors that provide the public with an unobstructed view of the water. The intent of the corridor is to provide an unobstructed view from the adjacent public right-of-way to the Lake and the shoreline on the opposite side of the Lake.

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. A view of the shoreline edge of the subject property shall be provided if existing topography, vegetation, and other factors allow for this view to be retained.

   b. The view corridors approved for properties located in the UM Shoreline Environment established under an approved Master Plan or zoning permit approved under the provisions of Chapter 152 KZC shall continue to comply with those requirements. 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) Piers and docks associated with a marina or moorage facility for a commercial use;

      2) Piers, docks, moorage buoys, boatlifts and canopies associated with Detached, Attached and Stacked Unit uses; and

      3) Tour boat facility, ferry terminal or water taxi, including permanent structures up to 200 square feet in size housing commercial uses ancillary to the facility.

      4) Public Access Pier or Boardwalk

      5) Boat launch

   b. Public Parks

   c. Properties located in the UM Shoreline Environment within the Central Business District zone.

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 properties 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) Locations 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 vegetation that is 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 the Lake and the shoreline on the opposite side of the Lake.
      3) Structures if the slope of the subject property permits full, unobstructed views of the Lake 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) Vegetation, including required vegetation screening around parking and driving areas and land use buffers, provided it is designed and of a size that will not obscure the view from the public right-of-way to the water and the shoreline on the opposite side of the Lake at the time of planting or upon future growth. In the event of a conflict between required site screening and view preservation. View preservation shall take precedents over buffering requirements found in KZC 95.
      6) Open fencing that is designed not to obscure the view from the public right-of-way to the Lake and the shoreline on the opposite side of the Lake.
6. Dedication -The applicant shall ~~grant an easement~~execute a covenant or similar legal agreement, in a form acceptable to the City Attorney, and record~~ed~~ the agreement with the King County ~~Department of Records and Elections~~Recorder's Office, 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.

83.420 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 shoreline public pedestrian walkway and the public right-of-way serve to link the walkway with the larger city-wide 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 shoreline public pedestrian walkway 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 OHWM so that the walkway may meander and not be a straight line. In cases where the walkway on the adjoining property has been installed closer to the shoreline than allowed under this provision, the walkway extend within 5 feet of the OHWM in order to connect to the existing walkway.

c. Locating the walkways adjacent to other public areas including street-ends, waterways, parks, and other public access and connecting trails, shall maximize the public nature of the access.

d. The walkways shall be situated so as to minimize significant grade changes and the need for stairways.

e. 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.

f. The walkways shall be located so as to avoid undue interference with the use of the site by water-dependent businesses.

g. 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 6 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 – Unless otherwise required by the City, all required pedestrian walkways shall be open to the public between the hours of 10 am to dusk from March 21st to September 21st, and the remainder of the year 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:

      a. The gate shall remain in an open position during hours of permitted public access; and

      b. 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.

      a. 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.

      b. 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

   a. The requirement for the dedication and improvement of public access does not apply to:

      a. Development, other than public entities such as government facilities and public parks, located within the Residential - L shoreline environment.

      b. Development located within the Natural shoreline environment.

      c. Detached Dwelling unit on one lot and normal appurtenances associated with this use that is not part of a land division. For development involving land division, public pedestrian access is required, unless otherwise excepted under this subsection.

6. Modifications

   a. The Planning Official may require or grant a modification to the nature or extent of any required improvement for any of the following reasons:

      1) If the presence of critical areas, such as wetlands, streams, or geologically hazardous areas, preclude the construction of the improvements as required.

      2) To avoid interference with the operations of water-dependant uses, such as marinas.

      3) If the property contains unusual site constraints, such as size, configuration, topography, or location.

      4) If the access would create unavoidable health or safety hazards to the public.

b. 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.

c. Access from the right-of-way to the shoreline public access walkway may be waived by the Planning Official if all of following criteria are met:

1) If public access along the shoreline of the subject property can be reached from an adjacent property,

2) If the adjacent property providing access to the shoreline 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 or less; and

3) 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.

83.430 In-Water Construction

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. See KZC 83.370 for federal and state approval and timing restrictions.

d. Removal of existing structures shall be accomplished so the structure and associated material does not re-enter the lake.

e. Waste material and unauthorized fill, such as construction debris, silt or excess dirt resulting from in-water structure installation, concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, paper and any other similar material upland of or below the OHWM shall be removed.

f. Measurements shall be taken in advance and during construction to ensure that no petroleum products, hydraulic fluid, 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.

g. In-water work shall be conducted in a manner that causes little or no siltation to adjacent areas. A sediment control curtain shall be used in those instances where siltation is expected. The curtain shall be maintained in a functional manner that contains suspended sediments during project installation.

h. Any trenches, depressions, or holes created below the OHWM shall be backfilled prior to inundation by high water or wave action.

i. 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.

j. 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.

k. If at any time, as a result of in-water work, water quality problems develop, immediate notification shall be made to the Washington Department of Ecology.

83.440 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 commercial parking uses.

   b. Parking as a primary use on a subject property is prohibited.

2. Number of Parking Spaces -

   Uses must provide sufficient off-street parking spaces. The required number of parking stalls established in KZC Chapter 105, KZC 50.60 and with the applicable parking standards for each use shall be met.

3. Parking Location -

   a. Intent – To reduce the negative impacts of parking and circulation facilities on 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 83.400. 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 vegetation.

            iii) The structure is designed to not impact public access and views to the Lake 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 vegetation and/or building surface treatment to provide an appearance comparable to the remainder 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. Pedestrian Connections

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 composed of a different material than the parking lot material.

2) Pedestrian connections must be at least 5 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 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 visible from a required view corridor, or is facing a public pedestrian walkway, public use area, or public park must incorporate vegetation and/or building surface treatment to mitigate the visual impacts of the structured parking.

83.450 Screening of Storage and Service Areas, Mechanical Equipment and Garage Receptacles

1. Outdoor Use, Activity and Storage. Outdoor Use, Activity and Storage areas must comply with the following:

a. Comply with the shoreline setback established for the use with which they are associated.

b. Be located to minimize visibility from any street, Lake Washington, required public pedestrian walkway, public use area or public park.

c. 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.

d. 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.

2. Mechanical and similar equipment or appurtenances.

a. At-grade mechanical and similar equipment or appurtenances are not permitted within the shoreline setback.

b. Rooftop appurtenances and at or below grade appurtenances shall be screened with vegetation 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.

3. Garbage and trash receptacles. Garbage and recycling receptacles must comply with the following:

a. Comply with the shoreline setback established for the use with which they are associated.

b. Be located to minimize visibility from any street, Lake Washington, required public pedestrian walkway, public use area or public parks.

c. 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.

d. 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 subsection.

83.460 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. Signs shall comply with the shoreline setback standards contained in KZC 83.180.

   c. 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:

         a) 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 area permitted in KZC Chapter 100.

         b) 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.

         c) Signs shall be affixed to a pier or wall-mounted. The maximum permitted height of a freestanding sign is 5 feet above the surface of the pier. A wall-mounted sign shall not project above the roofline of the building to which it is attached.

      2) Boat traffic signs, directional signs, and signs displaying a public service message.

      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.

83.470 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 submittal 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 83.460.

   b. The following development activities are exempt from the submittal 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 and docks;
3) Public Access Pier or Boardwalk; and
4) Moorage buoy.

3. Submittal Requirements - All development proposing exterior lighting 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 illuminate 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, docks or other 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-candle at the water surface of Lake Washington, as measured waterward of the OHWM.

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) Illumination of a building façade to enhance architectural features is not permitted.

2) Where feasible, 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.

83.480 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 measures; 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 shall apply 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.

Low Impact Development techniques shall be considered and implemented to the greatest extent practicable, consistent with the City's adopted surface water design manual.

c. New outfalls or discharge pipes to Lake Washington shall be avoided, where ~~possible~~feasible. 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~~OHWM.

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 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 Public Works Department 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 federal and state agencies.

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 Planning Department prior to the application.

83.490 Critical Areas – General Standards

1. The provisions of this Chapter do not extend beyond the shoreline jurisdiction limits specified in this Chapter and the Act. For regulations addressing critical area buffers that are outside of the shoreline jurisdiction, see KZC Chapter 85 and 90.

2. <u>Avoiding impacts to critical areas.</u>

a. An applicant for a land surface modification or development permit 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 subsection.

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 83.500 and 510.

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 will utilize mitigation sequencing to avoid, minimize, and mitigate impacts to critical areas and associated buffers. The applicant shall seek to avoid, minimize and mitigate overall impacts based on the functions and values of all 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 shall 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 subsection as a part of the critical areas review conducted pursuant to KZC 500 and 510.

3. 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 meets the criteria of a nuisance or hazard in a critical area in or its buffer as described below, then a “snag” or wildlife tree shall be created. 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 that 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.

b) Nuisance Tree Criteria. A nuisance tree must meet the following criteria:

i) The 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) The 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:

- Pruning of the crown or roots of the tree and/or small modifications to the site improvements, including but not limited to a driveway, parking lot, patio or sidewalk, to alleviate the problem.
- 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 6 feet in height in close proximity to where the removed tree was located. The Planning Official shall approve the selection of native species and timing of installation.

4. 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 or otherwise approved by the City's Urban Forester. Seed source must be as local as ~~possible~~feasible, 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 their entry into waterways and wetlands and minimize 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.

83.500 Wetlands

1. Applicability – The following provisions shall apply to wetlands and wetland buffers located within the shoreline jurisdiction, in place 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 that 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 at that time.

   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 (b) 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 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 to determine the appropriate buffer width. Ecology's rating system and the corresponding buffers only apply to those wetlands and buffers 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 consultant. The Planning Official's decision under this section shall be used for review of any development permit or 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 83.500.4 through 83.500.10. See also KZC 83.490, Trees in Critical Areas or Critical Area Buffers; and KZC 83.490, 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*

Modification to Buffer for Divided Wetland Buffer - 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 minor improvements within this setback that 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 Discharge– 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:

1) Surface discharge of storm water through the buffer would clearly pose a threat to slope stability, and

2) The storm water outfall will not:

a) Adversely affect water quality;

b) Adversely affect fish, wildlife, or their habitat;

c) Adversely affect drainage or storm water detention capabilities;

d) Lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

e) 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 outfalls shall minimize potential impacts to the wetland or wetland buffer by meeting the following design standards:

1) Catch basins must be installed as far as feasible from the buffer boundary.

2) 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 –Water quality facilities, as determined by the City, may be located within the required wetland buffers of KZC 83.500.4. 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 feasible 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) 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 feasible alternative proposal that results in less impact to the buffer.

f. Utilities and Rights-of-Way –The following work may only be allowed in critical areas and their buffers subject to City review after appropriate mitigation sequencing per KZC 83.490.2 has been considered and implemented, provided that activities will not increase the impervious area or reduce flood storage capacity:

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 shall 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.

g. Minor Improvements – Minor improvements may be located within the sensitive area buffers specified in subsection (a) of this section. These minor improvements shall only be located within the outer one-half (1/2) 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 that 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 with silt screen fabric, as approved by the Planning Official and consistent with City standards, along the upland

boundary of the entire wetland buffer. 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 -

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 follows .

Development Proposal	**Permit Process**
Wetland Modifications, or Wetland Buffer Modifications affecting greater than 25% of the standard buffer	Shoreline Variance pursuant to Process IIA, described in Chapter 141
Wetland Buffer Modifications affecting 25% or less of the standard buffer or Reasonable Use Exceptions	Underlying development permit or development activity
Wetland Restoration Plans	Underlying development permit or development activity

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 consultant. 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 83.500 3) for a wetland;

2) A description of the area of the site that is within the sensitive area or within the setbacks or buffers required by this Chapter;

3) An analysis of the impact that the amount of development proposed would have on the sensitive area and the sensitive area buffer;

4) An analysis of the mitigation sequencing as outlined in KZC 83.490.2;

5) 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.

6) Sensitive site design and construction staging of the proposal so that the development away from the sensitive area and/or sensitive area buffer and will minimizes net loss of sensitive area and/or sensitive area buffer functions to the greatest extent ~~possible~~feasible;

7) 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;

8) Information specified in KZC 83.500 8);

9) An evaluation of the project's consistency with the shoreline variance criteria contained in WAC 173-27-170; and

10) 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 83.490.2;

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 feasible alternative development proposal that results in less impact to the wetland and its buffer.

8. Compensatory Mitigation –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[34]	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
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

a. <u>On Site versus Off-Site Mitigation</u>

On-site mitigation is preferable to off-site mitigation. Given on-site constraints, 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

[34] 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

County ~~Department of Elections and Records~~Recorder's Office, 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.

b. Mitigation Plan and Monitoring and Maintenance Program

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 83.490.2.

b. Approved departures from the standard buffer requirements of KZC 83.500.4 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 83.500.4(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.

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 83.500.4. Buffers may not be reduced at any point by more than twenty-five (25%) percent of the standards specified in KZC 83.500.4, unless approved through a shoreline variance. 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 83.500.8.

      Buffers may not be reduced at any point by more than 25% of the standards in KZC 83.500.3(a). Buffer reductions of more than 25% approved through a shoreline variance will be assumed to have direct wetland impacts that must be compensated for as described above under KZC 83.500.8.

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 83.490.2.

   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 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 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 9 d)(2) of this section.

10. Reasonable Use Exception –

An applicant for a detached dwelling unit ~~in the Natural shoreline environment~~ who is unable to comply with the specific standards of this section may seek approval pursuant to the following standards and procedures:

a. 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 jurisdiction 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.

b. Location Standards – This provision shall be limited to the following geographic areas within the City's shoreline jurisdiction:

i. Properties encumbered by wetlands or associated buffers in the Yarrow Bay Wetland complex.

ii. Properties located along Rose Point Lane that are encumbered by wetlands or wetland buffers in the Juanita Bay wetland complex.

~~b.~~c. Submittal Requirements – As part of the reasonable use request, 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 83.500 3) for a wetland;

2) An analysis of whether any other reasonable use with less impact on the sensitive area and sensitive area buffer is ~~possible~~feasible;

3) Sensitive site design and construction staging of the proposal so that the development will have the least feasible 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 proposed development would have on the sensitive area and the sensitive area buffer;

7) How the proposal minimizes net loss of sensitive area and/or sensitive area buffer functions to the greatest extent ~~possible~~feasible;

8) Whether the improvement is located away from the sensitive area and the sensitive area buffer to the greatest extent ~~possible~~feasible;

9) Information specified in KZC 83.500.8 for Compensatory Mitigation;

10) Such other information or studies as the Planning Official may reasonably require.

~~c.~~d. Decisional Criteria – The City shall grant approval of a reasonable use exception only if all of the following criteria are met:

1) 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 shoreline environment shall be one single-family dwelling;

2) 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;

3) 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 vegetation, shall not exceed 3,000 square feet. The amount of allowable disturbance shall be the minimum feasible with the least impact on the sensitive area and the sensitive area buffer, given the characteristics and context of the subject property, sensitive area, and buffer;

4) The applicant shall pay for a qualified professional to assist the City's determination of the appropriate limit for disturbance;

5) The proposal is compatible in 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;

6) The proposal maximizes the amount of existing tree canopy that is retained;

7) The proposal utilizes to the maximum extent ~~possible~~feasible innovative construction, design, and development techniques, including pervious surfaces, which minimize to the greatest extent ~~possible~~feasible net loss of sensitive area functions and values;

8) The proposed development does not pose an unacceptable threat to the public health, safety, or welfare on or off the property;

9) The proposal meets the mitigation, maintenance, and monitoring requirements of this Chapter;

10) The inability to derive reasonable use is not the result of actions by the applicant after the effective date of the ordinance of this Chapter or its predecessor; and

11) 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.

~~d.~~e. Modifications and Conditions – The City may approve a reduction in required yards or buffer setbacks and may allow the maximum height of structures to be increased up to 5 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 an exception.

11. 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 83.490.3, Trees in Critical Areas or Critical Area Buffers; and KZC 83.490.4, 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 the City requires wetland restoration, the requirements of KZC 83.500.8, Compensatory Mitigation, shall apply.

12. 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.

83.510 Streams

1. Applicability – The following provisions shall apply to streams and stream buffers located within the shoreline jurisdiction, in place 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 that 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 shall occur and no improvements shall be located in a stream or its buffer except as provided in KZC 83.510.3 through 83.510.11.

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 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. Stream Buffers and Setbacks

   a. Stream Buffers – No land surface modification shall occur and no improvement shall be located in a stream or its buffer, except as provided in this section. See also KZC 83.490(3), Trees in Critical Areas or Critical Area Buffers; and KZC 83.490(4), 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 OHWM 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 that 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 stream from the proposed development; and

2) Provides insignificant biological, geological or hydrological buffer functions relating to the portion of the buffer adjacent to the stream.

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 that 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 Discharge – 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 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 stream or stream buffer by meeting the following design standards:

1) Catch basins must be installed as far as feasible from the buffer boundary.

2) 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 –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) The 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 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 surface 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 83.490.2 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 shall 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 83.510.4. 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 that 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 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 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 -

   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 follows .

Development Proposal	Permit Process
Steam Relocations or Modifications, or Stream Buffer Modifications affecting more than one-third (1/3) of the standard buffer	Shoreline Variance pursuant to Process IIA, described in Chapter 141
Stream Buffer Modifications affecting less than one-third (1/3) of the standard buffer or Reasonable Use Exceptions	Underlying development permit or development activity
Bulkheads in Stream, Stream Crossings or Stream Rehabilitation	Underlying development permit or development activity

7. Stream 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 83.490.2.

   b. Approved departures from the standard buffer requirements of KZC 83.510.4(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.

c. 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 83.510.4(a). Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.510.4(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 83.500.8.

Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.510.4(a).

d. 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 83.490.2.

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 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 10 criteria listed in this subsection above.

8. Reasonable Use Exception –

An applicant for a detached dwelling unit ~~in the Natural shoreline environment~~ who is unable to comply with the specific standards of this section may seek approval pursuant to the following standards and procedures:

a. 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 jurisdiction 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 stream, either in stream buffer or as upland area.

b. Location Standards – This provision shall be limited to properties encumbered by wetlands or associated buffers in the Yarrow Bay Wetland complex.

~~b.~~c. Submittal Requirements – As part of the reasonable use request, 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 83.510 3) for a stream based on the definitions contained in this Chapter for a stream;

2) An analysis of whether any other reasonable use with less impact on the sensitive area and sensitive area buffer is ~~possible~~feasible;

3) Sensitive site design and construction staging of the proposal so that the development will have the least feasible 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 proposed development would have on the sensitive area and the sensitive area buffer;

7) How the proposal minimizes net loss of sensitive area and/or sensitive area buffer functions to the greatest extent ~~possible~~feasible;

8) Whether the improvement is located away from the sensitive area and the sensitive area buffer to the greatest extent ~~possible~~feasible;

9) Information specified in KZC 83.500.8 for Compensatory Mitigation;

10) Such other information or studies as the Planning Official may reasonably require.

~~c.~~d. Decisional Criteria – The City shall grant approval of a reasonable use exception only if all of the following criteria are met:

1) 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 shoreline environment shall be one single-family dwelling;

2) 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;

3) 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 vegetation, shall not exceed 3,000 square feet. The amount of allowable disturbance shall be the minimum feasible with the least impact on the sensitive area and the sensitive area buffer, given the characteristics and context of the subject property, sensitive area, and buffer;

4) The applicant shall pay for a qualified professional to assist the City's determination of the appropriate limit for disturbance;

5) The proposal is compatible in 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;

6) The proposal maximizes the amount of existing tree canopy that is retained;

7) The proposal utilizes to the maximum extent ~~possible~~feasible innovative construction, design, and development techniques, including pervious surfaces, which minimize to the greatest extent ~~possible~~feasible net loss of sensitive area functions and values;

8) The proposed development does not pose an unacceptable threat to the public health, safety, or welfare on or off the property;

9) The proposal meets the mitigation, maintenance, and monitoring requirements of this Chapter;

10) The inability to derive reasonable use is not the result of actions by the applicant after the effective date of the ordinance of this Chapter or its predecessor; and

11) 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.

~~d.~~e. Modifications and Conditions – The City may approve a reduction in required yards or buffer setbacks and may allow the maximum height of structures to be increased up to 5 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 an exception.

9. 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 shall not be considered.

A proposal to relocate or modify a Class A stream may only be approved 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~~Recorder's Office, consenting to the sensitive area and/or buffer creation or increase on such property.

Prior to the City's decision to authorize 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 83.500.8 for wetlands.

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.

10. ~~Bulkheads in Streams~~Streambank Protection ~~-~~ –

a. General –

i. Streambank protection measures shall be selected to address site- and reach-based conditions and to avoid habitat impacts.

ii. The selection of the streambank protection technique shall be based upon an evaluation of site conditions, reach conditions and habitat impacts.

iii. Nonstructural or soft structural streambank protection measures shall be implemented unless demonstrated to not be feasible.

b. Submittal Requirements for Streambank Protection Measures – The following shall be submitted to the City:

i. An assessment prepared by a qualified professional containing the following:

1. An evaluation of the specific mechanism(s) of streambank failure as well as the site- and reach-based causes of erosion.

2. An evaluation of the considerations used in identifying the preferred streambank solution technique. The evaluation shall address the provisions established in the Washington Department of Fish and Wildlife's *Integrated Streambank Protection Guidelines* (2003, or as revised).

c. Bulkheads or other erosion control practices using hardened structures that armor and stabilize the streambank from further erosion are not permitted along a stream, except as provided in this subsection. The City shall allow a bulkhead to be constructed only if:

~~a.~~i. It is not located within a wetland or between a wetland and a stream;

~~b.~~ii. It is needed to prevent significant erosion;

~~c.~~iii. The use of vegetation and/or other biological materials would not sufficiently stabilize the stream bank to prevent significant erosion;

~~d.~~iv. 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) 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) The installation, existence nor operation of the bulkhead will be detrimental to any other property or the City as a whole.

~~e.~~v. The Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project.

~~f.~~d. The ~~bulkhead~~ streambank protection shall be designed consistent with Washington Department of Fish and Wildlife's *Integrated Streambank Protection Guidelines* (2003, or as revised). The ~~bulkhead~~ stabilization measure 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.~~11. 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) 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) The installation, existence nor operation of the stream crossing will be detrimental to any other property or to the City as a whole.

d. 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 maintenance agreement under KZC 90.145 for continued maintenance of the stream crossing.

e. 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 criteria in this subsection must be designed consistent with Washington Department of Fish and Wildlife's *Design of Road Culverts for Fish Passage* (2003, or as revised).

f. 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.

12. 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 83.490, Trees in Critical Areas or Critical Area Buffers; and KZC 83.490, 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 the City requires stream rehabilitation, the mitigation plan and monitoring requirements of KZC 83.500.8 shall apply.

83.520 Geologically Hazardous Areas

1. The City of Kirkland Geologically Hazardous Area Regulations in Chapter 85 KZC (O-3719, dated December 1999 with subsequent amendments) is herein incorporated into this Chapter.

2. In addition to the required information contained in KZC 85.15, any required geotechnical report shall also contain any additional information specified under the definition of Geotechnical Report contained in KZC Section 83.80.

83.530 Flood Hazard Reduction

1. The City of Kirkland Flood Damage Regulations in Chapter 21.56 KMC (O-3946, dated June 1, 2004 with subsequent amendments) is herein incorporated into this Chapter.

83.540 Archaeological and Historic Resources

1. General - Uses, developments and activities on sites of historic or archeological significance or sites containing items 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 shall 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~~feasible 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 27.44 (Indian Graves and Records) and RCW 27.53 (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 that are registered on the State or National Historic Register are subject to review under the National and State Registers' review process.

83.550 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, altered, remodeled, repaired and continued; provided that nonconforming structures shall not be enlarged, intensified, increased or altered in any way ~~which~~ that increases ~~its nonconformity~~the extent of the 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, 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, earthquake 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 Chapter;~~ provided that, the following are met:

   a. The permit process is commenced within eighteen~~twelve~~ (18~~2~~) 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 same place where it was, or alternatively if moved, then 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 83.550.4 above 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 that is moved any distance must be brought into conformance.

      2) Any structural alteration of a roof or exterior wall that does not comply with height, shoreline setback, or view corridor standards shall be required to be brought into conformance for the nonconforming height, setback or view corridor, except as provided

otherwise in this Chapter. Excepted from this subsection 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, wetland or stream buffer.

4) If existing accessory structures are located within the shoreline setback, these nonconforming structures must be brought into conformance if the applicant is making an alteration to the primary structure, the cost of which exceeds 50 percent of the replacement cost of the structure.

5) Non-conforming structures that are expanded or enlarged within the shoreline setback must obtain a shoreline variance; provided that, a non-conforming detached dwelling unit may be ~~expanded~~ enlarged without a shoreline variance where the following provisions apply:

   a) The non-conforming structure must have been constructed prior to December 1, 2006, the date of the City's *Final Shoreline Analysis Report.*

   b) Before implementing this provision, the applicant shall determine whether the provisions of Section 83.380 would allow for a reduced setback, based upon existing conditions on the subject property.

   c) The structure must be located landward of the OHWM.

   d) Any ~~The~~ enlargement ~~or expansion~~ of the building footprint within the shoreline setback shall not exceed 10 percent of the gross floor area of the existing dwelling unit prior to the expansion. Other enlargements, such as upper floor additions, may be permitted if the addition is consistent with other provisions contained in this subsection.

   e) The enlargement~~, expansion or addition~~ shall not extend further waterward than the existing primary residential structure. For purposes of this subsection, the improvements allowed within the shoreline setback as established in Section 83.180, such as bay windows, chimneys, greenhouse windows, eaves, cornices, awnings and canopies shall not be used in determining the most waterward location of the building (see Plate XX).

   f) The applicant must restore a portion of the shoreline setback area to offset the impact, such that the shoreline setback area will function at an equivalent or 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/or a consultant who may approve, approve with conditions, or deny the request. If the proposal is consistent with the standards provided in this subsection, the Planning Official shall approve the plan or may impose conditions to the extent necessary to make the plan consistent with the provisions. If the proposal is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal. The cost of producing and implementing the restoration plan and the review by City staff and/or a consultant 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 a 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 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 OHWM and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography and beach/substrate composition.

iv) Other shoreline restoration projects that are demonstrated to result in an improvement to existing shoreline ecological functions and processes.

~~v)~~g) The applicant must comply with the best management practices contained in KZC Section 83.480 addressing the use of fertilizer, herbicides and pesticides as needed to protect lake water quality.

~~g)~~h) The applicant shall use "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 the lake, 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.

~~h)~~i) The remodel or expansion will not cause adverse impacts to shoreline ecological functions and/or processes as described on KZC 83.360.

~~i)~~j) The provision contained in this subsection 83.550.5.b.5~~is encroach provision~~ shall only be used once within any 5-year period.

6) 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 required shoreline setback and upland of required wetland or stream buffers, 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 OHWM.

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~~size of the building footprint shall not be increased and the reconstructed structure shall not extend further waterward than the existing primary residential structure. For purposes of this subsection, the improvements allowed within the shoreline setback as established in Section 83.180, such as bay windows, chimneys, greenhouse windows, eaves, cornices, awnings and canopies shall not be used in determining the most waterward location of the building (see Plate XX)..

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 the critical areas.

e) The structure must comply with any requirements of this Chapter, zoning, building, or fire codes in effect when the structure is built, other than allowed in the subsection.

7) 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, 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 OHWM.

b) The size of the building footprint shall not be increased and the reconstructed structure shall not extend further waterward than the existing primary residential structure. For purposes of this subsection, the improvements allowed within the shoreline setback as established in Section 83.180, such as bay windows, chimneys, greenhouse windows, eaves, cornices, awnings and canopies shall not be used in determining the most waterward location of the building (see Plate XX)..~~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 ~~all other requirements of this Chapter, zoning, building, or fire codes in effect when the structure is built~~any requirements of this Chapter, zoning, building, or fire codes in effect when the structure is built, other than allowed in this subsection.

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 an alteration that increases the extent of the non-conformity, such as ~~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) The proposed use will be consistent with the policies and provisions of the Act and this Chapter and is compatible with the uses in the area as the preexisting use;

ii) The use or activity is not enlarged, intensified, increased or altered in a manner that increases the extent of the non-conformity;

iii) 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;

iv) The change in use will not create adverse impacts to shoreline ecological functions and/or processes as described in KZC 83.360; and

v) Uses that are specifically prohibited or which would thwart the intent of the Act or this Chapter shall not be authorized.

d. Non-conforming wetland or stream buffer –

1) If existing structures or other improvements are located within the wetland, stream or associated buffers, these structures and improvements must be brought into conformance if the applicant is making an alteration, change or any other work on the subject property in a consecutive 12-month period and the cost of the alteration, change

or work exceeds 50 percent of the replacement cost of all existing structure and improvements on the subject property.

2) If the cost threshold of subsection d above is not exceeded, the alterations or changes may occur provided that the alterations or changes comply with this code and no exterior alterations or changes are made to the nonconforming portion of the structure or improvement, unless otherwise authorized by this Chapter.

e. Non-conforming lot size - An undeveloped lot, tract, parcel, site or division which 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 this Chapter and the Act.

f. Nonconforming public pedestrian walkway -

1) If a previously installed pubic shoreline access trail is subsequently found to have not been installed to the property line, the trail shall be extended to the property line consistent with conditions established in the original permit.

2) If a previously installed shoreline access trail was subsequently found to have vegetation, fencing, other improvements or accessory structures installed that block connection to an adjacent shoreline access trail, the blockage shall be removed.

3) Nonconforming shoreline access trails that were legally created shall not be required to comply with the dimensional standards or setback standards of this Chapter.

4) The shoreline public access walkway 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 all primary habitable structure(s) in shoreline jurisdiction, the cost of which exceeds 50 percent of the replacement cost of all structures and improvements on the subject property.

g. Nonconforming Shoreline Setback Vegetation- The vegetation requirements of this Chapter must conform ~~with~~ 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 all structures on the subject property.

h. Nonconforming Lighting - Exterior lighting must be brought into compliance with the requirements of this Chapter under the following circumstances:

1) The shielding requirements of KZC 83.470 shall be met when any nonconforming light fixture is replaced or moved.

2) All other requirements of KZC 83.470 shall be met when there is an increase in gross floor area of more than 50 percent of the primary structures on the subject property.

i. Prior approval of Shoreline Variance - A structure for which a shoreline 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.

j. Prior approval of Shoreline Conditional Use - A use which is listed in this Chapter as a conditional use, but existed prior to adoption of this Chapter or any relevant amendment and for which a conditional use permit has not been obtained shall be considered a nonconforming use.

k. 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 Chapter establishes more stringent or different standards or requirements for the nonconforming aspect of the new use than this code establishes for the former use.

c) Replacement costs shall not include costs relating to non-structural interior elements, such as but not limited to appliances, heating and cooling systems, electrical systems, and interior finishes.

83.560 Emergency Actions

1. When Allowed –

a. Emergency actions are those that pose an unanticipated and imminent threat to public health, safety, or the environment and which require immediate action or within a time too short to allow full compliance with the provisions of this Chapter. The Planning Official shall designate when such an action constitutes an emergency.

2. Standards –

a. Emergency actions shall meet the following standards:

1) Use reasonable methods to address the emergency;

2) Be designed to have the least possible impacts on shoreline ecological functions and processes; and

3) Be designed to comply with the provisions of this Chapter, to the extent feasible.

b. Notice –

1) The party undertaking the emergency action shall notify the Planning Department of the existence of the emergency and emergency action(s) within one (1) working day following commencement of the emergency action.

2) Within seven days following completion of emergency activity, the party shall provide the Planning Department a written description of the work undertaken, site plan, description of pre-emergency conditions and other information requested by the City to determine whether the action was permitted within the scope of an emergency action.

c. Decision –

1) The Planning Official shall evaluate the action for consistency with the provisions contained in WAC 173-37-040(2)(d).

2) The Planning Official shall determine whether the action taken, or any part of the action taken, was within the scope of the emergency actions allowed in this section. The Planning Official may require mitigation for impacts to shoreline ecological functions.

3) If the Planning Official determines that the emergency action was not warranted he or she may require that the party obtain a permit and/or require remediation of or mitigation for the actions taken,

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~~ Review 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 141.4~~5~~0.

~~1.~~2. 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.

3. 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.

~~2.~~4.

141.40 Exemption from permit requirements.

1. General - Proposals identified under WAC 173-27-040 are exempt from obtaining a Shoreline Substantial Development permit; however, a Shoreline Variance or Shoreline Conditional Use may still be required. Proposals that are not permitted under the provisions of Chapter 83 shall not be allowed under an exemption. 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. A proposal that does not qualify as an exemption may still apply for a Shoreline Substantial Development permit.
2. Authority - The Planning Official shall review the proposed development activity for compliance with the shoreline regulations contained in Chapter 83 KZC. All proposed uses and development occurring within shoreline jurisdiction must conform to Chapter 90.58 RCW, the Shoreline Management Act, and the provisions of Chapter 83 KZC, whet~~t~~her or not a permit is required.
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 applicant shall identify whether the proposal requires an Army Corps of Engineers Section 10 or Section 404 Approval. 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~~ Decision - 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. A copy of the City's Letter of Exemption shall be filed with the Department of Ecology.
5. Lapse of Approval – The lapse of approval for the shoreline exemption approval shall be 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)~~

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 the termination of all review proceedings initiated within 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~~ Permit are subject to the time limitations of WAC 173-27-~~1~~090.

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~~criteria that must be met for a conditional use permit ~~may~~ to 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 by the State Department of Ecology 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 the termination of 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 Permit are subject to the time limitations under WAC 173-27-~~190~~090.

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~~Shoreline Variance 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~~Variance Permits must also contain the information required under WAC 173-27-110.
2) The minimum notice of application comment period for Shoreline ~~Conditional Use~~Variance 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~~criteria that must be met for a variance ~~conditional use~~ permit ~~may~~ to 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 the termination of 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~~Variance Permit are subject to the time limitations under WAC 173-27-~~190~~090.

4. **Request for Relief from Standards**

a. General - When shoreline stabilization measures intended to improve ecological functions result in shifting the OHWM landward of the pre-modification location, the City may propose to grant relief from additional or more restrictive standards and use regulations resulting from the shift in ordinary high water mark, such as but not limited to an increase in shoreline jurisdiction, shoreline setbacks, or lot coverage.

b. Burden of Proof – Relief may be granted when:
   1) The proposed relief is the minimum necessary to relieve the hardship;
   2) The restoration project will result in a net environmental benefit; and
   3) The proposed relief is consistent with with the objectives of the City's Restoration Plan and SMP.

c. Decision - Approval by Department of Ecology. Once the city has approved a permit it will be forwarded to the State Department of Ecology for its review and approval/disapproval. The application review must occur during the Department of Ecology's normal review of a shoreline substantial development permit, conditional use permit, or variance. If a permit is not required for the restoration project, the City shall submit a separate application and necessary supporting information to the Department of Ecology.

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.

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CHAPTER 30 – WATERFRONT DISTRICT (WD) ZONES

30.05 User Guide. The charts in KZC 30.15 contain the basic zoning regulations that apply in the WD I zones of the City. Use these charts by reading down the left hand column entitled Use. Once you locate the use in which you are interested, read across to find the regulations that apply to that use.

Section 30.10

Zone WD I

Section 30.10 – GENERAL REGULATIONS
The following regulations apply to all uses in this zone unless otherwise noted:

1. Refer to Chapter 1 KZC to determine what other provisions of this code may apply to the subject property.

2. ~~See KZC 30.17 for regulations regarding bulkheads and land surface modification.~~

~~3.~~ The required 30-foot front yard may be reduced one foot for each one foot of this yard that is developed as a public use area if:
a. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line; and
b. Substantially, the entire width of this yard (from north to south property lines) is developed as a public use area; and
c. The design of the public use area is specifically approved by the City.
(Does not apply to Public Access Pier , ~~or~~ Boardwalk or Public Access Facility; Boat launch; ~~,~~ ~~Moorage Facility for 1 or 2 Boats~~Piers, docks, boat lifts and canopies serving Detached Dwelling Unit; Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units;~~,~~ Public Park~~-~~; ~~or~~ Public Utility uses; Boat Launch; or Water Taxi).

3. The required 30-foot front yard may be reduced, subject to the following conditions:
a. The existing primary structure does not conform to the minimum shoreline setback standard;
b. The front yard may be reduced one foot for each one foot of the shoreline setback that is increased in dimension;
c. The new or remodeled primary structure must comply with the minimum required shoreline setback established under the provisions of KZC Chapter 83, or as otherwise approved under the shoreline setback reduction provisions established in Section 83.380 KZC; and
d. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line.
(Does not apply to Public Access Pier, Boardwalk, or Public Access Facility; Boat launch; Piers, docks, boat lifts and canopies serving Detached Dwelling Unit; Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units; Public Park; Public Utility uses; Boat Launch; or Water Taxi).

4. A view corridor must be maintained across 30 percent of the average parcel width. Refer to KZC Chapter 83 for additional details. ~~The view corridor must be in one continuous piece. Within the view corridor, structures, parking areas, and landscaping will be allowed, provided that they do not obscure the view from Lake Washington Boulevard to and beyond Lake Washington. This corridor must be adjacent to either the north or south property line, whichever will result in the widest view corridor given development on adjacent properties (does not apply to Public Access Pier or Boardwalk, Moorage Facility for 1 or 2 Boats, or Public Park uses).~~

5. May not use lands waterward of the ~~high waterline~~ordinary high water mark to determine lot size or to calculate allowable density.

6. May also be regulated under the Shoreline Master Program, ~~KMC Title 24~~ refer to KZC Chapter 83.

Section 30.15	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
.010	Detached Dwelling Units	None	3,600 sq. ft./unit, except if 1,800 sq. ft./unit for up to 2 dwelling units if the public access provisions of KZC 83.390 are met~~3,600 sq. ft.~~	30′	. ~~The greater of: a. 15 or b. 1-1/2 times the height of the primary structure above average building elevation minus 10~~'	5', but two side yards must equal at least 15 feet.~~10~~'	See Chapter 83 KZC~~The greater of: a. 15 or b. 15% of the average parcel depth.~~	80%	30' above average building elevation. This provision may not be varied	E	A	2.0 per unit	1. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ordinary high water mark. For the regulations regarding~~ moorages and public access piers, see the specific listings in this zone~~piers or docks serving detached dwelling units, refer to the specific listings in this zone and Chapter 83 KZC. 2. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use.
				The minimum dimension of any yard, other than those listed, is 5' See General Regulations.									

Section 30.15	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
.020	Detached, Attached or Stacked Dwelling Units	Process I, Chapter 145 KZC	. 3,600 sq. ft. per unit	30'	~~. The greater of: a. 15 or b. 1-1/2 times the height of the primary structure above average building elevation minus 10~~	~~10'~~ 5', but the two side yards must equal at least 15 feet.	See Chapter 83 KZC~~The greater of: a. 15 or b. 15% of the average parcel depth.~~		30' above average building elevation. See also Special Regulation 3	D		.	1. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ordinary high water mark. For the regulations regarding moorage and public access piers, see the specific listings in this zone and Chapter 83 KZC. 2. Chapter 83 KZC contains regulations regarding shoreline setbacks, view corridors, and public pedestrian walkways~~Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from adjoining property. The City shall require signs designating the public pedestrian access and public use areas.~~ 3. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and a. The increase is offset by a view corridor that is superior to that required by the General Regulations.~~; or~~ ~~b. The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation.~~ 4. ~~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.~~ REGULATIONS CONTINUED ON NEXT PAGE
				See General Regulations and Spec. Reg. 6									

Section 30.15	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
.020	Detached, Attached or Stacked Dwelling Units (continued)												REGULATIONS CONTINUED FROM PREVIOUS PAGE 5. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use. 6. Any required yard, other than the front yard ~~or high water line~~ or shoreline setback ~~required yard~~, may be reduced to zero feet if the side of the dwelling unit is attached to a dwelling unit on an adjoining lot. If one side of a dwelling unit is so attached and the opposite side is not, the side that is not attached shall provide the minimum required yard
.030	Public Access Pier, ~~or~~ Board-walk, or Public Access Facility	. ~~Process I, Chapter 145 KZC~~See Chapter 83 KZC~~.~~	None	See Chapter 83 KZC~~Waterward of the High Waterline~~				--	See Chapter 83 KZC~~Pier decks may not be more than 24' above mean sea level. Diving boards and similar features may not be more than 3' above the deck~~	--	~~See Spec. Reg. 7~~	See KZC 105.25	

Section 30.15	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
.040	Piers, docks, boat lifts and canopies serving Detached Dwelling Unit~~Moorage Facility for 1 or 2 boats~~	See Chapter 83 KZC~~None~~		See Chapter 83 KZC~~Waterward of the High Waterline~~				~~80%~~			~~See Spec. Reg. 8~~	None~~1 per each 2 slips. Otherwise, None if the moorage is reserved for the exclusive use of an adjoining residential development.~~	Refer to Chapter 83 KZC for additional regulations. ~~1. No accessory uses, buildings, or activities are permitted as part of this use. Various accessory components are permitted as part of a General Moorage Facility. See that listing in this zone.~~ ~~2. Moorage structure may not extend waterward beyond a point 150 feet from the high waterline. In addition, piers and docks may not be wider than is reasonably necessary to provide safe access to the boats, but not more than eight feet in width.~~ ~~3. If the moorage structures will extend waterward of the Inner Harbor Line, the applicant must obtain a lease from the Washington State Department of Natural Resources prior to submittal of a building permit for this use.~~ ~~4. May not treat moorage structure with creosote, oil base or toxic substances.~~ ~~5. Must provide at least one covered and secured waste receptacle.~~ ~~6. All utility lines must be below the pier deck and, where feasible, underground.~~ ~~7. Piers must be adequately lit; the source of the light must not be visible from neighboring properties.~~ ~~8. Moorage structures must display the street address of the subject property.~~ ~~9. Covered moorage is not permitted.~~ ~~10. Aircraft moorage is not permitted.~~
				~~–~~	~~10'~~	~~10'~~	~~–~~						
				~~In addition, no moorage structure may be within – a. 25' of a public park; or b. 25' of another moorage structure not on the subject property. The minimum dimension of any yard, other than those listed, is 5'~~									
.050	Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units	See Chapter 83 KZC	None	See Chapter 83 KZC					-			None	Refer to Chapter 83 KZC for additional regulations

Section 30.15	USE ⇩ / REGULATIONS ⇨	Required Review Process	MINIMUMS: Lot Size	MINIMUMS: REQUIRED YARDS (See Ch. 115): Front	MINIMUMS: REQUIRED YARDS (See Ch. 115): ~~North Property Line~~	MINIMUMS: REQUIRED YARDS (See Ch. 115): ~~South Property Line~~ Side Property Line	MINIMUMS: REQUIRED YARDS (See Ch. 115): Shoreline Setback~~High Water Line~~	MAXIMUMS: Lot Coverage	MAXIMUMS: Height of Structure	Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
		DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
.0650	Marina ~~General Moorage Facility~~	~~Process IIA, Chapter 150 KZC.~~See Chapter 83 KZC	None~~, but must have at least 100' of frontage on Lake Washington~~	Landward of the ~~High Waterline~~Ordinary High: 30' See Gen. Regs Waterward of the Ordinary High Water See Chapter 83 KZC~~High Waterline~~: –	Landward of the ~~High Waterline~~Ordinary High: ~~The greater of: a. 15' or b. 1-1/2 times the height of the primary structure above average building elevation minus 10~~ Waterward of the Ordinary High Water See Chapter 83 KZC~~High Waterline~~: ~~10'~~	Landward of the ~~High Waterline~~Ordinary High: 5', but two side yards must equal at least 15 feet~~10'~~ Waterward of the Ordinary High Water See Chapter 83 KZC~~High Waterline~~: ~~10'~~	Landward of the ~~High Waterline~~Ordinary High: See Chapter 83 KZC ~~For moorage structure, 0'. For other structures, the greater of a. 15' or b. 15% of the average parcel depth~~. Waterward of the Ordinary High Water See Chapter 83 KZC~~High Waterline~~: –	80%	- Landward of the ~~High Waterline~~ordinary high water mark, 30' above average building elevation. See also Spec. Reg. 32. ~~Waterward of the High Waterline, Dock and Pier decks may not be more than 24' above mean sea level.~~	B	B ~~See Spec. Reg. 13~~	1 per each 2 slips. ~~Otherwise, None, if the moorage is reserved for the exclusive use of an adjoining residential development.~~	1. Refer to Chapter 83 KZC for additional regulations. ~~1. Except as permitted by Special Regulation 16, no structures, other than each moorage structure or public access pier, may be waterward of the high waterline. For regulations regarding public access piers, see the specific listing in this zone.~~ ~~2. Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from adjoining property. In addition, the City may require that part or all of the high waterline yard be developed as a public use area. The City shall require signs designating the public pedestrian access and public use areas.~~ ~~3~~2. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and a. The increase is offset by a view corridor that is superior to that required by the General Regulations~~; or~~ ~~b. The increase is offset by maintaining comparable portions of the structure lower than 30' above average building elevation.~~. ~~4. 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.~~ ~~5. The City will determine the maximum allowable number of moorages based on the following factors:~~ ~~a. The ability of the land landward of the high waterline to accommodate the necessary support facilities.~~ ~~b. The potential for traffic congestion.~~ ~~6. Moorage structures may not be larger than is necessary to provide safe and reasonable moorage for the boats moored. The City will specifically review size and configuration of moorage~~

Section 30.15	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS										
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
				~~No moorage structure may be:~~ ~~a. Within 100 feet of a public park or~~ ~~b. 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; or~~ ~~(See next page for the rest of the Required Yard Regulations)~~								~~structures to insure that:~~ ~~a. The moorage structures are not larger than is necessary to moor the specified number of boats; and~~ ~~b. The moorage structures will not interfere with the public use and enjoyment of the water or create a hazard to navigation; and~~ ~~c. The moorage structures will not adversely affect nearby uses; and~~ ~~d. The moorage structures will not have a significant long term adverse effect on aquatic habitats.~~ ~~7. If the moorage structure will extend waterward of the Inner Harbor Line, the applicant must obtain a lease from the Washington State Department of Natural Resources prior to submittal of a Building Permit for this use.~~ ~~REGULATIONS FOR THIS USE CONTINUED ON THE NEXT PAGE~~

Section 30.15	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
.050	~~General Moorage Facility (continued)~~			~~c. Closer to a lot containing a detached dwelling unit than a line that starts where the high waterline 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; or~~ ~~d. Within 25' of another moorage structure not on the subject property.~~ ~~The minimum dimension of any yard, other than those listed, is 5'.~~ ~~See previous page for the rest of this column.~~	-				~~8. May not treat moorage structure with creosote, oil base or toxic substance.~~ ~~9. Must provide at least two covered and secured waste receptacles.~~ ~~10. All utility and service lines must be below the pier deck and, where feasible, underground.~~ ~~11. Must provide public restrooms unless moorage is only available for residents of dwelling units on the subject property.~~ ~~12. Piers must be adequately lit. The source of light must not be visible from neighboring properties.~~ ~~13. 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.~~ ~~14. Covered moorage is not permitted.~~ ~~15. Aircraft moorage is not permitted.~~ 3~~16.~~ The following accessory components are allowed if approved through Process IIB, Chapter 152 KZC: a. Boat and motor sales leasing. b. Boat and motor repair and service if: 1) This activity is conducted on dry land and either totally within a building or totally sight screened from adjoining property and the right-of-way; and 2) All dry land motor testing is conducted within a building. ~~c. Boat launching ramp if:~~ ~~1) It is not for use of the general public; and~~ ~~2) Is paved with concrete; and~~

Section 30.15	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
													~~3) There is sufficient room on the subject property for maneuvering and parking so that traffic impact on the frontage road will not be significant; and~~ ~~4) Access to the ramp is not directly from the frontage road; and~~ ~~The design of the site is specifically approved by the City.~~ ~~d. Dry land storage. However, stacked storage is not permitted.~~ e. Meeting and special events rooms. f. Gas and oil sale for boats, if: 1) Storage tanks are underground and on dry land; and 2) The use has facilities to contain and cleanup gas and oil spills. May have an over-water shed that is not more than 50 square feet and 10 feet high as measured from the deck. ~~17. 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.~~

Section 30.15	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
.060	Restaurant or Tavern	Process IIA, Chapter 150 KZC	7,200 sq. ft	30' See Gen. Regs~~.~~ See alos Spec Reg 6	~~The greater of: a. 15 or b. 1-1/2 times the height of the primary structure above average building elevation minus 10~~	5', but two side yards must equal at least 15 feet.~~10~~	See Chapter 83 KZC~~The greater of: a. 15, or b. 15% of the average parcel depth.~~	80%	-30' above average building elevation. See also Special Regulation 3.	B	E	1 per each 100 sq. ft. of gross floor area.	1. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ordinary high water mark. For the regulations regarding moorages, see the ~~moorage~~ specific listings in this zone and Chapter 83 KZC. 2. Chapter 83 KZC contains regulations regarding shorelin~~Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from adjoining property. In addition, the City may require that part or all of the high waterline yard be developed as a public use area. The City shall require signs designating the public pedestrian access and public use areas~~. 3. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and a. The increase is offset by a view corridor that is superior to that required by the General Regulations~~; or~~ ~~b. The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation.~~. 4. ~~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.~~ 5. Outside storage is not permitted. 6. The required yard of a structure abutting Lake Washington Boulevard or Lake Street South must be increased two feet for each one foot that structure exceeds 25 feet above average building elevation. 7. Drive-in or drive-through facilities are prohibited.

The minimum dimension of any yard, other than those listed, is 5'

Section 30.15	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
.070	Public Park	Development standards will be determined on a case-by-case basis. See Chapter 49 KZC for required review process. May also be regulated under the Shoreline Master Program, refer to KZC Chapter 83.											1. ~~The provisions of Chapter 90 KZC, limiting development in and around wetlands, do not apply to a public park, if the development is approved as part of a Master Plan.~~ 2. This use may include a public access pier, ~~or~~ boardwalk, or public access facility. See ~~KZC 30.15.030~~ the specific listing in this Zone and Chapter 83 KZC for regulations regarding these uses. 3. This use may include swimming beaches or other public recreational uses. See Chapter 83 for regulations regarding these uses.
.080 .090	Public Utility Government Facility Community Facility	Process IIA, Chapter 150 KZC	None	30' See Gen. Regs	~~. The greater of: a. 15 or b. 1-1/2 times the height of the primary structure above average building elevation minus 10'~~	5', but two side yards must equal at least 15 feet.~~10'~~	See Chapter 83 KZC~~The greater of: a. 15' or b. 15% of the average parcel depth~~.	80%	-30' above average building elevation. See also Special Regulation 3.	A C See Spec. Reg. 5.	B	See KZC 105.25.	1. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ ordinary high water mark. For the regulation regarding moorages and public access piers, see the specific listings in this zone and Chapter 83 KZC. 2. Chapter 83 KZC contains regulations regarding shoreline~~Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from the adjoining property. The City shall require signs designating the public pedestrian access and public uses areas~~. 3. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and a. The increase is offset by a view corridor that is superior to that required by the General Regulations~~; or~~ ~~b. The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation.~~. 4. ~~The design of the site must be compatible with the scenic nature of the waterfront. If the development will result in the~~

Section 30.15	USE ⇩ / REGULATIONS ⇨	Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
													~~isolation of a detached dwelling unit, site design, building design, and landscaping must mitigate the impacts of that isolation.~~ 5. For a Government Facility use, Landscape Category A or B may be required depending on the type of use on the subject property and the impacts on the nearby uses.
.100	Assisted Living Facility	Process I, Chapter 145 KZC	3,600 sq. ft	30' See Gen. Regs and Soecial Regulation 6.	~~The greater of: a. 15 or b. 1-1/2 times the height of the primary structure above average building elevation minus 10'~~	5', but two side yards must equal at least 15 feet.~~10'~~	See Chapter 83 KZC~~The greater of: a. 15, or b. 15% of the average parcel depth.~~	80%	-30' above average building elevation. See also Special Regulation 6.	D	A	2.0 per independent unit. 1 per assisted living unit	1. A facility that provides both independent dwelling units and assisted living units shall be processed as an assisted living facility. 2. A nursing home use may be permitted as part of an assisted living facility use in order to provide a continuum of care for residents. If a nursing home is included, the following parking standards shall apply to the nursing home portion of the facility: a. One parking stall shall be provided for each bed. 3. For density purposes, two assisted living units shall constitute one dwelling unit. Total dwelling units may not exceed the number of stacked dwelling units allowed on the subject property. Through Process IIB, Chapter 152 KZC, up to 1 1/2 times the number of stacked dwelling units allowed on the property may be approved if the following criteria are met: a. Project is of superior design, and b. Project will not create impacts that are substantially different than would be created by a permitted multifamily development. 4. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ordinary high water mark. For the regulation regarding moorages and public access piers, see the specific listings in this zone and Chapter 83 KZC. 5. Chapter 83 KZC contains regulations regarding shorelin~~Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property. within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the~~

The minimum dimension of any yard, other than those listed, is 5'.

Section 30.15	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~						
													~~subject property can be reached from the adjoining property. The City shall require signs designating the public pedestrian access and public uses areas.~~ 6. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and a. The increase is offset by a view corridor that is superior to that required by the General Regulations~~; or~~ ~~b. The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation~~. 7. ~~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.~~ 8. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities, and activities associated with this use.
.110	Boat launch (for non-motorized boats)	See Chapter 83 KZC	None	See Chapter 83 KZC					-			None	Refer to Chapter 83 KZC for additional regulations.

Section 30.15	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ **Side Property Line**	Shoreline Setback~~High Water Line~~						
.120	Water taxi	See Chapter 83 KZC	None	Landward of the Ordinary High Water Mark				80%	- Landward of the ordinary high water mark, 30 above average building elevation. See also Spec. Reg. 2	B	B	See KZC 105.25	1. Refer to Chapter 83 KZC for additional regulations. 2. . Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and The increase is offset be a view corridor that is superior to that required by the General Regulations
				30' See Gen. Regs		5', but two side yards must equal at least 15 feet	See Chapter 83 KZC						

30.19 User Guide. The charts in KZC 30.25 contain the basic zoning regulations that apply in the WD II zones of the City. Use these charts by reading down the left hand column entitled Use. Once you locate the use in which you are interested, read across to find the regulations that apply to that use.

Section 30.20

Zone WDII

Section 30.20 – GENERAL REGULATIONS
The following regulations apply to all uses in this zone unless otherwise noted:

1. Refer to Chapter 1 KZC to determine what other provisions of this code may apply to the subject property.

~~2. See KZC 30.27 for regulations regarding bulkheads and land surface modifications.~~

~~3~~2. May not use lands waterward of the ordinary high water mark~~high waterline~~ to determine lot size or to calculate allowable density.

~~4~~3. May also be regulated under the Shoreline Master Program, refer to KZC Chapter 83~~KMC Title 24~~

Section 30.15	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
		Required Review Process	MINIMUMS						MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)					Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback ~~High Water Line~~	Side Property Line						
.010	Detached Dwelling Units	None	12,500 sq. ft.	10' for those properties that conform to the standard shoreline setback requirements established in Chapter 83 KZC. See Spec. Reg. 10 Otherwise, 20' See Spec. Reg. 8 and 11.	~~5'~~	5'	See Chapter 83 KZC ~~The greater of: a. 15' or b. 15% of the average parcel dept~~	5', but 2 side yards must equal at least 15' or Spec Reg 5	50%	For properties with a minimum of 45' of frontage along Lake Washington, 30' above average building elevation. See Special Reg 10 Otherwise, 25' above average building elevation	E	A	2.0 per unit.	1. No structure, other than a moorage structure, may be waterward of the ~~high waterline~~ordinary high water mark. For the regulations regarding moorage, see ~~the Moorage listing in this zone~~Chapter 83 KZC. 2. For this use, only one dwelling unit may be on each lot regardless of lot size. 3. ~~If dwelling units exist on property that abuts the subject property to the north and south, the required high waterline yard is the average of the distance of existing legally-constructed structures from the high waterline on these two abutting properties. If, because of abutting properties, the required high waterline yard is increased~~For properties located south of the Lake Ave W ~~S~~ street end park, the required ~~opposite~~ front yard may be decreased to the average of the existing ~~opposite~~ front yards on the properties abutting the subject property to the north and south. 4. ~~If either the north property line yard or the south property line yard is also the front yard of the subject property, it will be regulated as a front yard.~~ The dimensions of any required yard, other than as specifically listed, will be determined on a case-by-case basis. The City will use the setback for this use in RS zones as a guide. 5. The gross floor area of any floor above the first story at street or easement level shall be reduced by a minimum of 15% of the floor area of the first story, subject to the following conditions: a. The structure must conform to the standard shoreline setback requirements established in Chapter 83 KZC, or as otherwise approved under the shoreline setback reduction provisions established in Section 83.380 KZC. b. The required floor area reductions shall be incorporated into the facades facing the side property lines in order to

Section 30.25	USE ⇩ / REGULATIONS ⇨	Required Review Process	MINIMUMS: Lot Size	MINIMUMS: REQUIRED YARDS (See Ch. 115): Front	MINIMUMS: REQUIRED YARDS: ~~North Property Line~~	MINIMUMS: REQUIRED YARDS: ~~South Property Line~~ Side Property Line	MINIMUMS: REQUIRED YARDS: Shoreline Setback~~High Water Line~~	MINIMUMS: REQUIRED YARDS: Side Property Line	MAXIMUMS: Lot Coverage	MAXIMUMS: Height of Structure	Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
														DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS
														provide separation between neighboring residences. c. This provision shall not apply to residences that do not contain a ceiling height greater than 16 feet above the street level, as measured at the midpoint of the frontage of the subject property on the abutting right-of-way . d. The calculation of gross floor area shall apply the provisions established in KZC 115.42.1. ~~minus five feet.~~
.020	Piers, docks, boat lifts and canopies serving Detached Dwelling Unit~~Moorage Facility for 1 or 2 boats.~~ ~~See also Special Regulations 1 and 11.~~	See Chapter 83 KZC~~None~~	None	Landward of the ~~High Waterline~~Ordinary High Water mark 20' ~~Waterward of the High Waterline~~Ordinary High Water Mark, see Chapter 83 KZC ~~--~~'	~~5~~' ~~10~~' ~~10~~'	'~~10~~ ~~10~~'	-- ~~--~~	5', but 2 side yards must equal at least 15'.		See Chapter 83 KZC~~Landward of the High Waterline, 25' above average building elevation. Waterward of the High Waterline, dock and pier decks may not be more than 24' above mean sea level. Diving boards and similar features may not be more than 3' above the deck.~~	~~E~~	~~See Spec. Reg. 8.~~	None	Refer to Chapter 83 KZC for additional regulations. ~~1. Moorage must be for the exclusive use of residents of the subject property. Renting moorage space is not permitted.~~ ~~2. Moorage structures may not extend waterward beyond a point 150 feet from the high waterline. In addition, piers and docks may not be wider than is reasonably necessary to provide safe access to the boats, but not more than eight feet in width.~~ ~~3. If the moorage structures will extend waterward of the Inner Harbor Line, the applicant must obtain a lease from the Washington State Department of Natural Resources prior to proposing this use.~~ ~~4. May not treat moorage structure with creosote, oil base or toxic substances.~~ ~~5. Must provide at least one covered and secured waste receptacle.~~ ~~6. All utility lines must be below the pier deck and, where feasible, underground.~~ ~~7. Piers must be adequately lit; the source of the light must not be visible from neighboring properties.~~ ~~8. 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, and visible from the lake.~~ ~~9. Covered moorage is not permitted.~~ ~~10. Aircraft moorage is not permitted.~~

~~In addition, no moorage structure may be within either~~
~~a. 25' of a public park; or~~
~~b. 25' of another moorage structure not on the subject property.~~
~~See Special Regulation 1.~~

Section 30.15	USE ⇩ / REGULATIONS ⇨	Required Review Process	MINIMUMS: Lot Size	MINIMUMS: REQUIRED YARDS (See Ch. 115): Front	MINIMUMS: REQUIRED YARDS (See Ch. 115): ~~North Property Line~~	MINIMUMS: REQUIRED YARDS (See Ch. 115): ~~South Property Line~~ Side Property Line	MINIMUMS: REQUIRED YARDS (See Ch. 115): Shoreline Setback~~High Water Line~~	MINIMUMS: REQUIRED YARDS (See Ch. 115): Side Property Line	MAXIMUMS: Lot Coverage	MAXIMUMS: Height of Structure	Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
														~~11. Two or more adjoining waterfront lots may share a mooring facility. If this occurs, the following regulations apply:~~ ~~a. All lots will be taken together as the subject property to determine compliance with the requirements of this use.~~ ~~b. The moorage structure may be built to accommodate two boats for each residential unit on the subject property.~~ ~~c. The owner of each lot must deed to the City the over-water development rights to the property. Upon request, the City will, without cost, deed this right back to the owner of a lot, but the number of boats permitted to moor at the shared moorage facility will be reduced by two.~~
.030 .040	Public Utility Government Facility Community Facility	Process IIA, Chapter 150 KZC.	None	20' 20'	~~20~~ ~~10~~	~~20~~ ~~10~~	See Chapter 83 KZC~~The greater of: a. 15 or b. 15% of the average parcel depth.~~	5', but 2 side yards must equal at least 15'	70%	25' above average building elevation	A C See Spec. Reg. 4.	B	See KZC 105.25.	1. Site design must minimize adverse impacts on surrounding residential neighborhoods. 2. If any portion of a structure is adjoining a detached dwelling unit in a low density zone, then either: a. The height of that portion of the structure shall not exceed 15 feet above average building elevation, or b. The maximum horizontal facade shall not exceed 50 feet. See KZC 115.30, Distance Between Structures/Adjacency to Institutional Use, for more details. 3. ~~If either a north property line yard or the south property line yard is also the front yard of the subject property, it will be regulated as a front yard.~~ The dimension of any required yard, other than as specifically listed, will be determined on a case-by-case basis. The City will use the setback for this use in RS zones as a guide. 4. Landscape Category A or B may be required depending on the type of use on the subject property and the impacts associated with the use on nearby uses

Section 30.25	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
		Required Review Process	MINIMUMS						MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)					Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side Property Line	Shoreline Setback~~High Water Line~~	Side Property Line						
.050	Public Park	Development standards will be determined on a case-by-case basis. See Chapter 49 KZC for required review process.												1. If any portion of a structure is adjoining a low density zone, then either: a. The height of that portion of the structure shall not exceed 15 feet above average building elevation, or b. The horizontal length of any facade of that portion of the structure which is parallel to the boundary of the low density zone shall not exceed 50 feet. See KZC 115.30, Distance Between Structures/Adjacency to Institutional Use, for more details. ~~2. The provisions of Chapter 90 KZC limiting development in and around wetlands do not apply to a public park, if the development is approved as part of a Master Plan.~~ 3. This use may include a public access pier or boardwalk. See ~~KZC 30.15.030~~Chapter 83 KZC for regulations regarding these uses.

30.29 User Guide. The charts in KZC 30.35 contain the basic zoning regulations that apply in the WD III zones of the City. Use these charts by reading down the left hand column entitled Use. Once you locate the use in which you are interested, read across to find the regulations that apply to that use.

Section 30.30

Zone WDIII

Section 30.30 – GENERAL REGULATIONS

The following regulations apply to all uses in this zone unless otherwise noted:

1. Refer to Chapter 1 KZC to determine what other provisions of this code may apply to the subject property.

~~2.~~ Refer to Chapter 1 KZC to determine what other provisions of this code may apply to the subject property.

~~3~~2. May not use lands waterward of the ~~high waterline~~ordinary high water mark to determine lot size or to calculate allowable density.

~~4~~3. May also be regulated under the Shoreline Master Program, ~~KMC Title 24~~Chapter 83 KZC.

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~	Shoreline Setback~~High Water Line~~						
.010	Detached Dwelling Unit	None	3,600 sq. ft./unit, except if 1,800 sq. ft./unit for up to 2 dwelling units if the public access provisions of KZC 83.390 are met~~3,600 sq. ft.~~	30' See also Spec. Reg. 2.	~~t.The greater of: a. 15 or b. 1-1/2 times the height of the primary structure above average building elevation minus 10'~~	5', but 2 side yards must equal at least 15 ~~10~~	See Chapter 83 KZC~~The greater of: a. 15 or b. 15% of the average parcel depth.~~	80%	30' above average building elevation. This provision may not be varied.	E	A	2.0 per unit.	1. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ ordinary high water mark. For the regulations regarding moorages and public access piers, see the specific listings in this zone and Chapter 83 KZC~~.~~ 2. The required 30-foot front yard may be reduced one foot for each one foot of this yard that is developed as a public use area if: a. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line; and b. Substantially, the entire width of this yard (from north to south property lines) is developed as a public use area; and c. The design of the public use area is specifically approved by the City. 3. The required 30-foot front yard may be reduced, subject to the following conditions: a. The existing primary structure does not conform to the minimum shoreline setback standard; b. The front yard may be reduced one foot for each one foot of the shoreline setback that is increased in dimension; c. The new or remodeled primary structure must comply with the minimum required shoreline setback established under the provisions of KZC Chapter 83, or as otherwise approved under the shoreline setback reduction provisions established in Section 83.380 KZC; and d. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line. ~~increase in~~ ~~3~~4. ~~A view corridor must be maintained across 30 percent of the average parcel width. The view corridor must be in one continuous piece. Within the view corridor, structures, parking areas and landscaping will be allowed, provided that they do not obscure the view from Lake Washington Boulevard to and beyond~~

Section 30.35	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~	Shoreline Setback~~High Water Line~~						
													~~Lake Washington. This corridor must be adjacent to either the north or south property line, whichever will result in the widest view corridor given development on adjacent properties.~~Chapter 83 KZC contains regulations regarding shoreline setbacks, view corridors, and public pedestrian walkways. ~~4~~5. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use. ~~5~~6. The required yard of a structure abutting Lake Washington Blvd. must be increased two feet for each one foot that structure exceeds 25 feet above the adjacent centerline of Lake Washington Blvd.

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback ~~High Water Line~~						
.020	Attached or Stacked Dwelling Units	Process I, Chapter 145 KZC.	3,600 sq. ft. per unit	30' See also Spec. Reg. 3.	~~The greater of: a. 15' or b. 1-1/2 times the height of the primary structure above average building elevation minus 10'~~	5', but 2 side yards must equal at least 15' ~~10'~~	See Chapter 83 KZC ~~The greater of: a. 15' or b. 15% of the average parcel depth~~	80%	30' above average building elevation. See also Spec. Reg. 5	D	A	2.0 per unit.	1. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ordinary high water mark. For the regulations regarding moorages and public access piers, see the specific listings in this zone and Chapter 83 KZC. 2. Chapter 83 KZC contains regulations regarding shoreline setbacks, view corridors, and public pedestrian walkways. ~~Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from adjoining property. The City shall require signs designating the public pedestrian access and public uses areas.~~ ~~See Chapter 83 KZC for requirements.~~ 3. The required 30-foot front yard may be reduced one foot for each one foot of this yard that is developed as a public use area if: a. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line; and b. Substantially, the entire width of this yard (from north to south property lines) is developed as a public use area; and c. The design of the public use area is specifically approved by the City. 4. The required 30-foot front yard may be reduced, subject to the following conditions: a. The existing primary structure does not conform to the minimum shoreline setback standard; b. The front yard may be reduced one foot for each one foot of the shoreline setback that is increased in dimension; c. The new or remodeled primary structure must comply with the minimum required shoreline setback established under the provisions of KZC Chapter 83, or as otherwise approved under the shoreline setback reduction provisions established in Section 83.380 KZC; and

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~	Shoreline Setback~~High Water Line~~						
													d. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line.~~increase in~~ 5.~~ A view corridor must be maintained across 30% of the average parcel width. The view corridor must be in one continuous piece. Within the view corridor, structures, parking areas and landscaping will be allowed, provided that they do not obscure the view from Lake Washington Boulevard to and beyond Lake Washington. This corridor must be adjacent to either the north or south property line, whichever will result in the widest view corridor given development on adjacent properties.~~ ~~5~~6. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and a. The increase is offset by a view corridor that is superior to that required by ~~Special Regulation 4~~Chatpter 83 KZC; or b. ~~The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation.~~ ~~6~~7. ~~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.~~ REGULATIONS FOR THIS USE CONTINUED ON THE NEXT PAGE

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~	Shoreline Setback~~High Water Line~~						
.020	Attached or Stacked Dwelling Units (continued)												REGULATIONS CONTINUED FROM PREVIOUS PAGE 7. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use. 8. Any required yard, other than the front required yard or ~~high water line required yard~~shoreline setback, may be reduced to zero feet if the side of the dwelling unit is attached to a dwelling unit on an adjoining lot. If one side of a dwelling unit is so attached and the opposite side is not, the side that is not attached shall provide the minimum required yard.
.030	Public Access Pier ~~o~~.r Boardwalk or Public Access Facility	See Chapter 83 KZC~~Process I, Chapter 145 KZC.~~	None	See Chapter 83 KZC~~Waterward of the High Waterline~~ ~~–~~ ~~10~~ ~~10~~ ~~–~~ ~~See also Special Regulation 8~~				–	~~Pier decks may not be more than 24″ above mean sea level. Diving boards and similar features may not be more than 3″ above the deck~~	–	~~See Spec. Reg. 7~~	See KZC 105.25.	Refer to Chapter 83 KZC for additional regulations. ~~1. No accessory uses, buildings, or activities are permitted as part of this use.~~ ~~2. If a structure will extend waterward of the Inner Harbor Line, the applicant must obtain a lease from the Washington State Department of Natural Resources prior to submittal of a Building Permit for this use.~~ ~~3. May not treat a structure with creosote, oil base or toxic substances.~~ ~~4. Must provide at least one covered and secured waste receptacle.~~ ~~5. All utility lines must be below the pier deck and, where feasible, underground.~~ ~~6. Piers must be adequately lit; the source of the light must not be visible from neighboring properties.~~ ~~7. 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.~~ ~~8. North and south property line yards may be decreased for over-water public use facilities which connect with waterfront public access on adjacent property.~~

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~	Shoreline Setback~~High Water Line~~						
.040	Piers, docks, boat lifts and canopies serving	See Chapter 83 KZC~~None~~	None	See Chapter 83 KZC~~Waterward of the High Waterline~~ ~~--~~ ~~10~~ ~~10~~ ~~--~~ ~~In addition, no moorage structure may be within a. 25 of a public park; or b. 25 of another moorage structure not on the subject property.~~ ~~The minimum dimension of any yard, other than those listed, is 5~~				80%	~~Pier decks may not be more than 24 above mean sea level. Diving boards and similar features may not be more than 3 above the deck.~~	--	~~See Spec. Reg. 9.~~	None	Refer to Chapter 83 KZC for additional regulations. ~~1. Moorage must be for the exclusive use of the residents of the subject property. Renting moorage spaces is not permitted.~~ ~~2. No accessory uses, buildings, or activities are permitted as part of this use. Various accessory components are permitted as part of a General Moorage Facility. See that listing in this zone.~~ ~~3. Moorage structure may not extend waterward beyond a point 150 feet from the high waterline. In addition, piers and docks may not be wider than is reasonably necessary to provide safe access to the boats, but not more than eight feet in width.~~ ~~4. If the moorage structures will extend waterward of the Inner Harbor Line, the applicant must obtain a lease from the Washington State Department of Natural Resources prior to submittal of a Building Permit for this use.~~ ~~5. May not treat moorage structure with creosote, oil base or toxic substances.~~ ~~6. Must provide at least one covered and secured waste receptacle.~~ ~~7. All utility lines must be below the pier deck and, where feasible, underground.~~ ~~8. Piers must be adequately lit; the source of the light must not be visible from neighboring properties.~~ ~~9. 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, and visible from the Lake.~~ ~~10. Covered moorage is not permitted.~~ ~~11. Aircraft moorage is not permitted.~~ ~~12. Live-aboard boats are prohibited.~~

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback~~High Water Line~~						
.050	~~General Moorage Facility~~Piers, docks, boat lifts and canopies serving ~~Detached,~~ Attached or Stacked Dwelling Units	See Chapter 83 KZ~~Process IIA, Chapter 150 KZC.~~	None~~, but must have at least 100' of frontage on Lake Washington.~~	30 ~~See also Spec. Reg. 3.~~	~~The greater of: a. 15' or~~	5', but 2 side yards must equal at least 15' ~~10'~~	See Chapter 83 KZC ~~For moorage structure, 0'. For other structures, the greater of: a. 15' or b. 15% of the average parcel depth.~~	~~80%~~	Landward of the ~~High Waterline~~Ordinary High Water Mark, 30' above average building elevation. ~~Waterward of the High Waterline, Dock and Pier decks may not be more than 24' above mean sea level.~~	B	B ~~See Spec. Reg. 14.~~	None	Refer to Chapter 83 KZC for additional regulations.~~1. Moorage must be for the exclusive use of the residents of the subject property. Renting moorage space is not permitted. 2. No structures, other than moorage structures or public access piers, may be waterward of the high waterline. For regulations regarding public access piers, see the specific listing in this zone. 3. Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from adjoining property. In addition, the City may require that part or all of the high waterline yard be developed as a public use area. The City shall require signs designating the public pedestrian access and public use areas. 4. The required 30-foot front yard may be reduced one foot for each one foot of this yard that is developed as a public use area if: a. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line; and b. Substantially, the entire width of this yard (from north to south property lines) is developed as a public use area; and c. The design of the public use area is specifically approved by the City. 5. A view corridor must be in one continuous piece. Within the view corridor, structures, parking areas and landscaping will be allowed, provided that they do not obscure the view from Lake Washington Boulevard to and beyond Lake Washington. This corridor must be adjacent to either the north or south property line, whichever will result in the widest view corridor given development on adjacent properties. 6. The design on the site must be compatible with the scenic nature of the waterfront. If the development will result in the~~
				Waterward of the Ordinary High Water Mark, see Chapter 83 KZC									
				~~--~~	~~10'~~	~~10'~~	~~--~~						

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~	Shoreline Setback~~High Water Line~~						
				~~No moorage structure may be a. Within 100 feet of a public park; or b. 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 overwater structure; or (See next page for the rest of the Required Yard Regulations)~~								~~isolation of a detached dwelling unit, site design, building design and landscaping must mitigate the impacts of that isolation. 7. The City will determine the maximum allowable number of moorages based on the following factors: a. The ability of the land landward of the high waterline to accommodate the necessary support facilities. b. The potential for traffic congestion. c. The number of moorages shall not exceed the number of dwelling units on the subject property. REGULATIONS FOR THIS USE CONTINUED ON THE NEXT PAGE~~

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback ~~High Water Line~~						
.050	~~General Moorage Facility~~ (~~continued~~)			~~c. Closer to a lot containing a detached dwelling unit than a line that starts where the high waterline 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; or~~ ~~d. Within 25 of another moorage structure not on the subject property.~~ ~~The minimum dimension of any yard, other than those listed, is 5 ˜~~ ~~(See previous page for the rest of this column)~~							~~8. Moorage structures may not be larger than is necessary to provide safe and reasonable moorage for the boats moored. The City will specifically review size and configuration of moorage structures to insure that:~~ ~~a. The moorage structures do not extend waterward of the point necessary to provide reasonable draft for the boats to be moored, but not beyond the outer harbor line; and~~ ~~b. The moorage structures are not larger than is necessary to moor the specified number of boats; and~~ ~~c. The moorage structures will not interfere with the public use and enjoyment of the water or create a hazard to navigation; and~~ ~~d. The moorage structures will not adversely affect nearby uses; and~~ ~~e. The moorage structures will not have a significant long-term adverse effect on aquatic habitats.~~ ~~9. If the moorage structures will extend waterward of the Inner Harbor Line, the applicant must obtain a lease from the Washington State Department of Natural Resources prior to submittal of a Building Permit for this use.~~ ~~10. May not treat moorage structure with creosote, oil base or toxic substance.~~ ~~11. Must provide at least two covered and secured waste receptacles.~~ ~~12. All utility and service lines must be below the pier deck and, where feasible, underground.~~ ~~13. Piers must be adequately lit. The source of light must not be visible from neighboring properties.~~ ~~14. 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.~~ ~~15. Covered moorage is not permitted.~~ ~~16. Aircraft moorage is not permitted.~~ ~~17. At least one pump-out facility shall be provided.~~

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback ~~High Water Line~~						
.060	Public Park	Development standards will be determined on a case-by-case basis. See Chapter 49 KZC for required review process. May also be regulated under the Shoreline Master Program, refer to KZC Chapter 83.											1. ~~The provisions of Chapter 90 KZC limiting development in and around wetlands do not apply to a public park, if the development is approved as part of a Master Plan.~~ 2. This use may include a public access pier, ~~or~~ boardwalk or public access facility. See the specific listing in this Zone and Chapter 83 KZC for regulations regarding these uses. ~~See KZC 30.15.030 for regulations regarding these uses.~~ 3. This use may include swimming beaches or other public recreational uses. See Chapter 83 for regulations regarding these uses.
.070 .080	Public Utility Government Facility Community Facility	Process IIA, Chapter 150 KZC.	None	30 See also Spec Reg. 3.	. ~~The greater of: a. 15 or b. 1-1/2 times the height of the pri-~~	5 , but 2 side yards must equal at least 15 . ~~10~~	See Chapter 83 KZC ~~The greater of: a. 15 or b. 15% of the average parcel~~	80%	30 above average building elevation. See also Special Regulation 5.	A C See Spec. Reg. 7.	B	See KZC 105.25.	1. No structures, other than moorage structures or public access piers, may be waterward of the ~~high waterline~~ordinary high water mark. For regulations regarding moorages and public access piers, see the specific listings in this zone and ~~.~~Chapter 83 KZC. 2. ~~Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from the adjoining property. The City shall require signs designating the public pedestrian access and public uses areas.~~ 3. The required 30-foot front yard may be reduced one foot for each one foot of this yard that is developed as a public use area

Section 30.35	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback ~~High Water Line~~						
					~~mary structure above average building elevation minus 10~~		~~depth.~~						if: a. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line; and b. Substantially, the entire width of this yard (from north to south property lines) is developed as a public use area; and c. The design of the public use area is specifically approved by the City. 4. Chapter 83 KZC contains regulations regarding shoreline setbacks, view corridors, and public pedestrian walkways.~~A view corridor must be maintained across 30 percent of the average parcel width. The view corridor must be in one continuous piece. Within the view corridor, structures, parking areas and landscaping will be allowed, provided that they do not obscure the view from Lake Washington Boulevard to and beyond Lake Washington. This corridor must be adjacent to either the north or south property line, whichever will result in the widest view corridor given development on adjacent properties.~~ 5. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and a. The increase is offset by a view corridor that is superior to that required by Special Regulation 4; or b. The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation. 6. ~~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.~~ 7. Landscape Category A or B may be required, depending on the type of use on the subject property and the impacts associated with the use on the nearby uses.

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback ~~High Water Line~~						
.090	Assisted Living Facility	Process I, Chapter 145 KZC.	3,600 sq. ft.	30 See also Spec. Reg. 6.	~~The greater of: a. 15 or b. 1-1/2 times the height of the primary structure above average building elevation minus 10~~	5 , but 2 side yards must equal at least 15 ~~10~~	See Chapter 83 KZC ~~The greater of: a. 15 , or b. 15% of the average parcel depth~~.	80%	30 above average building elevation. See also Special Regulation 8.	D	A	2.0 per independent unit. 1 per assisted living unit.	1. A facility that provides both independent dwelling units and assisted living units shall be processed as an assisted living facility. 2. A nursing home use may be permitted as part of an assisted living facility use in order to provide a continuum of care for residents. If a nursing home is included, the following parking standards shall apply to the nursing home portion of the facility: a. One parking stall shall be provided for each bed. 3. For density purposes, two assisted living units shall constitute one dwelling unit. Total dwelling units may not exceed the number of stacked dwelling units allowed on the subject property. Through Process IIB, Chapter 152 KZC, up to 1 1/2 times the number of stacked dwelling units allowed on the property may be approved if the following criteria are met: a. Project is of superior design, and b. Project will not create impacts that are substantially different than would be created by a permitted multifamily development. 4. No structures, other than moorage structures or public access piers, may be waterward of the high waterline. For the regulation regarding moorages and public access piers, see the specific listings in this zone and Chapter 83 KZC.. ~~5.~~ Chapter 83 KZC contains regulations regarding shoreline setbacks, view corridors, and public pedestrian walkways. ~~Must provide public pedestrian access from the right-of-way to and along the entire waterfront of the subject property within the high waterline yard. Access to the waterfront may be waived by the City if public access along the waterfront of the subject property can be reached from the adjoining property. The City shall require signs designating the public pedestrian access and public uses areas.~~ 6. The required 30-foot front yard may be reduced one foot for each one foot of this yard that is developed as a public use area if: a. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above

Section 30.35	USE ⇩ REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback ~~High Water Line~~						
				The minimum dimension of any yard, other than those listed, is 5'.									the front property line; and b. Substantially, the entire width of this yard (from north to south property lines) is developed as a public use area; and c. The design of the public use area is specifically approved by the City. REGULATIONS CONTINUED ON NEXT PAGE
.090	Assisted Living Facility (continued												7. The required 30-foot front yard may be reduced, subject to the following conditions: a. The existing primary structure does not conform to the minimum shoreline setback standard; b. The front yard may be reduced one foot for each one foot of the shoreline setback that is increased in dimension; c. The new or remodeled primary structure must comply with the minimum required shoreline setback established under the provisions of KZC Chapter 83, or as otherwise approved under the shoreline setback reduction provisions established in Section 83.380 KZC; and d. Within 30 feet of the front property line, each portion of a structure is setback from the front property line by a distance greater than or equal to the height of that portion above the front property line. ~~A view corridor must be maintained across 30 percent of the average parcel width. The view corridor must be in one continuous piece. Within the view corridor, structures, parking areas and landscaping will be allowed, provided that they do not obscure the existing view from Lake Washington Boulevard to and beyond Lake Washington. This corridor must be adjacent to either the north or south property line, whichever will result in the widest view corridor given development on adjacent properties.~~ 8. Structure height may be increased to 35 feet above average building elevation if the increase does not impair views of the lake from properties east of Lake Washington Boulevard; and

Section 30.35	USE ⇩ / REGULATIONS ⇨	DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS											
		Required Review Process	MINIMUMS					MAXIMUMS		Landscape Category (See Ch. 95)	Sign Category (See Ch. 100)	Required Parking Spaces (See Ch. 105)	Special Regulations (See also General Regulations)
			Lot Size	REQUIRED YARDS (See Ch. 115)				Lot Coverage	Height of Structure				
				Front	~~North Property Line~~	~~South Property Line~~ Side	Shoreline Setback ~~High Water Line~~						
													a. The increase is offset by a view corridor that is superior to that required by Chapter 83 KZC~~Special Regulation 7~~; or b. The increase is offset by maintaining comparable portions of the structure lower than 30 feet above average building elevation. ~~9. 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.~~ 10. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities, and activities associated with this use.
.100	Boat launch (for non-motorized boats)	See Chapter 83 KZC	None	See Chapter 83 KZC								None	Refer to Chapter 83 KZC for additional regulations.
.110	Water taxi	See Chapter 83 KZC	None	Landward of the Ordinary High Water Mark				80%	Landward of the ordinary high water mark, 30 above average building elevation. See also Spec. Reg. 3.	B	B	See KZC 105.25.	Refer to Chapter 83 KZC for additional regulations.
				30 See Gen. Regs		5 , but 2 side yards must equal at least 15	See Chapter 83 KZC						

Response to Public Comments from Public Hearings in July 2009

The following is a summary of the key comments received as part of the public hearing process before the Houghton Community Council and Planning Commission, together with a brief staff response and suggested edits, if applicable. Staff has addressed preliminary comments from the Department of Ecology separately from other public comments. Due to detail and length of comments submitted by KLA, those comments are addressed in another attachment (see Attachment 6). In general, comments have been organized by topic, with references to the party making the comment.

A. Department of Ecology

Topic: Use Listings

DOE Comment: All uses that are listed in WAC 173-26-241(i.e. Agriculture, Aquaculture, Boating Facilities, Commercial, Forest Practice, Industry, In-Stream Structure, Recreation, Residential, Transportation, Utilities) must be defined and either prohibited or listed within the SMP as conditional or permitted uses with appropriate development standards identified to satisfy the no net loss policy goal of the SMP.

Staff Response: It appears that of the uses listed in WAC 173-26-241, the City's definitions are missing the following: Boating Facilities, Commercial Uses, Forest Practice, Industrial Uses, In-Stream Structures, Recreational Uses, and Residential Uses. Of the uses listed in WAC 173-26-241, all are addressed in the Use Zone Charts, with the exception of In-Stream Features that are addressed separately through the provisions of Section 83.510, which specifically addresses activities in streams.

Staff Recommended Change:

- Add the following definitions:
    - **Commercial Use:** Includes retail, office services, entertainment, recreation and/or light industrial uses, depending on the location. Retail uses are those that provide goods and/or services directly to the consumer, including service uses not usually allowed within an office use.
    - **Boating Facilities:** Facilities providing boat moorage space, fuel, or other commercial services. As used in this Chapter, boating facilities refer to the following use listings: Piers, Docks, Moorage Buoys, Boatlifts and Canopies serving Attached, Stacked and Detached Dwelling Units and Marinas and Moorage Facilities associated with Commercial Uses.
    - **Forest Practices:** Any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber.
    - **Industrial Use:** Uses such as manufacturing, assembly, processing, wholesaling, warehousing, distribution of products and high technology.
    - **In-Stream Structure:** A structure placed by humans within a stream or river waterward of the OHWM that either causes or has the potential to cause water impoundment or the diversion, obstruction, or modification of water flow. In-stream structures may include those for hydroelectric generation, irrigation, water supply, flood control, transportation, utility service transmission, fish habitat enhancement, or other purpose.

- **Recreational Use:** Commercial and public facilities designed and used to provide recreational opportunities to the public.
- **Residential Use**: Developments in which persons sleep and prepare food, other than developments used for transient occupancy. As used in the Chapter, residential development includes single-family development (known as detached dwelling unit), as well as multifamily development (known as detached, attached or stacked dwelling units) and the creation of new residential lots through land division.

Topic: Reasonable Use Exception

DOE Comment:

- The "Reasonable Use Exemption" that does not appear consistent with the Guidelines.
  - All Reasonable Use determinations are listed as exempt from requiring a variance, which is not consistent with the Guidelines. The SMP Guidelines provide flexibility to be considered for constrained lots through review of a shoreline variance and do not provide a categorical exemption for departure from SMP dimensional standards.
  - It is not clear if the Reasonable Use Exemption is limited to the Natural environment or available anywhere within the City's shoreline jurisdiction.

The City has a few options to consider in relation to the referenced inconsistency between the Guideline requirement to review any departure from SMP dimensional standards as a variance vs. preserving the Reasonable Use Exemption when dealing with future development on constrained shoreline properties:

- Option 1: Require a shoreline variance for any departure from SMP dimensional standards, but also include the City's Reasonable Use standards/criteria as additional review criteria under which the variance is reviewed.
- Option 2: Provide more specific geographic distinction of potential areas where the Reasonable Use Exemption criteria would be considered. Therefore, limiting the scope of allowed deviation from SMP standards to a defined number of lots for which build-out potential then needs to be considered within the Cumulative Impact Assessment and shown to maintain No Net Loss of Ecological Function. Note: under this option the City would either need to demonstrate that application of Reasonable Use consideration would be limited to specific lots based on SMP regulatory thresholds or identify geographic limits within the SMP for reasonable use criteria consideration. In other words, the City would essentially need to pre-authorize changes to critical area dimensional standards within a defined area (or defined lot configuration), as opposed to 'exempting' or not applying critical area or SMP standards to constrained lots.

  Staff Response: As currently proposed, a Reasonable Use Exception would only apply to properties meeting the following two provisions: 1) properties in the Natural environment, and 2) properties that 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 (see Section 83.500.10). Staff has clarified the location limitations by adding the following provisions:

Location Standards – This provision shall be limited to the following geographic areas within the City's shoreline jurisdiction:

i. Properties encumbered by wetlands or associated buffers in the Yarrow Bay Wetland complex.

ii. Properties located along Rose Point Lane that are encumbered by wetlands or wetland buffers in the Juanita Bay wetland complex.

The Cumulative Impact Analysis consideration of impacts was based upon these geographical limitations.

Staff Recommended Change: As noted above.

Topic: Stream Buffers

DOE Comment: Stream protection measures (i.e. 75' buffer) may not be consistent with the SMP Guidelines.

Staff Response: Streams located within the Natural Environment, which have the most ecologically intact buffer areas, are protected by more restrictive standards than are streams outside of the Natural environment, owing to a number of factors including: limitations on allowed uses and modifications in the Natural environment, as well as presence of extensive wetland buffers, within which the streams are located. Streams located in more urban areas have buffers that are already significantly impacted by past development practices and the buffers established for these streams are reflective of this existing condition.

Staff Recommended Change: None, unless further discussions with Ecology identify the need for amendments.

Topic: Shoreline Stabilization

DOE Comment:

- Need to clarify whether references to structural stabilization in Section 83.300 refer to hard structural shoreline, soft structural shoreline or both.
- Recommended changes to Section 83.300.9.K, requiring adjacent property owner consent when beach restoration results in a change in OHWM location thus changing shoreline jurisdiction. Ecology suggests that the City replace the adjacent property owner notice requirement with the new flexibility offered through new legislations (House Bill 2199) providing necessary relief to upland property owners that come into shoreline jurisdiction as a result of an adjacent restoration project.

Staff Response: House Bill 2199 was adopted in May of this year and accomplishes the following:

A local government may grant relief from master program standards and use regulations that apply within a UGA if a shoreline restoration project causes or will cause a landward shift in the ordinary high water mark that results in land that had

not been regulated under the SMA before construction of the restoration project being brought under shoreline jurisdiction or:

- *additional regulatory requirements applying due to a landward shift in required shoreline buffers or other regulations of the applicable master program; and*
- *the application of master program regulations that preclude or interfere with use of the property in ways permitted by local development regulations, thus presenting a hardship to the project proponent.*

"Shoreline restoration project" means a project designed to restore an impaired ecological function of a shoreline. Relief may only be granted by a local government if specific requirements are met, including:

- *the proposed relief is the minimum necessary to relieve the hardship;*
- *the restoration project for which the relief is proposed will result in a net environmental benefit; and*
- *the granting of proposed relief is consistent with the objectives of the shoreline restoration project and consistent with the master program.*

Local governments may not grant relief from master program standards for shoreline restoration projects that are mitigation measures required of a project proponent to obtain a development permit.

The application for relief must be submitted by the local government to the DOE for approval or disapproval. The application review must occur during the DOE's normal review of a shoreline substantial development permit, conditional use permit, or variance. If a permit is not required for the restoration project, the DOE must conduct its review when the local government provides a copy of a complete application and all necessary supporting information.

Staff Recommended Change:

- Add a definition for structural shoreline stabilization, as follows: Structural Shoreline Stabilization: Means for protecting shoreline upland areas and shoreline uses from the effects of shoreline wave action, flooding or erosion that incorporate structural methods, including both hard structural shoreline stabilization methods and soft structural shoreline stabilization measures.
- Re-label 'soft shoreline stabilization' as it is used and defined 'soft structural shoreline stabilization'.
- Revise Section 83.300 to address HB 2199, as follows: If shoreline stabilization measures pursuant to any action required by this Chapter, or intended to improve ecological functions result in shifting the OHWM landward of the pre-modification location and result in the expansion of the shoreline jurisdiction on any property other than the subject property, the City shall notify the affected property owner and may propose to grant relief from additional or more restrictive standards and use regulations resulting from the shift in OHWM. The proposal to grant relief must be submitted to the Department of Ecology under the procedures established in Section 141.70.5. If approved, the agreement shall be recorded in a form approved by the City Attorney and recorded in the King County Recorder's Office.

Topic: Boating Facilities

DOE Comment:

- The City should clarify if Section 83.290 (Marinas & Moorage Facilities…) are "Boating Facilities" as referenced in WAC 173-26-241.
- Pier/dock standards applicable to multi-family moorage should be moved from the single-family Residential section to the Boating Facility section of the SMP.

Staff Recommended Change: Add the following definition of **Boating Facilities:** Facilities providing boat moorage space, fuel, or other commercial services. As used in this Chapter, boating facilities refer to the following use listings: Piers, Docks, Moorage Buoys, Boatlifts and Canopies serving Attached, Stacked and Detached Dwelling Units and Marinas and Moorage Facilities Associated with Commercial Uses.

Topic: Commercial Uses

DOE Comment: It is not clear how preference has been given to water-dependent commercial uses within section 83.170. Also, section 83.210 (Commercial Uses) also does not provide a clear preference for water-dependent uses. Ecology suggests that the City consider adding a "General" heading to section 83.210 (Commercial Uses) that provides a clear preference for protection and encouragement of water-dependent uses over non-water dependent uses.

Staff Response: It is important to note that Kirkland's shoreline already contains a significant number of water-dependent uses that are anticipated to continue along the shoreline.

Staff has responded to State guidance for shoreline preferred uses in its goals and policies section, both in SMP-1.3 and the goals and policy provisions addressing commercial uses contained under SMP-7. These goals and policies have been implemented in the regulations by:

1. Allowing a broad range of water-dependent uses in all shoreline environments.
2. Limiting non-water oriented commercial development as follows:
    a. If the site is physically separated from the shoreline by another property or public right of way.
    b. Part of a mixed-use project that includes water-dependent uses and requires public access.

Staff Recommended Change: None, unless further discussions with Ecology identify the need for amendments.

Topic: Recreational Uses

DOE Comment: It is not clear how preference has been given to water-dependent recreational uses within section 83.170 or 83.220?

Staff Response: It is important to note that Kirkland's shoreline already contains a significant number of water-dependent uses that are anticipated to continue along the shoreline.

Staff has responded to State guidance for shoreline preferred uses in its goals and policies section, both in SMP-1.3 and the goals and policy provisions addressing recreational uses contained under SMP-18.

Staff Recommended Change: None, unless further discussions with Ecology identify the need for amendments.

Topic: Residential Uses

DOE Comment: Any Residential use allowed through the proposed SMP should be defined within the Master Program. Within the SMP, section 83.170 lists the following Residential Uses: Detached Dwelling Units, Accessory Dwelling Units, Detached, Attached or Stacked Dwelling Units, Houseboats, Assisted Living Facility, and Convalescent Center. With the exception of Houseboats, all of these Residential Uses are allowed in at least one SMP Designation, but are not defined within section 83.80 or 83.200. If allowed by the SMP, definitions will need to be added to ensure consistent evaluation of the variety of Residential Uses the City will be allowing.

Staff Response: Staff has approached definitions by attempting not to duplicate definitions that are already contained elsewhere in the Zoning Code. In this case, the following definitions are already contained in Chapter 5 of the Zoning Code:

- Accessory Dwelling Unit – A subordinate dwelling unit added to, created within, or detached from a single-family structure, that provides basic requirements for living, sleeping, eating, cooking and sanitation.

- Convalescent Center – Facilities for patients who are recovering from an illness, or receiving care for chronic conditions, mental or physical disabilities, terminal illness, alcohol or drug in-patient treatment. Care may include in-patient administration of medicine, preparation of special diets, bedside nursing care, and treatment by a physician or psychiatrist. Out-patient care is limited to prior patients only.

- Dwelling Unit, Attached – A dwelling unit that has one or more vertical walls in common with or attached to one or more other dwelling units or other uses and does not have other dwelling units or uses above or below it.

- Dwelling Unit, Detached – A dwelling unit that is not attached or physically connected to any other dwelling unit or other use.

- Dwelling Units, Stacked – A dwelling unit that has one or more horizontal walls in common with or adjacent to one or more other dwelling units or other uses and may have one or more vertical walls in common with or adjacent to one or more other dwelling units or other uses.

Staff Recommended Change: Add the terms to the definition list and refer to Chapter 5.

A. Public Comments

General Issues

Topic: Timing

Public Comments: Request extension of time frame for adoption of new SMP provisions to allow property owners additional time to review and respond to proposed provisions (KLA and numerous property owners).

Staff Response: Staff is continuing to speak and meet with KLA and other property owners and did request a delay in the Planning Commission and Houghton Community Council deliberation in order to provide additional opportunity for interested parties to submit additional comments for the Planning Commission and Houghton Community Council to consider.

Staff Recommended Change: Continue to work with involved parties to identify key issues and resolve issues.

Topic: Science

Public Comments: Continuing concerns about the validity of the science as a foundation for regulations (Richard Sandaas)

Staff Response: One commenter noted that "the body of science and research is not complete, contains suppositions and hypotheses, is sometimes contradictory, and cannot be applied broadly to all shoreline locations on Lake Washington." Except for the last item in the list, the statement is true. However, this same statement applies to every body of science and research – research is never complete, biological or even physical systems are never completely understood, scientific research is necessarily predicated on a series of hypotheses, and results are sometimes contradictory, either because the conditions are different in different studies, the methods are different, there was human error in interpreting the results, or any other number of reasons. This will always be a challenge when making policy decisions based on science. However, this does not mean that progress is not being made in the understanding of basic underlying ecosystem-wide processes and ecological functions. Even without the growing body of Lake Washington-specific information, a great deal of legitimate policy can be constructed just on these more universal principles that operate in and along all waterbodies.

Further, the State has provided specific direction in use of available science for development of SMPs. The State Guidelines state that SMPs should "At a minimum, make use of and, where applicable, incorporate all available scientific information [emphasis added], 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 Guidelines also say that "The context, scope, magnitude, significance, and potential limitations of the scientific information should be considered." Application of this direction to the SMP has resulted in specific regulations that allow an appropriate amount of flexibility when consistent with other requirements of the Guidelines (such as the requirement to employ mitigation sequencing, minimize the extent of shoreline modifications, consider soft stabilization techniques before harder measures, etc).

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 (these agencies are all considered to be reliable sources of science. 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. Certainly there are unanswered questions, and there will likely always be. 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. Meanwhile, local scientists are annually conducting studies intended to further our understanding of various developments' impacts on ecological functions, as well as on specific species. At this juncture, many of the studies are showing that juvenile salmon are adversely affected by shoreline modifications, although the exact mechanisms have yet to be determined.

It is also important to note that the apparent focus on studies related to Chinook salmon is a result of two things. 1) The 1999 listing of Chinook salmon (as well as bull trout, and more recently steelhead) has triggered a lot of local research by scientists (WDFW, USFWS, NMFS, U.W.), and planning activity by the municipal community (WRIA 8, Puget Sound Partnership). 2) In general, salmon are 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, for <u>all</u> native species of fish and wildlife.

For example, whether or not sandy beaches can be constructed along the entire City of Kirkland shoreline is a narrow issue, and is only one potential objective of any regulatory or restoration effort that targets only juvenile chinook salmon. The SMP, as directed by the Guidelines, must take a larger view and consider how developments and shoreline modifications may be unnecessarily and adversely affecting those ecosystem-wide processes that may in some situations lead to formation of sandy beaches, or gravel or cobble beaches. (Note: there are sandy beaches in areas of Kirkland, such as in Juanita Bay and at some waterfront parks, and in the PAA to the north. Further, studies also show that gravel can be a preferred substrate – juvenile salmon preferences change based on time of day and size of fish) The regulations are intended to protect, and where appropriate restore, processes and functions. Along Lake Washington shorelines, one of the important processes relates to the patterns of water movement and action on the shoreline, and the resulting movement of substrates –bulkheads in high-energy locations incontrovertibly deprive the lake of a source of beach material, increase

erosion at the toe of the bulkhead, and deepen water at the face of the bulkhead, thus eliminating shallow-water habitat and a shoreline gradient that could attenuate wave energy before it reaches the bulkhead face.

Staff Recommended Change(s): None

Topic: Minimum requirements of State

Public Comments:

- Concerned that City is doing more than what is required to meet the State requirements. Recommend that a side-by-side comparison be provided not only to Council members but also to Kirkland residents. (Pascal Stohlz).
- Measures are draconian (David Zylstra).

Staff Response: Staff believes that the City is not extending its authority beyond the minimum requirements of the SMA and Guidelines, but recognizes that the new regulations impose new standards affecting private property that are of concern to property owners. There are provisions within the SMA and Guidelines that are very prescriptive, and likewise there are provisions that provide the City with broader latitude in how it responds to general requirements. The City has posted the submittal checklist that Ecology has prepared, which summarizes many of the key provisions and provides references to the SMP provisions that respond to a specific requirement. Staff encourages participants to look at the City's website for this information.

Staff Recommended Change: Changes, as needed, in response to specific issues identified by participants will be examined.

Topic: Reverse of burden of proof

Public Comments: Concern that property owners now have burden of proof (e.g. that bulkhead is necessary or addition to pier is needed) (Jim Tosti).

Staff Response: While staff understands this concern, staff believes that there has already been a burden of proof imposed on property owners by either the City or other state and federal agencies involved in the permitting of piers and shoreline stabilization provisions. Similar to critical areas, the shorelines are a natural system with functions and processes that can be affected by development activity. As a result, in many cases special review is needed to ensure that development impacts are avoided, minimized or appropriately mitigated. Both state and federal agencies are involved in the review of piers and shoreline stabilization, including new and replacement structures as well as repairs. Under these existing provisions, applicants are required either to comply with special standards, such as the RGP-3 standards for permits or the Programmatic Biological Evaluation for shoreline stabilization measure, or, if applicants wish to deviate from these established provisions, are required to submit biological studies and go through a more thorough review to assure that the proposal will not likely cause adverse affects. The standards proposed in the updated SMP are consistent with this existing approach and are intended to improve consistency with state and federal permitting, while still providing flexibility to vary from standards, with additional review.

Staff Recommended Change: Changes, as needed, in response to specific issues identified by participants will be examined.

Topic: Flexibility

Public Comments: Flexible regulations are needed to gain support from affected shoreline property owners (Richard Sandaas).

Staff Response: The draft provisions are not designed as a one-size fits all approach. Care has been taken to evaluate and respond to the special circumstances of each geographic area of the City. Shoreline stabilization provisions, in particular, require evaluation of individual site characteristics to guide decision-making. In addition, the draft provisions contain areas of flexibility, including: shoreline setback reductions, options for pier and docks replacements, and provisions allowing alternative compliance for several different standards, including tree replanting and shoreline riparian plantings. It is unclear what additional flexibility is requested.

Staff Recommended Change: Changes, as needed, in response to specific issues identified by participants will be examined.

Topic: Surface Water Management

Public Comments:

- Stormwater should be addressed as part of plan (Peter Davidson).
- Higher densities, increases in impervious surfaces and vehicle miles traveled within the City have impacted water quality in streams and Lake Washington. A program to deal with these issues and a way of financing should be adopted concurrently with the SMP update process (Richard Sandaas).
- Impacts are handled under current stormwater regulations (Jim Tosti).
- SMP does not address stormwater runoff that is allowed to enter into lake unfiltered (Tony Fassbind).
- Addressing storm water and non-point pollution would have far more beneficial impact on the lake than speculative benefits of landscaping and bulkhead removal. A program to deal with stormwater runoff and non-point pollution and a way of financing should be adopted concurrently with the SMP update process (Richard Sandaas).
- City should consider other real and serious issues that likely further impact the true threats to fish habitat and health of our shoreline, such as stormwater runoff and non-point pollution (Juanita beach had to be closed this summer for many days. If the beach/bay was deemed unsafe for human it was likely unsafe for fish as well) (Pascal Stohlz).

Staff Response: Staff agrees that stormwater management is a key concern for Kirkland, though it should be noted that water quality is presently not a key habitat limiting factor within Lake Washington. Kirkland is undertaking many different activities that address stormwater issues throughout the City. Since stormwater is a watershed-wide issue and extends beyond the shoreline jurisdiction, it is addressed through other

programs at the City, including implementation of the National Pollutant Discharge Elimination System (NPDES). The NPDES is a federal program that regulates the discharge of stormwater and wastewater to waters of the State, such as Lake Washington. Under NPDES, the Washington State Department of Ecology issued the Western WA Phase II Municipal Stormwater Permit on February 16, 2007 under authority delegated to it by the US Environmental Protection Agency, pursuant to the Federal Clean Water Act (CWA).

As part of the implementation of this permit, the City has adopted a 2009 Stormwater Management Program (SWMP) that details actions that the City of Kirkland will take between January 1, 2009 and December 31, 2009 to maintain compliance with conditions in the Permit, including public education and outreach, public involvement and participation, illicit discharge detection and elimination, controlling runoff from new development, redevelopment and construction sites, and pollution prevention and operation.

The permit requires Kirkland to adopt certain alterations to surface and stormwater portions of the Kirkland Municipal Code, and to adopt revised development regulations equivalent to the 2005 Ecology Stormwater Management Manual for Western WA. The proposed changes will go before the City Council in October 2009, and if adopted, the new design requirements could become effective as soon as January 1, 2010.

Staff recommends that parties interested in the new design requirements review the information available at the following link:
http://www.ci.kirkland.wa.us/depart/Public_Works/Storm___Surface_Water/Stormwater_Update.htm

The proposed stormwater regulations do contain provisions that address stormwater management, including:

- Basic water quality treatment of stormwater leaving a site, where the total "effective" (new and existing) pollution generating impervious surface is 5,000ft2 or more, or the total of pollution generating pervious surface is 0.75ac or more. (Note: this may exempt many single family construction projects from this requirement).
- Erosion control during construction activities; and
- Soil amendment and use of low impact development measures.

Flow control of stormwater leaving a site would generally not be required, since direct discharge to Lake Washington is permitted for properties near the Lake.

The proposed SMP references these requirements. In order to address flow control issues, the proposed incentives for reduction of the shoreline setback address several mechanisms related to flow control, such as use of rain gardens.

In addition, it should be noted that the City has enacted a Stormwater Utility Fee that is estimated to generate over $6 million dollars between 2009 and 2014 to fund capital improvements to stormwater facilities and related activities in order to improve water

quality and reduce flooding. Projects funded through this fee can be evaluated as part of the Capital Improvement Program adopted by the City (see http://www.ci.kirkland.wa.us/Assets/Finance+Admin/Finance+Admin+Images/2009-2014+CIP+Project+Detail.pdf)

The Restoration Plan component of the SMP recognizes this existing program to complete improvements that benefit water quality.

Staff Recommended Changes: None

Topic: Attain measurable environmental benefits

Public Comments: City should embark on pilot programs in city owned shoreline where the restoration called for in the regulations would be constructed (Richard Sandaas).

Staff Response: The City has prepared a Restoration Plan component of the SMP that identifies projects to be accomplished on City property and establishes a goal of completing several specifically identified projects over a course of seven years. The projects identified in the restoration program include many of the key components that are contained in the new regulations, including: use of softer shoreline stabilization measures, installation of vegetation at the shoreline edge, and conversion of decking materials to grating. Some projects have already been completed.

Topic: Costs

Public Comments:

- Concerned that there is no limit on what we have to pay to do some of these things. There should be a financial cap on the cost (Gary Gelow).
- Concerned about costs (Jack Rogers and others).
- Private shoreline owners will bear extraordinary costs over the time these regulations are in place (Richard Sandaas).
- Are the expenses we are incurring for this program justified compared to the likely outcome? Are the expenses we will be incurring to monitor this program justified compared to the likely outcome? Concerned that because of diversity of lots, every case the provisions will have to be negotiated (Pascal Stolz).
- Concerned that costs are not being carried by those who would benefit under the program (Pascal Stolz).

Staff Response: Staff understands that there may be concerns about cost increases. At the same time, property owners would not be required to comply with new provisions unless they sought to undertake improvements to specific improvements, at which time there would already be an outlay of capital costs and, in the case of shoreline stabilization, the regulations would be focused on evaluation of alternative measures.

Many of the new provisions (such as vegetation or lighting) require improvements with minimal cost. With regard to shoreline stabilization, the study of the necessity for hard shoreline stabilization measures is already analysis that needs to occur as part of state and federal permitting of these structures. The City has minimized the requirements for

submittal of a geotechnical analysis, where possible, while still complying with State Guideline requirements for this type of study. According to the information compiled by the City of Seattle in preparing their Green Shorelines handbook, many of the costs of installing a softer shoreline stabilization measure are comparable to installing a replacement hard shoreline stabilization measure, with the possible exception of maintenance to ensure that the beach area is replenished over time. For piers and docks, many of the costs of newer decking materials are comparable to wood, when you consider long-term maintenance costs.

Staff needs more information to better define what the specific concerns are on this topic.

Staff Recommended Change(s): **In** response to specific concerns addressed by KLA, staff has added some provisions addressing cost to Section 83.360, as follows:

a. Where development activities would adversely impact shoreline ecological functions, the City may consider whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of the proposed disturbance, including any continued impacts on functions and values over time. In this circumstance, the applicant is responsible for the burden of proof.

b. Where mitigation is required, the City may consider alternative mitigation measures that may be less costly than those prescribed in this Chapter, provided that the alternatives are as effective in meeting the requirements of no net loss. In this circumstance, the applicant is responsible for the burden of proof.

Topic: Function Measurement

Public Comments: Concerns about how function is measured, and to what dated reference point an assessment of "low function" is related. Request analysis of his property (Jim Tosti)

Staff Response: In the original analysis report, assessments of "high", "medium", and "poor/low" function were assigned to different reaches of Kirkland's shoreline as a way to rank each reach of the City's shoreline relative to other reaches within the City. As summarized in Section 5.3.1 of the December 2006 *Final Shoreline Analysis Report*, qualitative and quantitative indicators of different specific functions were assessed. For example, each reach was evaluated relative to other reaches based on qualitative condition of habitat or potential for organic matter recruitment (e.g., leaves, twigs, other organic debris) and quantitative factors such as amount of shoreline armoring or overwater cover. Results indicated, as expected, that the Yarrow Bay Wetlands area is high functioning and the downtown area is low functioning relative to each other currently, not to any specific date in the past. While "function" as a single and discrete parameter cannot be measured with existing tools, basic understanding of scientific principles and ecosystem processes allows us to examine a number of contributing factors to function, which serve as proxies. This assessment provided support for

assignment of environment designations, one of the earliest steps of the SMP development process.

For purposes of the cumulative impacts assessment, the point of comparison for future activities and developments is the date of the Final Shoreline Analysis Report (1 December 2006).

Staff Recommended Change(s): None

Topic: Applicability of RCW 90.58.270

Public Comments: RCW 90.58.270 appears to exempt certain provisions from applying to bulkheads and other structures installed prior to 1969 (Barry Powell).

Staff Response: The Department of Ecology has provided information to the City interpreting this provision (see Attachment 11). Based upon their review of the background regarding this provision, Ecology would suggest that the local SMP's provisions regarding nonconforming structures would apply to future development proposals of such structures, just as they apply to any nonconforming structure built before enactment of the SMA.

Staff Recommended Change: None.

Topic: Organization of the SMP

Public Comments: Place General Regulations first so the reader gains an understanding of the requirements for all development, before reading the specific use and modification regulations (Futurewise).

Staff Response: Once the Planning Commission and Houghton Community Council make their recommendations on the SMP content, staff would recommend that further review be done to evaluate the order to different components to make sure that sections should not be relocated within the document and check the accuracy of all internal referencing.

Staff Recommended Change: Future reorganization of different sections should be explored. This would not affect the content of the regulations.

Chapter 83

Authority and Purpose

Topic: General Provisions

Public Comments:

- Add a statement to Section 83.20 noting what kind of activity is subject to the regulations (Futurewise).
- Add policy statements from RCW 90.58.020 to Section 83.20.

Staff Response:

- Staff concurs with the recommendation to note what kind of activity is subject to the regulations.
- Staff believes that the policy intent of RCW 90.58.020 is sufficiently summarized in the Introduction Section of the Goals and Policies component of the SMP.

Staff Recommended Change: Amend Section 83.20 to read as follows: Add a new section to 83.20 that reads as follows: The requirements of this Chapter apply to uses, activities and development within shoreline jurisdiction.

Topic: Shoreline Jurisdiction and Maps

Public Comments:

- Clarify Section 83.90 (Futurewise).
- Clarify Section 83.20(Futurewise).
- Address stream deltas (Futurewise).
- Recommend including the buffers for wetlands within the shoreline jurisdiction (Futurewise).
- Recommending adding a provision to Section 83.90 addressing how to interpret shoreline environment boundaries when a property line moves (Futurewise).

Staff Response:

- None of Kirkland's streams meet the definitions of shorelines and, as a result, the inclusion of stream deltas to this section is not an accurate description of Kirkland's shoreline jurisdiction. Streams within 200-foot of the shoreline are regulated.
- The State Guidelines specifically allow for the protection of critical area buffers to continue pursuant to RCW 36.70A.060(2) (GMA). The City's critical area buffers were approved as meeting the requirements of best available science at the time that they were adopted, and are required to be updated by 2011, at which time a comprehensive evaluation of critical area regulations will occur.

Staff Recommended Change: None.

Topic: Shoreline Environments

Public Comments: Recommends addressing management policies for shoreline environments (Futurewise).

Staff Response: The Management Policies for the shoreline environments are found in the Goals and Policies segment of the SMP.

Staff Recommended Change: None.

Definitions

Topic: Definitions

Public Comments:

- Concern about use of 'significant' terminology in provisions, which allows insignificant degradation to occur without mitigation (Futurewise).
- The definition of upland would include wetland areas (Futurewise).
- The definition of pilings should address docks and other structures (Futurewise).
- The definition of riparian area should address fish and wildlife habitat (Futurewise).
- As used in Chapter 83, piling specifically refers to the piles underneath a pier. A definition of moorage piling is also needed to address other pilings that may be associated with docks and other structures.
- Recommend referencing datum in definition of OHWM (Alisa Bieber, WDFW).

Staff Response:

- The definition for significant vegetation removal is the same as is provided in WAC 173-26-020. Further, City staff feels that requiring mitigation only for "significant vegetation removal" is appropriate for Kirkland and complies with the SMA requirements.
- The Shoreline Inventory identified a lack of existing riparian vegetation along the City's shoreline, except for the large wetland complexes within the shoreline jurisdiction. Activities within wetlands and streams that might impact existing vegetation are addressed in the proposed regulations. In other areas of the shoreline, vegetation removal is addressed through tree management provisions.
- The Cumulative Impacts Analysis discusses this issue and concludes that "no net loss" of shoreline ecological functi ons is achieved with the proposed SMP.

Staff Recommended Change:

- Modify the definition of wetland as follows: **Upland**: Generally described as the dry land area above and landward of the OHWM, but not including wetlands.
- Add a definition of moorage piling, as follows: A piling to which a boat is tied up to prevent it from swinging with changes of wind.
- Modify the definition or riparian area to read as follows: 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, habitat and other riparian features that are important to both riparian forest and aquatic system conditions.
- Add reference to datum.

Uses and Activities in Shoreline Environment

Topic: Use Table

Public Comments:
- Recommend screening each section of the SMP for use and permit level provisions and move them to the use table (Futurewise).
- Address following issues (Futurewise):
    - Empty entry under Mining has permit levels listed.
    - Drop the nonwater-dependent commercial use listing, since it is already addressed by nonwater-oriented.
    - Add a catch-all entry for water-dependent commercial uses and address commercial uses besides just retail.
    - Move Hotel/Motel and Entertainment and Cultural Facilities to the nonwater-oriented category and allow in the different environments appropriately.
    - Change the name of Institutional uses to Community Services and moved to the Commercial section, which should be retitled to Commercial and Community Service.
    - Clarify whether Industrial Uses are prohibited in the Aquatic designation.
    - Add a catch-all entry for water-dependent recreational uses.
    - Concerns with two entries for piers/docks.
    - Some recreational use entries seem to be blank for Aquatic.
    - Re-categorize the Transportation section to address water-oriented and nonwater-oriented.
    - Add a catch-all entry for water-dependent transportation uses.
    - Re-categorize the Utilities section to address water-oriented and nonwater-oriented.
    - Address qualifications that may apply the modifications portion of the table.
    - Format issues – recommend printing in portrait format.
    - Recommend changes to address limitations on non-water oriented commercial uses.

Staff Response:
- Many of the concerns raised address terminology issues that are not specific to the Shoreline Master Program and are proposed as currently drafted to be consistent with terminology used in other regulatory provisions, such as the Zoning Code provisions.
    - For instance, institutional uses in the Zoning Code are specifically defined to include the following uses: schools, churches, colleges, universities, hospitals, parks, governmental facilities and public utilities.
    - In addition, as used in the Zoning Code and now also proposed in the SMP, the listing "Detached, Attached or Stacked Dwelling Unit" refers to

multifamily projects where there are multiple dwelling units on one piece of property.
  - Commercial uses are classified generally into two broad categories: retail and office uses. The SMP is using terminology that is consistent with the current zoning code provisions, and consistency with other regulatory provisions is required under the State Guidelines and is needed for ease of administration.
- The SMP contains site and building design provisions that are intended to assure that hotel/motel and cultural facilities are designed to meet the definition of water-enjoyment uses. See KZC 83.390.
- Staff believes that the Transportation section has been categorized accurately.
- Staff believes that uses within the Utilities Section have been appropriately limited, where there are non-water oriented, in response to the provisions contained in WAC 173-276-231(3)(l).
- City staff believes the use table cannot and should not cover all the permit level information. It is there to show which uses are allowed where, but a project proponent must go to the applicable section to get the more specific permit level information. This organizational format is congruent with most land use regulations that employ a summary chart to identify allowable uses and also include standards (generally in other code sections) to address aspects of the uses.

Staff Recommended Change:
- Delete the nonwater-dependent commercial use listing, since it is already addressed by nonwater-oriented.
- Add a catch-all entry for water-dependent commercial uses.
- Clarified that Industrial Uses are prohibited in the Aquatic designation.
- Add a catch-all entry for water-dependent recreational uses.
- Modified the Use Table addressing when non-water oriented commercial uses may be permitted to be consistent with WAC 173-26-241(3)(d)

Use Specific Regulations

Topic: Shoreline Setbacks

Public Comments:
- The Natural environment should include buffers and setbacks wide enough to protect their shoreline functions (e.g. 100 to 150 feet) (Futurewise).
- Need to adopt science-based buffers that will protect the lakes and streams Only water-dependent uses and activities should be allowed in the buffer and vegetation areas. Natural areas should have science-based buffers. (Lori Eagle).
- Change setbacks for water-enjoyment uses to be the same as non-water oriented uses (Futurewise).
- Question about what setbacks are along Lake Ave. Questions about grandfathering. (Jim Tosti).
- Questions about criteria for permitted increases in height allowed under Section 83.190.4.c.a (Jim Tosti).
-

Staff Response:

- The Management Policies for the shoreline environments are found in the Goals and Policies segment of the SMP.
- The critical areas within the Natural Environment are protected by buffer requirements, which are much more protective than the shoreline setbacks. Given the existing location of wetlands and streams, it is anticipated that the buffer requirements will govern where development occurs relative to the shoreline in the Natural Environment.
- Setbacks along Lake Ave south of Lake Ave W Street End Park are proposed as follows: If dwelling units exist immediately adjacent to both the north and south property lines of the subject property, then the shoreline setback of the primary structure on the subject property is the average of the shoreline setback of these adjacent dwelling units, but at a minimum width of 15 feet. If a dwelling unit is not adjacent to the property, then the setback of the adjacent property without a dwelling unit for the purposes of determining an average setback shall be based upon 30% of the average parcel depth.
- Concerning grandfathering, any dwelling unit can remain or be remodeled inside, but if it is to be voluntary replaced, it would need to comply with new setback standards. A nonconforming structure can be expanded into the shoreline setback up the 10% of the total gross floor area of the existing home provided that the addition is not closer to the shoreline than the existing home. Any structure damaged due to fire or natural causes can be rebuilt.
- Concerning the permitted increase in height on page 46 for subsection a), the regulation applies to lots in the Natural environment area of Yarrow Bay that are significantly constrained by wetlands and wetland buffer requirements. Property owners most likely must go through a Reasonable Use Permit process found in Section 83.500.10 on page 112. This permit process has criteria. The height increase would be 5′ from 25′ up to 30′ in height. Note that the draft SMP include Zoning Code amendments to allow a height increase from 25′ to 30′ for the single family area north of the CDB, including Lake Ave West, provided that the shoreline setback is met. This increase in height is one of the new provisions to help offset the increase in the shoreline setback

Staff Recommended Change: None.

Topic: Transportation

Public Comments:

- Recommend using mitigation sequencing to reduce or avoid the impacts by providing details specific to transportation issues (Futurewise).
- Recommend adding the following language: Facilities should be located out of shoreline jurisdiction unless there is no feasible alternative. When necessary, they should be located as far landward as possible (Futurewise).
- Recommend adding the following language: To prevent secondary impacts from transportation projects, the disposal location of excess materials and waste materials shall be disclosed in submittal materials (Futurewise).

- Additional standards recommended to address the peculiarities of linear transportation facilities (Futurewise).
- Recommend grouping linear and non-linear standards (Futurewise).
- Additional standards may be needed to cover a greater range of transportation facilities (e.g. freeways and airports) (Futurewise).
- Recommending addressing access roads and driveways (Futurewise).

Staff Response:

- Mitigation sequencing is addressed in Section 83.360 and would apply to transportation projects. The provisions do refer to the mitigation sequencing section contained in Section 83.360. Staff has opted to use a general mitigation sequencing section in order to minimize repetition throughout the document. Many of the additional standards suggested would be addressed through consideration of mitigation sequencing.
- Staff believes that Section 83.230.1 and 5 adequately addresses location of transportation facilities.
- Staff believes that Section 83.230.2 adequately addresses construction impacts.
- The policies and regulations in Section 83.230 adequately restrict location and design of all transportation facilities and require mitigation for all adverse impacts. City staff does not think it is necessary to distinguish between linear and non-linear facilities as stated, because linear facilities are called out in several places as Arterials, Collectors, and Neighborhood Access Streets and Bridges.
- Several comments address transportation facilities that do not exist nor are planned for or reasonably feasible within Kirkland's shoreline jurisdiction, such as airports. The 520 freeway system is not located within the City's shoreline jurisdiction and it appears that plans for widening this roadway would also not extend to within the City's jurisdiction.
- Access roads and driveways do not fall under the Transportation use section. They are accessory uses to other uses, such as residential and commercial, and thus would be subject to those specific use regulations.

Staff Recommended Change: Add the following provisions to Section 83.230:

a. Construct facilities that cross streams to allow passage of fish inhabiting the stream or which may inhabit the stream in the future.

b. Construct facilities within the 100-year floodplain to allow for water pass-through.

Topic: Utilities

Public Comments:

- Recommend additional standards to address to deal with utility impacts (Futurewise).
- Recommend addressing utility services to individual uses (Futurewise).

Staff Response:

- The provisions do refer to the mitigation sequencing section contained in Section 83.360. Staff has opted to use a general mitigation sequencing section in order to minimize repetition throughout the document. Many of the additional standards suggested would be addressed through consideration of mitigation sequencing.
- The standards do address major facilities under the utility production and processing listing and limits these uses as conditional uses.
- Footnote #24 of the Use Table states that "This use may be allowed provided there is no other feasible route or location.." City staff feels that this provision, combined with the Utilities regulations in Section 83.240 and In-Water Construction regulations in Section 83.430, as well as Mitigation Sequencing in Section 83.460 adequately restrict utility uses.
- Staff believes that some comments, such as those concerning utility main lines, are not appropriate, given existing main lines that are found throughout the shoreline area.

Staff Recommended Change: Add the following provisions to Section 83.240:

a. Construction of pipelines placed under aquatic areas shall be placed in a sleeve in order to avoid the need for excavation in the event of a failure in the future.

b. Construction located near wetlands and streams shall use native soil plugs, collars or other techniques to prevent potential dewatering impacts.

Topic: Subdivisions

Public Comments:

- Recommend adding policy to protect critical areas during subdivision (Futurewise).
- Question whether view corridor is required in the Residential – L Environment (Jim Tosti).

Staff Response:

- Kirkland's Critical Area regulations required that applicants either dedicate development rights, air space, or grant a greenbelt protection or open space easement to the City to protect sensitive areas and their buffers.
- As stated the section referenced by this provision (83.420), this section does not apply to divisions in the Residential-L environment.

Staff Recommended Change: None.

Shoreline Modification Regulations

Topic: Shoreline Stabilization

Public Comments:

- Recommend that the preferences need to be implemented by requiring the less impacting methods and structures be determined not to work before the more impacting ones are used (Futurewise).
- Bulkhead regulations are not feasible or practical – they are necessary to contain property that was developed with the lowering of the land and which is exposed to significant storm impacts (Richard Sandaas).
- Regulations need to ensure that principles of RCW 90.58.100 are met (Richard Sandaas).
- Clearly the large storms cause major damage compared to our annual storms. If the city assumes a three year storm (occurs only once in 3 years on average) is only 25 to 30 mph and shoreline protection is not allowed for stronger winds, when these stronger winds do occur, property damage is assured (Allen Schwartz).
- Recommend that regulations contain a description of the threat (wave) criteria and the success criteria (protect property) (Allen Schwartz).
- Provisions should address HB 2199, which addresses changes in the shoreline boundary (Futurewise).
- Why have bulkheads emerged as a big issue today? What about the exemption of certain structures from the SMA if placed prior to December 4, 1969 (RCW 90.58.270)? (Barry Powell)
- Why is the burden of proof for need being shifted from government to the property owner with respect to shoreline stabilization? (Pascal Stolz and Jim Tosti)
- The City should conduct pilot projects on public lands (Richard Sandaas).
- SMP should specify contents of the needs assessment used to evaluate whether a hard shoreline stabilization can be replaced with another hard shoreline stabilization (Alisa Bieber, WDFW).

<u>Staff Response:</u>

- Bulkheads have "emerged as a big issue" as awareness has increased over time of bulkheads' (or other hard structural shoreline stabilization) effects on ecosystem-wide processes (defined in the WAC as the "suite of naturally occurring physical and geologic processes of erosion, transport, and deposition…"). Bulkheads are intended to halt erosion of shoreline property, but in the long run they often result in erosion of the material immediately waterward of the bulkhead, increasing water depth at the bulkhead face and resulting in loss of the natural wave energy attenuation functions of the shallow-gradient beaches. These changes in the amount and type of material mobilized affect the formation of shallow-water habitats and beaches elsewhere in the system, and the composition and distribution of the remaining substrate material, which thereby influences the availability and suitability of habitat for aquatic vegetation, invertebrates, fish and other aquatic life.
- Staff believes that the proposed regulations in Section 83.300 do address the preferences for different shoreline stabilization techniques that are established in the WAC Guidelines.
- The WAC Guidelines have some very prescriptive standards with respect to shoreline stabilization that the City must address, including:

- **Allow structural shoreline modifications only where they are demonstrated to be necessary to support or protect an allowed primary structure or a legally existing shoreline use that is in danger of loss or substantial damage or are necessary for reconfiguration of the shoreline for mitigation or enhancement purposes*.*** This indicates that structural shoreline modifications, which include bulkheads, are allowed when they support or protect an allowed primary structure or a legally existing shoreline use that is in danger of loss or substantial damage. A shoreline stabilization measure cannot be sought to protect land under the provisions.
- **The applicant must submit adequate evidence that the erosion is caused by wave action and not other sources, such as upland erosion.** The Guidelines specify a geotechnical report for new structures.
- **The rate of erosion from waves must be such that the structure is in danger in the foreseeable future (within 3 years).** Under the guidelines, the danger must exist within 3 years.
- **When need is demonstrated, the applicant shall utilize soft measures unless those are demonstrated to be insufficient to protect primary structures.** The guidelines specifically give priority to soft over hard measures.
- **Reduce adverse effects as much as possible, limiting the size and extent of the shoreline stabilization measure.**
- **Give preference to modifications types that have a "lesser impact on ecological functions" and require mitigation of identified impacts that result.**
- **It is important to note that under the Guidelines, replacement structures must demonstrate all of the above and not encroach waterward of the OHWM, except for residences built before 1992.**

The proposed regulations have been crafted to respond to these provisions. The Washington Department of Ecology is the more appropriate party to respond to questions about how the 2003 Guidelines were crafted. However, the City's existing SMP already requires that applicants show that "A bulkhead or other shoreline protective structure … is needed to prevent significant erosion of the shoreline; and … The use of vegetation will not sufficiently stabilize the shoreline to prevent significant erosion." The new Guidelines require that the City establish more specific provisions for demonstrating need for a bulkhead, but property owners, since the first creation of the City's SMP, have not been able to construct bulkheads without cause.

- Staff believes that the draft provisions are consistent with the principles established in RCW 90.58.100, which states the following: *Each master program shall contain standards governing the protection of single family residences and appurtenant structures against damage or loss due to shoreline erosion. The standards shall govern the issuance of substantial development permits for shoreline protection****, including structural methods such as construction of***

bulkheads, and nonstructural methods of protection [emphasis added]*. The standards shall provide for methods that achieve effective and timely protection against loss or damage to single family residences and appurtenant structures due to shoreline erosion.*

The provisions do not deny the use of shoreline stabilization measures –instead, in keeping with the preferences established in the Guidelines, a process is established to evaluate the most appropriate shoreline stabilization measure to use, given site characteristics and the desire to minimize the adverse effects of shoreline stabilization measures.

- Staff is intrigued by the concepts raised by Mr. Schwartz and has tried to research whether a standard could be designed by contacting state and federal regulators as well as designers of shoreline stabilization measures. Based on this information, staff has learned that designers and reviewers examine a number of site characteristics when determining an appropriate shoreline design, including those features present in the decision tree that has been prepared as part of the draft regulations.

  The regulations also require the submittal of an assessment of erosion potential. Staff believes that this provision provides property owners the opportunity to evaluate historical erosion rates over a long time frame, which would serve to dampen the effect of short term changes from storm events. Historical aerial photograph series can be used to evaluate long-term change as a result of erosion, and this information can be used to establish a site specific erosion rate, which could then be multiplied by a 3-year time frame.

  In certain cases, there may be a need for an engineering study to conduct wave modeling and sediment budgets, but this would still need to be completed on an individual site basis. As a result, staff is recommending that property owners be given the option as to whether to submit this type of engineering study – if they are concerned about the effectiveness of soft measures at their property, a property owner could certainly obtain the services of a coastal engineer to review wave energy and sediment budget issues, but it would not be a required study in every circumstance.

- The Draft Restoration Plan prepared as part of this SMP update includes a long list of prioritized projects intended to improve ecological functions along the City's shoreline (see Section 6.2) (includes shoreline stabilization enhancements, as well as projects targeting shoreline vegetation and overwater cover). Most of these projects are located on public park lands, and the City plans to include these in the City's Capital Improvement Program. Several of these are already part of planned projects that are currently in the design phase.
- The provisions do address the components of a needs assessment, which would include:
  a) An assessment of the necessity for hard structural stabilization, considering site-specific conditions such as water depth, orientation of the shoreline, wave fetch, and location of the nearest structure. The

evaluation shall address the feasibility of implementing options presented in Plate XX, given an assessment of the subject property's characteristics.

b) An assessment of erosion potential resulting from the action of waves or other natural processes operating at or waterward of the OHWM in the absence of the hard structural shoreline stabilization.

c) An assessment of the feasibility of using soft structural 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.

d) For all structural shoreline stabilization measures, design recommendations for minimizing impacts.

Staff Recommended Change: Staff is separately recommending that revisions be considered to address concerns about the lack of clarity in the regulations. This does not affect the content, but provisions have been re-ordered and clarified.

Topic: Piers and Docks

Public Comments:

- Recommend streamlining section (Futurewise).
- SMP contradicts prohibition on docks serving residential uses other than single-family residences (Futurewise).
- Recommend adding standard noting that all other uses must be water-dependent or provide public access to have a dock/pier or float (Futurewise).
- Provisions should also apply to pier/docks used for non-mooring purposes (Futurewise).
- Recommend adding a policy addressing the proliferation of piers and docks (Futurewise).
- Concerned about provisions addressing shared docks – this is legislative overreaching and cannot be justified under a property rights discussion (Jim Tosti).
- Concerned about size of allowed new dock/pier dimensions (Jim Tosti).
- Concerned with provisions about replacement/repair of piers and docks (Jim Tosti).
- Recommend when discussing grating to say '40% or greater open area' (Alisa Bieber, WDFW).
- Recommend adding a time period for evaluating when 50% or more of the decking is replaced (Alisa Bieber, WDFW).
- Note that WDFW requires all new decking (including re-decking) to use grated material (Alisa Bieber, WDFW).
- Recommend addressing platform lifts as part of the dock (Alisa Bieber, WDFW).
- Recommend limiting the length of ells or the width of fingers (Alisa Bieber, WDFW).
- Four foot wide pier makes no sense (David Zylstra).

Staff Response:

- While staff shares the concerns about the length of the pier provisions, different sections addressing different uses are recommended to address their particular issues.
- The WAC Guidelines do not prohibit piers or docks serving multifamily or other residential uses – these are permitted under the provisions established for Boating Facilities (see WAC 173-26-241(3)(c)). Different terminology is used in the SMP in order to provide consistency with terminology used in other regulatory provisions, such as the Zoning Code. Staff believes that the provisions are consistent with the WAC standards addressing boating facilities.
- Piers have limited allowances: for single family, for multifamily, as marinas or as public access piers or boardwalks. Per the Guidelines, uses not listed in the SMP will require a conditional use.
- The SMP regulations specifically address public piers and boardwalks, as well as fueling and boat repair in other sections. Industrial uses are prohibited.
- The Goals and Policies section includes more specific policies aimed at reducing overwater coverage. The draft provisions currently address shared use.
- Shared facilities are an effective technique to avoid and minimize impacts associated with overwater structures, a key concept in the new WAC provisions. Specifically in response to these issues the WAC Guidelines require the following: "…master programs should contain provisions to require new residential development of two or more dwelling units to provide joint use or community dock facilities, where feasible, rather than allow individual docks for each residence". Since this section focuses on new residential development, staff will recommending deleting the provision addressing existing residential development.
- The proposed dimensions for new piers follow the Army Corp of Engineer standards (RGP3). (4-ft wide pier is from these provisions). Note that the City can administratively approve different dimensions if approved the Army Corps and WDFW.
- The Planning Commission is looking to mirror the Army Corp of Engineer's pier dimension requirements. If the Corp and Fisheries approve a different standard, the City will approve that standard. A property owner can replace a pier of at least the same size as they currently have and larger if the pier is smaller that the new pier standard.
- The open area specified is a minimum percent and is typical of that currently available.
- Staff explored the concept of a time frame associated with deck replacements, but there were significant concerns about tracking, difficulty in implementation, and other concerns. Typically, decking replacement is needed to occur at one point in time, because decking deteriorates at the same rate. For these reasons, staff is recommending no change.
- Staff has opted to concentrate on improving the nearshore habitat area when significant decking replacement occurs.
- The provisions do address a limit on ell length (26 feet) and finger width (2 feet). These standards cannot be modified.

Staff Recommended Change:

- Add the following definition of **Boating Facilities:** Facilities providing boat moorage space, fuel, or other commercial services. As used in this Chapter, boating facilities refer to the following use listings: Piers, Docks, Moorage Buoys, Boatlifts and Canopies serving Attached, Stacked and Detached Dwelling Units and Marinas and Moorage Facilities Associated with Commercial Uses.
- Revise Section 83.270.1.b.1 as follows: In the following circumstances, a joint use pier shall be required::
    1) On lots subdivided to create additional lots with waterfront access rights.
    2) New residential development of two or more dwelling units with waterfront access rights.

- Revised language addressing 40% open area.
- Addressed platform lifts.

Topic: Dredging

Public Comments:

- Concerns about differences between Use Table and regulations for Dredging activities (Futurewise).
- Recommend adding language indicating that the disposal of dredge material on lands should be considered as fill (Futurewise).

Staff Response:

- The Use Table indicates that dredging may be permitted under a substantial development permit when associated with a restoration or enhancement project. Otherwise, dredging would require a conditional use permit. The regulations contained in Section 83.320 provide further standards. As noted above, City staff believes the use table cannot and should not cover all the permit level information. It is there to show which uses are allowed where, but a project proponent must go to the applicable section to get the more specific permit level information. This organizational format is congruent with most land use regulations that employ a summary chart to identify allowable uses and also include standards (generally in other code sections) to address aspects of the uses.
- The regulations addressing fill would appropriately address disposal of dredge material.

Staff Recommended Change: None.

Topic: Fill and Excavation

Public Comments:

- Recommends adding limitations to use table on where fill and excavation is permitted (Futurewise).
- Recommend either expanding regulations for fill to cover excavation or combining with land surface modification (Futurewise).

- Recommend provisions disclose the location of excess excavation material (Futurewise).

Staff Response:

- The Use Table indicates that fill may be permitted under a substantial development permit when associated with a restoration or enhancement project. Otherwise, fill would require a conditional use permit. The regulations contained in Section 83.340 provide further standards. As noted above, City staff believes the use table cannot and should not cover all the permit level information.
- Staff prefers to keep land surface modification separate from fill provisions. Fill deals with issues in-water while land surface modification deals with typical grading activities located on land.

Staff Recommended Change: None.

General Regulations

Topic: Mitigation Sequencing

Public Comments:

- Concerned that mitigation sequencing provisions goes beyond no net loss (Jim Tosti).

Staff Response:

- This section (83.360) mirrors the new State Guideline provisions for No Net Loss and that requirement for Mitigation Sequencing. The City did not create new standards, but simply established a section reflecting the State Guideline provisions (note the reference).

Staff Recommended Change: None.

Topic: Shoreline Vegetation

Public Comments:

- 10 foot landscape strip proposed will not filter runoff from upland properties (Peter Davidson)
- Proposed vegetation will not improve lake (Tony Fassbind).
- The landscaping requirements are not feasible, impractical, and would not accomplish the intended result of shading and debris production and would unfavorably impact the property owner's view corridor and use of property (Richard Sandaas).
- Concern about interaction between tree replacement and shoreline vegetation requirements that could result in the requirement for a significant number of trees to be planted. Also concerned about 3:1 replacement ratio, particularly for narrow lots (Allen Schwartz).
- Concerns about height of shrubs indicated on Native Plant List, as these would block views (Allen Schwartz).

- City does not appear to have list of native groundcovers or perennials (Allen Schwartz).
- Concern about requirement for maintenance agreement for shoreline vegetation (Allen Schwartz).
- Are vegetation requirements under this draft SMP different than what was required as a result of his pier project a few years ago? (Jim Tosti)
- Can you plant replacement trees off-site (Jim Tosti)?

Staff Response:

- The purpose of shoreline vegetation requirements, as identified in WAC 173-26-221(5)(b), is "to protect and restore the ecological functions and ecosystem-wide processes performed by vegetation along shorelines. Vegetation conservation should also be undertaken to protect human safety and property, to increase the stability of river banks and coastal bluffs, to reduce the need for structural shoreline stabilization measures, to improve the visual and aesthetic qualities of the shoreline, to protect plant and animal species and their habitats, and to enhance shoreline uses." The WAC further provides a list of the "most commonly recognized functions of the shoreline vegetation," including:

    - Providing shade necessary to maintain the cool temperatures required by salmonids, spawning forage fish, and other aquatic biota.
    - Providing organic inputs critical for aquatic life.
    - Providing food in the form of various insects and other benthic macroinvertebrates.
    - Stabilizing banks, minimizing erosion, and reducing the occurrence of landslides. The roots of trees and other riparian vegetation provide the bulk of this function.
    - Reducing fine sediment input into the aquatic environment through storm water retention and vegetative filtering.
    - Filtering and vegetative uptake of nutrients and pollutants from ground water and surface runoff.
    - Providing a source of large woody debris into the aquatic system … Abundant large woody debris increases aquatic diversity and stabilization.
    - Regulation of microclimate in the stream-riparian and intertidal corridors.
    - Providing critical wildlife habitat, including migration corridors and feeding, watering, rearing, and refuge areas.

    In the draft SMP, vegetation provisions are related to protection of existing functioning vegetation (particularly trees), and as compensation for a proposed structure setback strategy that will result in the long term in a reduction of the average existing setback over time. There is a vast array of scientific articles that discuss various functions that vegetation performs, and these functions are generally universally performed regardless of the location of the specific study. As a function of soil and plant biology, chemistry and structure, all vegetation communities provide some degree of soil stabilization with their roots, uptake or modify pollutants via root systems and associated organisms, provide habitat for a variety of animals, improve infiltration potential of soils, etc.

There are an increasing number of studies that indicate adverse affects of night lighting on birds, amphibians, and fish (for example, literature reviews by Rich and Longcore 2006 and Rich and Longcore 2004; local study on Lake Washington, Mazur and Beauchamp 2006). Shoreline vegetation can attenuate the intensity of light that reaches the lake and riparian area, thereby reducing some of the light-related impacts on wildlife breeding, migrating, and survival.

- Rich, C. and T. Longcore. 2006. Ecological Consequences of Artificial Night Lighting. Island Press. Washington.
- 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. 69:151-175
- Longcore, T. and C. Rich. 2004. Ecological Light Pollution. Frontiers in Ecology and the Environment. 2(4):191-198

Further, the purpose of the vegetation requirements is not to collect and clean all stormwater runoff from the upland basins, much of which is collected by stormwater systems and piped to the lake. The City's stormwater management program will be addressing those systems in a separate process. The vegetation requirements are intended to address impacts to the shoreline from developments and activities within shoreline jurisdiction as described above.

- The vegetation strip is not intended to filter runoff from all upland properties, but instead is intended to provide the functions noted above, which includes helping to filter runoff from the subject property.
- The 3:1 replacement ratio, as proposed, would only be required when an applicant is proposing to remove a significant tree. It would not apply in cases where removal of a tree planted to meet the shoreline vegetation standards is proposed to be removed (this would be required to be replanted under a 1:1 replacement ratio) and also would not apply to the trees replanted when a significant tree is removed (also addressed under a 1:1 replanting ratio).
- A landscape architect at the Watershed Company who has experience designing shoreline planting plans has evaluated the City's Native Plant list to identify vegetation that would be appropriate for a shoreline location (see Attachment 7). The amendments proposed have slightly modified the potential full maturity height expectations for several species. City plans to accommodate this information into a new list for the shoreline area. Further, it is important to note that the provisions also allow for use of other plants not included on this list. Vegetation could also be pruned to maintain views.
- The City does contain a list of native groundcovers, but not of perennials. References to perennials have been deleted.
- Staff recommends inclusion of a maintenance agreement for vegetation to notify future property owners of the City's expectations that vegetation will remain or be replaced with shoreline appropriate vegetation. This is typical of situations in which new development is authorized with requirements for vegetation planting as mitigation.
- All pier-related vegetation requirements are currently the result of federal government permitting only, related to Endangered Species Act consultations

between the U.S. Army Corps of Engineers and the National Marine Fisheries Service. The current City SMP does not have any vegetation requirements for new or modified piers. However, the Guidelines now require that SMPs include provisions for mitigation when impacts to ecological functions occur. Accordingly, the draft SMP includes requirements for vegetation associated with *new* piers that are similar to those that are required by the federal government. The City cannot continue to rely on those other agencies to ensure that appropriate mitigation is required and implemented for new impacts that the City authorizes.

- At this point, mitigation cannot be done off site. Off-site mitigation brings up considerable issues. The planting would need to be on the shoreline. The only reasonable alternative would be in a shoreline park where public views and existing improvements could be an issue. Trees are important to the ecological function of the lake and their loss is significant, particularly since we do not have many trees along the shoreline. The 3 to 1 ratio is set to avoid No Net Loss because a new smaller tree has considerable less ecological value and function than a mature tree.

Staff Recommended Changes: Staff is separately recommending that revisions be considered to the tree management provisions. See the staff report for more information.

Topic: Shoreline Setback Reduction

Public Comments:

- Concern about shoreline setback reduction allowance applying to scenarios where the property owner does not do anything to enhance the shoreline to quality for a setback reduction. Provisions should be rewritten to be limited to situations where the structures or features of concern already exceed the threshold and are being reduced to the threshold needed to qualify for the incentive (Futurewise).

Staff Response: The City has very few privately owned properties outside of the Natural Environment that are not hardened (estimate under 10 properties), and feels that it is important to provide this incentive to those property owners who have retained a natural shoreline condition.

Staff Recommended Change: None.

Topic: Nonconformances

Public Comments:

- Recommends a longer time frame be permitted for reconstruction of structures damaged due to fire or other casualty (increase from 12 months to 24 months) to allow for adequate time to negotiate with the insurance company and move forward with the design and construction process (Robert Connor).

- Recommend deleting Section 83.550.5.b.4, which requires nonconforming accessory structures to come into compliance if the applicant is making an alteration to the primary structure, the cost of which exceeds 50 percent of the replacement cost of the structure (Robert Connor).
- Recommend amending Section 83.550.5.b to allow for greater than 10% addition in order to provide more flexibility and obtain enhanced mitigation (Robert Connor).
- Recommend eliminating the limitation that prohibits successive additions within the shoreline setback with a 5-year time frame (Robert Connor).
- Recommend amending Section 83.550.6.b.6 as follows:
  - Delete section b
  - Amend section c to allow for larger structure with corresponding mitigation (Robert Connor).

Staff Response:

- Other nonconformance provisions addressing time frames for submittal of a building permit to rebuild a structure allow a 6 or 12-month time frame for submittal of a building permit. If the Planning Commission recommend extending the time frame in the SMP, it is recommended that the time frame for other provisions be re-evaluated in future amendments.
- Requiring overall compliance on a property as significant investment is made on-site is a typical approach and specifically is also used in the critical area regulations in order to work towards gradual reductions of non-conformances.
- Staff has concerns about whether providing broader allowance for enlargement of nonconformances will be consistent with Guidelines. Ecology has already commented that non-conformity should be minimized when possible. However, staff agrees that some additions should be permitted that would not further impact ecological functions. Staff has re-evaluated the provisions contained in Section 83.550.5.b and is recommending additional flexibility for upper story additions that do not increase the building footprint, since these do not increase the impacts.
- Staff concurs that changes are needed to the language provided in Section 83.550.6.b.

Staff Recommended Change:

- Revise Section 83.550.4 to allow submittal of a building permit within 18 months.
- Recommend revising the provisions contained in Section 83.550.6.b and 7.b addressing replacement of an existing residence, as follows: The size of the building footprint shall not be increased and the reconstructed structure shall not extend further waterward than the existing primary residential structure. For purposes of this subsection, the improvements allowed within the shoreline setback as established in Section 83.180, such as bay windows, chimneys, greenhouse windows, eaves, cornices, awnings and canopies shall not be used in determining the most waterward location of the building (see Plate XX)..
- Recommend revising the provisions contained in Section 83.550.5.b addressing nonconforming structures to allow for broader allowance for additions within the setback, as follows: Any enlargement of the building footprint within the shoreline setback shall not exceed 10 percent of the gross floor area of the

existing dwelling unit prior to the expansion. Other enlargements, such as upper floor additions, may be permitted if the addition is consistent with other provisions contained in this subsection.

Topic: Wetland Buffer

Public Comments: Formally designate the west edge of the buffer protecting the Forbes Creek wetlands as terminating at the east side of Rose Point Lane (Robert Connor).

Staff Response: The proposed regulations allow for the Planning Official to approve a modification of the required buffer to that portion of a wetland buffer that is divided by an improved right-of-way or structure, under certain conditions. The review required is a technical review of existing functions. Recently, as part of a wetland delineation determination completed in the area, the City's wetland consultant determined that the buffer functionally did extend across Rose Point Lane to the west side of the road. Staff's recommendation is that the criteria remain in place as-is. If the applicant disagrees with the findings coming out of the delineation process, the applicant can address that issue through separate processes available in the code addressing wetland delineations.

Staff Recommended Change: None.

Topic: Critical Areas Ordinance

Public Comments: Exclude the following existing parts of the Critical Areas Regulations from incorporation into the SMP: permitting references, exclusion of certain critical areas from protection, and enforcement provisions (Futurewise).

Staff Response: As part of the incorporation of the critical areas ordinance, the City has amended existing permitting processes to be consistent with SMP requirements. The City has also not included provisions that would otherwise exclude protection of certain types of wetlands, such as protection for small wetlands (contained in Section 90.20, which has not been included). The City's current critical areas regulations do not separate contain enforcement provisions.

Staff Recommended Change: None.

Topic: Parking

Public Comments:

- Recommend deleting proposed provision allowing underground parking to extend within the shoreline setback (Futurewise).
- Recommend including provisions to address impacts of parking lot lighting on fish and wildlife habitat (Futurewise).

Staff Response:

- Staff believes that the provisions addressing underground parking have been designed to address potential adverse ecological impacts by requiring that vegetation standards continue to be met and that grade changes be minimized.
- Lighting impacts are comprehensively addressed in Section 83.470 and would address parking lot lighting.

Staff Recommended Change: None.

Topic: Public Access

Public Comments: Recommend that public access facilities be located to meet setbacks, unless they need a waterfront location (Futurewise).

Staff Response: Staff has significant concerns with requiring the location of public access to be shifted landward additional distance to meet the shoreline setback requirements because of the impact on use of the property. Staff believes that the provisions addressing public access have been designed to address potential adverse ecological impacts by requiring that vegetation standards continue to be met and that the access be constructed of pervious materials.

Staff Recommended Change: None.

Topic: Streams

Public Comments:

- Treat the section addressing bulkheads along streams in Section 83.510 the same as shore stabilization along the lake (Futurewise).
- The enhancement standards used for shoreline setbacks should also be applied to stream buffers to ensure they also improve over time (Futurewise).
- Apply stream buffers to piped streams to ensure that you are not precluding restoration or daylighting opportunities (Futurewise).
- Recommend review of activities permitted within buffers, such as stormwater outfalls, water quality facilities, roads, utilities, and other minor improvements to ensure that the ecological functions can be performed by buffer vegetation (Futurewise).

Staff Response:

- Under the proposed provisions, streambank stabilization is required to be designed consistent with Washington Department of Fish and Wildlife's *Integrated Streambank Protection Guidelines* (2003, or as revised). These provisions emphasize the evaluation of the causes of streambank erosion and selecting appropriate streambank protection techniques based upon the principles of mitigation sequencing. The Guidelines establish a decision-making tool to ensure that techniques:
  • Perform adequately to meet streambank-protection objectives;
  • Are appropriate with respect to mechanisms of failure and site- and reach-based causes;
  • Are considered with an understanding of the potential impacts to habitat

caused by each technique; and
• Are selected in order of priority to first avoid, second minimize, and third compensate for habitat impacts.

- While Staff appreciates the comment on stream buffers, it is important to note that the streams with more intact buffer systems are located within the Natural Environment and within large wetland complexes that are also protected. Therefore, streams located within the Natural Environment, which have the most ecologically intact buffer areas, are also protected by wetland buffers, which far exceed the stream buffers and are sufficient to protect ecological functions. Streams located in more urban areas have buffers that are already significantly impacted by past development practices and the buffers established for these streams are reflective of this existing condition. Further, it is important to note that Kirkland does not contain any streams that meet the jurisdictional definition of shorelines; therefore, only the 200 feet closest to the shoreline would be subject to the shoreline regulations.
- It is also important to note that the requirement of the SMA and Guidelines is different than the GMA with respect to critical areas. The SMA does not require use of best available science, but instead requires that the regulations are as protective as current provisions contained within the City's critical area regulations. The proposed stream provisions are consistent with the City's existing stream buffer standards and have appropriately protected areas with more intact functions through proper shoreline environment designation, as well as buffer protections in order to ensure no net loss.
- The area in and around the piped streams located within Kirkland is already previously developed – therefore staff does not recommend that buffer standards be applied to piped streams. In order to improve existing ecological functions, the provisions do encourage daylighting of piped streams through shoreline setback reduction provisions.
- The provisions contain stream rehabilitation provisions that allow for improvement of ecological functions.
- The improvements allowed within stream buffers are typical of critical area ordinances and standards have been included to ensure that ecological functions are not adversely impacted by these improvements.

Staff Recommended Change:

- Revisions have been made to Section 83.510 to reinforce preferences for use of nonstructural of soft structural streambank stabilization measures.

Topic: Natural areas

Public Comments:

- Ensure that the following provisions do not apply to the Natural Environment:
    - View corridors, walkway/access corridors, setback reduction, the list of uses, facilities, and structures allowed it setbacks (both Section 83.330 and 83.190.2).

Staff Response: View corridors and public access along the shoreline do not apply within the Natural Environment. It should also be noted that properties within the

Natural Environment along the shoreline edge are composed of wetland areas, which would provide protection beyond shoreline setbacks.

Staff Recommended Change:

- Add language noting that the setback reduction mechanisms do not apply within the Natural Environment.
- Add language to the section addressing improvements within shoreline setback to note that the provisions do not apply within the Natural Environment.

Cumulative Impact Analysis

Public Comments:

- CIA needs to address impacts from vegetation removal (not just significant vegetation removal) (Futurewise).
- Need to address stream buffer requirements, which are not consistent with those needed to protect shoreline functions (Futurewise).

Staff Response:

- Staff believes that the CIA addresses situations in which vegetation removal might adversely impact ecological conditions. It is important to note the existing character of vegetation within the City when evaluating the vegetation standards. The regulations and CIA analysis both focus on areas where existing vegetation performs beneficial ecological functions, such as in Natural area or form existing trees. The definition of "significant vegetation removal" is sufficiently broad to cover any alteration that would have adverse effects on ecological function.

- While Staff appreciates the comment on stream buffers, it is important to note that the streams with more intact buffer systems are located within the Natural Environment and within large wetland complexes that are also protected. Therefore, streams located within the Natural Environment, which have the most ecologically intact buffer areas, are also protected by wetland buffers, which far exceed the stream buffers and are sufficient to protect ecological functions. Streams located in more urban areas have buffers that are already significantly impacted by past development practices and the buffers established for these streams are reflective of this existing condition. Further, it is important to note that Kirkland does not contain any streams that meet the jurisdictional definition of shorelines; therefore, only the 200 feet closest to the shoreline would be subject to the shoreline regulations.

Staff Recommended Change: None.

Restoration Plan

Public Comments:

- Recommend including a statement that stand-alone restoration projects and mitigation enhancement work be consistent with and use information from the Restoration Plan (Futurewise).

Staff Response: Section 83.350, addressing shoreline enhancement, does reference projects contained in the City's Restoration Plan.

Staff Recommended Change: None.

Chapter 141

Topic: Permitting Provisions – Chapter 141

Public Comments:

- Add a statement to Section 141.30 noting, "no uses, land and water alterations, or development shall be undertaken without obtaining a permit or letter of exemption to ensure conformance with the SMP". (Futurewise).
- Add provisions (specified in letter) to Section 141.40 addressing review of exemptions from the Substantial Development Permit Process (Futurewise).
- Add statement to Section 141.40.3 noting that if a JARPA application is submitted, the city may also specify the necessary supporting information (Futurewise).
- Letters of exemption should be required in order to document that the project will not have an impact on ecological functions (Futurewise).
- Provide a description of the purpose of Variance and Conditional Use Permits in Section 141.70 (Futurewise).

Staff Response:

- Section 141.30 already contains the following statement: 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 141.40.
- With a few noted exceptions, the requested provisions to be added to Section 141.40 are either already addressed through this provision or are contained in WAC 173-27-040, which this section references.
- Staff believes that several provisions contained in Section 141.40 will ensure that sufficient application information is submitted, including the requirement for the applicant to demonstrate conformance with exemption criteria as well as requirements for a determination of a complete exemption request.
- The draft language contained in Section 141.40 is consistent with the provisions contained in WAC 173-27-050 addressing letters of exemption. Exempt activities would still be reviewed for consistency with Chapter 83 provisions, which address no net loss and cumulative impacts.
- The purpose of Conditional Use and Variance Permits are provided in WAC 173-27-170 and 160, respectively, which are referenced in the provisions contained in Chapter 141.

Staff Recommended Change:

- Staff recommends adding the following two statements to Section 141.40:
    - Proposals that are not permitted under the provisions of Chapter 83 shall not be allowed under an exemption.
    - A proposal that does not qualify as an exemption may still apply for a Shoreline Substantial Development permit.

Topic: Enforcement

Public Comments:

- More details are needed on needed to address enforcement (Futurewise).
- Increase penalties for enforcement. Violations should be required to pay a penalty fee of double or triple the normal amount, and require violations that might have qualified for an exemption to pay variance fees for whatever standards they didn't follow as the double or triple fee (Futurewise).
- The City should initiate a fine system, which may also require implementation by a deputized enforcement officer from building or planning (Futurewise).
- The City should withhold other land use and building permits until the violation is resolved (Futurewise).

Staff Response:

- The City has decided to use WAC 173-27-240 through 310 for enforcement—at least in cases where the City and DOE are acting jointly. In addition, Section 141.80 allows the City to use other enforcement authority (such as KZC Chapter 170 enforcement authority). Under the WACs, the maximum penalty is $1,000 per day per violation. The fines would be lower under the KZC ($100 per violation per day for a first violation). In more egregious cases where DOE would join with the city, enforcement would proceed under the WACs.

- The City is concerned about legal issues associated with withholding permits in cases where there is no relation between the violation and the permit requested. The City does contain existing provisions that allow the Building and Planning Departments to work together to determine if a permit or Certificate of Occupancy should be withheld. See KZC 170.10 and 170.15 and KMC 21.06.250.

Staff Recommended Change: None.

Zoning Code Issues

Topic: Zoning Code Changes

Public Comments:

- WD II Zone:
  - Delete item b. of Special Regulation 5 and allow 15% upper floor reduction in gross floor area to apply to all facades (Robert Connor).
  - Amend Section 115.43.3.a, which requires the required front yard for the garage to be eight feet greater than the required front yard for the remainder of the detached dwelling unit (not including covered entry porches approved under KZC 115.115(3)(n)) for lots with less than 3,000 square feet. Recommend that the distance be reduced to 3 or 5 feet (Robert Connor).
  - Request that Lake Ave W private easement be allowed same treatment as proposed for 5th Ave W private easement (Mark Nelson).
  - Recommend sun angle setback continue due to concerns about building mass. I am OK with the 30 foot height but believe a 30 foot height should be set back at least 10 feet from the North property line (Allen Schwartz).
- WD III Zone: Does not appear that these properties receive as good of tradeoffs as proposed in the WD II zone (Mike Mohaghegh.)

Staff Response:

- Staff is concerned that if there are no performance measures for the 15% reduction, it may be used solely on the waterfront side of the building, which is not consistent with the intent of this provision to reduce the massing between structures. While this may lend itself to some repetition, it is still more flexible than current provisions.
- The requirement for the additional front setback for garages only applies where there is a front property line (based on definition of the width of the adjacent street or easement), so it won't affect properties along the Lake Ave W, 5th Avenue West or Rose Point Lane easements, which should address most of the small lot configurations. Staff does not recommend varying this standard for the shoreline area.
- Building mass can be reduced in other ways by reducing the size of the upper floors. Given the increase in shoreline setback requirements, staff recommends offsetting this with a change in the north property line setback.
- Properties in the WD III zone also have been proposed to receive significant reductions in two provisions: front required yard (offsetting for increases in shoreline setback) and elimination of current north required yard.

Staff Recommended Change:

- Revise the provision addressing setbacks along 5th Ave W and Lake Ave W as follows: The required yard along the east side of the private access easements known as 5th Ave W or Lake Avenue West is 0 feet.

KIRKLAND LAKESHORE ASSOCIATION

A voluntary association dedicated to promoting the well-being of Kirkland's lakeshore.

August 13, 2009

Mr. Paul Stewart
City of Kirkland Planning Department
123 Fifth Ave
Kirkland WA 98033

cc's: Eric Shields, Stacy Clauson, Teresa Swann, Brent Carson, Esq.

Re: Meeting with Kirkland Lakeshore Association of August 12, 2009

Dear Paul:

This letter is to thank you and your colleagues for taking the time to meet with us yesterday to discuss the SMP Update, and to confirm our discussions about process going forward.

Meeting of August 12, 2009
As you know, members of the Kirkland Lakeshore Association (KLA) and its legal counsel worked hard and succeeded in meeting the requested timing of getting a consolidated set of comments to Staff, which were sent electronically on August 9, 2009. In addition, our comments were submitted in precise reference to the actual legislative language, and where we proposed alternatives, these were included as actual language drafted by expert legal counsel. The actual method of submission was a Microsoft Word version of the latest draft of the SMP Update with in-line comments and revision marks showing proposed modifications.

While we would like to acknowledge the hard work that you and other Staff have put into this Update, our draft and discussion with counsel at our meeting yesterday highlighted a number of problems and inconsistencies in the current draft that you and the other Planning Staff acknowledged as meriting attention and revision. In response to a request from Eric Shields, I have directed our counsel to send a further communication about those certain provisions (regarding shoreline stabilization) that we discussed as most in need of rewriting in order to be readable and internally consistent. Although the number of comments we submitted is significant, a good percentage of these were these type of fixes and corrections, which your staff expressed appreciation for receiving – and we are happy to provide.

Summary of KLA Comments
In terms of providing a summary of the most substantive issues to be shared with other staff and the Planning Commission, please see the points below. Please let me know if this is not what you need or if there is anything else we can provide. In reviewing these, we should note that these points summarize our actual comments and suggested revisions, but they cannot do so completely or to the same degree of specificity, and so there is no substitute for reviewing the comment draft we submitted in its entirety. That said, our major concerns about the current draft are as follows:

1. Financial Burdens. One very significant concern of property owners is regulations that would burden them with unreasonable or unbounded financial obligations. As proposed, the Update requires owners to take certain actions as "feasible," but the definition of feasibility is regardless of cost. We believe it is necessary to address this by excluding from the definition of "feasible" not only things that would be physically impossible (the current draft), but also things that would be economically unreasonable. Similarly, we are seeking a reasonable cap on the cost of certain mitigation measures because of the fear on the part of owners that these will be imposed on them without limit in the future.
2. Shoreline Setbacks and Non-Conformance Provisions. Perhaps the most concerning change imposed by the new regulations is the dramatic increase in shoreline setbacks. Based on independent review by our expert legal counsel, it has yet to be adequately demonstrated that these changes in the status quo are needed to meet the "no net loss" standard in State law. But as we have said from the beginning, we would not oppose changes to shoreline setbacks to the extent that these are in fact mandated by State law. If this is the case, however, then the most important principle for owners is that existing lawful non-conformances will be permitted to exist and be maintained so long as the extent of the non-conformity is not increased. Understanding the position these regulations finally take on this important issue is critical to property owners, because this goes to the heart of the question of whether owners can keep what they have (as long as the non-conformity is not increased), or whether the City will seek to eliminate over time the many residential non-conformities created by this new law. The comment draft we submitted contains revisions necessary to allow property owners to keep what they have as long as they do not increase non-conformance – which we are advised by expert legal counsel is both the spirit and the letter of the "no net loss" of the SMP law.
3. Private Views. In addition to cost, owners are justifiably concerned that the vegetation and especially tree requirements of the proposed Update will unreasonably impact highly valuable views from private property. While not asking for the completely preferential treatment given public views, we are suggesting that owners be allowed to propose effective alternatives where the new requirements would have an unreasonable effect on residential views. As we discussed at our meeting, the existing language does not provide even this limited flexibility for alternative compliance, and so we are proposing that this be added.
4. Shoreline Protection. One other important issue we discussed was the need for residents to take reasonable measures to protect their properties by maintaining their bulkheads. This is an area of particular concern to lakeshore residents, who fear being prohibited from taking reasonable measures to protect their properties from storm and other damage. The revisions we submitted address this issue by specifying a reasonable time horizon for such infrequent storms, and by proposing an expansion of the amount of repair allowed as a "minor repair."

As noted above, these are not the only issues covered by our proposed revisions, but they are among the most important. We would be happy to discuss any further questions, although we have endeavored to supply as much specificity as possible with our revision-marked draft.

Again, thank you for taking the time to meet with us, and we look forward to your detailed response to our proposals. If there is anything we can do to assist you in this process, please do not hesitate to contact us.

Sincerely,

KIRKLAND LAKESHORE ASSOCIATION

By Kevin Harrang, Member

Chapter 83 – SHORELINE MANAGEMENT

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Authority and Purpose

83.10 Authority

1. This Chapter is adopted as part of 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. Designation – The waters of Lake Washington and shorelands associated with Lake Washington are designated as shorelines of statewide significance.
2. Shoreline Jurisdiction
   a. The provisions of this Chapter shall apply to all shorelines of the state, all shorelines of statewide significance, and shorelands.
   b. Lake Washington, its underlying land, associated wetlands, and those lands extending landward 200 feet from its OHWM 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 OHWM of Lake Washington.

83.30 Purpose and Intent - The Kirkland Shoreline Master Program, consisting of this Chapter, the Shoreline Element Chapter of the Comprehensive Plan and the Restoration Plan, 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, found in the City's Comprehensive Plan, 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 Element 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 Shoreline Management Act is exempted from the rule of strict construction; the Act and this Shoreline Master 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. (this is a repeat of 83.40.2)

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 City 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

For the purposes of this Chapter the following terms shall have the meaning ascribed to them below. Terms not defined in this section shall be defined as set forth in Chapter 5 KZC.

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

2. 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

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

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

5. Appurtenance: For the purpose of an exemption of a single family residence, also referred to as a detached dwelling unit on one lot, and its associated appurtenances from a substantial development permit, an appurtenance includes those listed under WAC 173-14-040 as well as tool sheds, greenhouses, swimming pools, spas, accessory dwelling units and other accessory structures common to a single family residence located landward of the OHWM and the perimeter of a wetland.

6. 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.

7. Average Parcel Width: The average of the distance from the north to the south property lines as measured along the OHWM and the front property line, or along the east and west property lines if the parcel does not abut Lake Washington.

8. 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.

9. 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.

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

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

12. 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.

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

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

15. 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 83.500.3(b) and 83.510.3(b). The buffer setback serves to protect the wetland or stream buffer during development activities, use, and routine maintenance occurring adjacent to these resources.

16. 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.

17. Canopy: A cover installed as a component of a boatlift.

18. 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.

19. 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.

20. 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.

21. 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.

22. Conditional Uses: A use, development, or substantial development that is classified as a conditional use in section 83.170 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.

. Cost: in the context of development projects or activities such as structures, costs shall not include any costs of or relating to non-structural interior elements, including without limitation appliances, heating and cooling systems, electrical systems, interior flooring and surfaces, and the like, regardless of whether such elements are fixtures.

23. 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.

24. 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.

25. 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 requires access to deep water.

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

27. 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.

28. Dry Land Boat Storage: A commercial service providing storage of boats and other boat on the upland portion of a property.

29. 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.

30. Ecological Restoration: See Restore.

31. 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.

32. 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.

33. 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;

c. The action does not physically preclude achieving or unreasonably interfere with the project's primary intended legal use; and

d. The action is not of such disproportionate cost relative to the total cost of the development project as to render it unreasonable.

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.

34. 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.

35. 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 wetlands, or on shorelands in a manner that raises the ground elevation or creates dry land.

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Comment [A1]: This is an important revision which clarifies that actions are feasible only where they do not impose unreasonable financial burdens relative to the total cost of the triggering development project.

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36. 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.

37. 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. May be used for private or public purposes.

38. 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 that meets the objectives of the Shoreline Management Act.

39. 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.

40. 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.

41. Geotechnical Analysis: See Geotechnical Report.

42. 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.

43. 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.

44. 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.

45. Helipad: A takeoff and landing area for helicopters.

46. 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 semi-permanent anchorage/moorage facilities.

47. 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. Impervious surfaces do not include pervious surfaces as defined in this Chapter.

Comment [A2]: This clarification is needed to remove future confusion whether various concrete or asphalt products are pervious or impervious, given that these materials are listed in both definitions.

48. 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.

49. 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.

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

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

52. 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 drainage ways and storage areas.
- Preservation of portions of the site in undisturbed, natural conditions.
- Reduction of the use of piped systems. Whenever feasible, site design should use multifunctional open drainage systems such as vegetated swales or filter strips which also help to fulfill vegetation and open space requirements.
- Use of environmentally sensitive site design and green building construction that reduces runoff from structures, such as green roofs.

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53. Marina: A private or public facility providing the purchase and or lease of a slip for storing, berthing and securing motorized boats or watercraft, including both long-term and 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.

54. 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.

55. Minor Improvements: Walkways, pedestrian bridges, benches, and similar features, as determined by the Planning Official, pursuant to KZC 83.500.3(e) and 83.510.3(e).

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

57. Must: means a mandate; the action is required.

58. 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.

59. 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.

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

61. 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.

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

63. Pervious: As opposed to impervious surfaces, these are surfaces that allow water to pass through at rates similar to pre-developed conditions. Pervious surfaces include pervious asphalt, pervious concrete, grass, pervious gravel, and pervious pavers.

64. 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.

65. 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.

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

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

68. Primary Basins: The primary basins shown on the Kirkland Sensitive Areas Map.

ADDITION?: "Primary Structure"

69. 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.

70. 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.

71. Public Access Pier or Boardwalk: An elevated structure that is constructed waterward of the OHWM and intended for public use.

72. 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.

73. 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.

74. 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.

75. Rain Garden: Rain gardens and bioretention areas are vegetation 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.

76. 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

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Comment [A3]: This revision does not change the meaning of the provision, but clarifies that this is a non-exclusive list. Together with the revision to the definition of "impervious surfaces", this clarifies that asphalt, concrete, and similar products may be considered pervious if so designed.

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Comment [A4]: The term "primary structure" is used throughout this Chapter, but not defined. Question: should this be defined? Should the term be "principal structure"? Are primary/principal structures and accessory structures mutually exclusive?

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.

77. Restoration: See Restore.

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

79. 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.

80. 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.

81. Secondary Basins: The secondary basins depicted on the Kirkland Sensitive Areas Map.

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

83. 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.

84. Shoreland Areas: See Shorelands.

85. Shoreline Functions: See Ecological Functions.

86. 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.

87. 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.

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

89. 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.

90. 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.

91. 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 OHWM 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.

92. 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.

93. Sign, Interpretive: A permanent sign without commercial message, located on a publicly-accessible sit, 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.

94. 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.

ADD: definition of "significant tree"

Comment [A5]: The term "significant tree" is used throughout this Chapter but is not defined. Presumably, this should be defined the same as, or by referring to, the Kirkland tree ordinance where this is a defined term.

95. 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.

96. 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.

97. Substantial Development: As defined in the Washington State Shoreline Management Act (SMA) found in 90.58 RCW, and WAC 173-27-030 and 173-27-040.

98. Transportation Facilities: Facilities that include street pavement, curb and cutter, sidewalk and landscape strip as regulated under KZC 110.

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

100. Tree: A woody plant with one main trunk at a minimum height of 12' measured from the existing ground at maturity, having a distinct head in most cases. The Urban Forester shall have the authority to determine whether any specific woody plant shall be considered a tree or a shrub.

Comment [A6]: QUESTION: is this intended to be the same definition as in the Kirkland tree ordinance? It would be preferable to have one source of authority for tree regulation, as opposed to one set of regulations for shoreline trees and another set for trees elsewhere.

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

102. 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.

103. 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.

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

105. 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.

106. Water-Dependent Use: A use or portion of a use that 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.

107. 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 foster shoreline enjoyment.

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

109. 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.

110. 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.

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

112. 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.

113. 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 OHWM of the stream.

114. 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 does not include accessory facilities such as ticketing booths and does not include the transport of vehicles.

115. 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.

116. 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.

Shoreline Environment Designations and Statewide Significance

83.90 Shoreline Jurisdiction and Official Shoreline Map

1. Shoreline Map -

d. 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.

e. 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 OHWM 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 OHWM 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 OHWM 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 OHWM 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 OHWM 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 83.550 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 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 that 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.

Uses and Activities in the Shoreline Environment

83.160 User Guide

1. Explanation of Uses Table
   a. The table contained in KZC 83.170 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 83.170 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.
2. See KZC 83.370 for federal and state approval.

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
Scientific research and Native American fishing	SD	SD	SD	SD	SD	SD
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						

1 Limited to water-based aircraft facilities for air charter operations

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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 water-oriented Retail Establishment other than those specifically listed in this chart, selling goods or providing services.	X	SD[2]	X	X	SD	X

2 Permitted as an accessory use to a Public Park

KLA COMMENTS DATED 8-10-09

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

[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.

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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**
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
Automotive Service Center	X	X	X	X	X	X

[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**
Dry land boat storage	X	X	X	X	X	X
Industrial Uses						
Water-dependent uses	X	X	X	X	X	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	adjacent upland environ
Piers, docks, boat lifts and canopies serving Detached Dwelling Unit[11]	X	X	SD	SD	SD[15]	

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

KLA COMMENTS DATED 8-10-09

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
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	
Boat houses or other covered moorage not specifically listed	X	X	X	X	X	
Swimming beach and other public recreational use	CU	SD	SD	SD	SD	
Water-related, water-enjoyment uses						

[12] Permitted as an accessory use to a Marina or Public Park only.

KLA COMMENTS DATED 8-10-09

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 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
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

[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 detached dwelling unit

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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
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						
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

Comment [A7]: We have a general question about the consistency of the treatment of the various types of dwelling units referenced in this Chapter. Also, how are "mother in law" apartments handled?

[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.

KLA COMMENTS DATED 8-10-09

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**
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						
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

[21] Permitted as an accessory use to a marina or a public park.
[22] Construction of pedestrian and bicycle facilities only.
[23] This use may be allowed provided there is no other feasible route or location.

KLA COMMENTS DATED 8-10-09

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**
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	

Comment [A8]: Possible question for discussion.

[24] New towers are not permitted.

[25] Permitted under a substantial development permit when associated with a restoration or enhancement project.

Use Specific Regulations

83.180 Shoreline Development Standards

1. General –
   a. See KZC 83.40 for relationship to other code and ordinances.
   b. Development standards specified in this Chapter shall not extend beyond the geographic limit of the shoreline jurisdiction, except as noted in the provisions contained below.
2. Development Standards Chart –
   a. The following chart establishes the minimum required dimensional requirements for development. At the end of the chart are footnotes pertaining to certain uses and activities.
   b. KZC Section 83.170 contains an overview of the activities permitted under each of the use classifications contained in the development standards chart.
   c. KZC 83.180 through KZC 83.550 contains additional standards for the uses and activities, including provisions for No Net Loss and Mitigation Sequencing in KZC 83.360 and federal and state approval in KZC 83.370.

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						

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
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 parcel depth, except in no case is the shoreline setback permitted to be less	Outside of shoreline jurisdictional area, if feasible, otherwise 50'.	30 % 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	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.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
		than 30 feet or required to be greater than 60 feet, except as otherwise specificall y allowed through this Chapter.		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 to both the north and south property lines of the subject property, then the shoreline setback of the primary structure on the subject property is the average of the shoreline setback of these adjacent dwelling units, but at a minimum		

Comment [A9]: Question whether this should be south of Waverly Park

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				width of 15 feet. If a dwelling unit is not adjacent to the property, then the setback of the adjacent property without a dwelling unit for the purposes of determining an average setback shall be based upon 30% of the average parcel depth. Also see Section 83.190.2.b.3		
Maximum Lot Coverage	n/a	50%	50%	50%	60%	80% except for the following: In the CBD zones, 100% for properties that do not abut Lake Washington; otherwise 90%
Maximum Height of Structure[28]	n/a	25' above ABE[26]	35' above ABE	30' above ABE	35' above ABE	35' above ABE

[26] Structure height may be increased to 30' above ABE in the Natural shoreline environment. See KZC 83.190.4.c.1).

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
Other Residential Uses (Attached, Stacked, and Detached Dwelling Units; Assisted Living Facility; Convalescent Center or Nursing Home)						
Maximum Density[27]	n/a	n/a	n/a	n/a	3,600 sq. ft./unit, except 1,800 sq. ft./unit for up to 2 dwelling units if the public access provisions of KZC 83.420 are met	No minimum lot size in the CBD zones; 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, a mixed-use development 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 CBD zones, 100% on 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:

[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
						• In the CBD zones, if located on the east side of Lake Street South, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. • 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 uses: 0', Water-related use: 25', Water-enjoyment	n/a	The greater of: a. 25' or b.15% of the average	The greater of: a. 25'or b.15% of the average parcel

[28] The height limit applies to that portion of the building physically located within the shoreline jurisdiction. Permitted increases in building height are addressed in KZC 83.190.4..
[29] Structure height may be increased to 35' above ABE. See KZC 83.190.4.
[30] See KZC 83.190.4.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
			use: 30', Other uses: Outside of shoreline jurisdictional area, if feasible, otherwise 50'.		parcel depth.	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 CBD zones, 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 zones, if located on the east side of Lake St S, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
						Plan shall comply with the Master Plan provisions. [31]
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', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shoreline area, if feasible, otherwise 50'.	Water-dependent uses: 0', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shoreline jurisdictional area, if feasible, otherwise 50'.	30% 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.
Maximum Lot Coverage	n/a	10%	30%	30%	80%	80% except for the following: • In the CBD zones, 100% on properties that do not

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

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
						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 zones, if located on the east side of Lake St S, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. • 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.
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 jurisdictional area, if feasible, otherwise 50'.	Outside of the shoreline jurisdictional area, if feasible, otherwise 30% of the average	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.

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 ft. or required to be greater than 60 ft., except as otherwise specifically allowed through this Chapter.		
Maximum lot coverage	n/a	n/a	50%	50%	80%	80% except for the CBD zones, 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]	25' above ABE	30' above ABE[29]	41' above ABE, except In the CBD zones, if located on the east side of Lake St S, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property.
Transportation Facilities						
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	n/a	Outside of shoreline area, if possible, otherwise 50'.	30% 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
Shoreline Setback	n/a	Outside of shoreline area, if possible, otherwise 50'.	Outside of shoreline area, if possible, otherwise 50'.	30% of the average parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet	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.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter.		
Maximum Lot Coverage	n/a	5%	30%	50%	80%	80% except in the CBD zones, 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 zones if located on the east side of Lake St South, 55' above the abutting right-of-way measured at the midpoint of the frontage of the subject property. • In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
						Master Plan provisions.

83.190 Lot Size or Density, Shoreline Setback, Lot Coverage and Height

1. Calculation of Minimum Lot Size or Maximum Density –

   a. Development shall not use lands waterward of the OHWM to determine minimum lot size or to calculate allowable maximum 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 will be partially located within the shoreline jurisdiction, the City may approve an increase in the actual number of units in the shoreline jurisdiction, provided that the total square footage of the units within the shoreline jurisdiction does not exceed the allowed density multiplied by the average unit size in the proposed development on the subject property.

   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 0.50.

   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

2. 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 OHWM on the horizontal plane and in the direction that results in the greatest dimension from the OHWM (see Plate XX).

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

      3) For those properties located along Lake Ave W south of the Lake Ave W Street End Park, in instances where the shoreline setback of adjacent dwelling units has been reduced through a shoreline reduction authorized under KZC Section 83.380, the shoreline setback of these adjacent dwelling units, for the purpose of calculating a setback average, shall be based upon the required setback that existed prior to the authorized reduction.

   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 meets KZC 83.360 for avoiding or at least minimizing adverse impacts to shoreline ecological functions:

      1) For public pedestrian access required under KZC 83.420, walkways, benches, and similar features, as approved by the Planning Official.

Comment [A10]: Consistent use of defined term is preferable

Deleted: ordinary high watermark

Comment [A11]: It needs to be unambiguous that any required actions (e.g., mitigation) that changes the OHWM will entitle the property owner to measure the OHWM based on the original position. It is not clear that all such required actions would be considered "shoreline habitat and natural systems enhancement projects". This revision makes the issue unambiguous.

Comment [A12]: QUESTION: should this be south of Waverly Park?

2) For private access to the shoreline, walkways within the shoreline setback are permitted, subject to the following standards:

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

   b) The walkway corridor area shall be located outside of areas of higher ecological and habitat value.

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

   d) The walkway corridor area may contain minor improvements, such as garden sculptures, 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 walkway corridor area and any view corridor requirements under KZC Section 83.410. Light fixtures approved under this subsection shall comply with the provisions contained in KZC 83.470.

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, including swimming beaches.

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, shall 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 shall not be closer than 25 feet to the OHWM, subject to the following standards:

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

   b) The total horizontal dimension of the improvement that extends into the shoreline setback shall not exceed 50 percent of the length of the facade of the primary structure.

   c) The 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.

Deleted: permeable

Deleted: porous

Comment [A13]: Clarifications to consistently use defined term.

Deleted: permeable

Deleted: porous

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

11) Outdoor seating areas for restaurants, hotels and other water enjoyment commercial uses may extend up to 10 feet into the shoreline setback, but shall be no closer than 16 feet to the OHWM, subject to the following standards:

    a) The improvement 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 improvement that extends into the shoreline setback shall not exceed 50 percent of the length of the facade of the primary structure.

    c) The 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 structure to the seating area or to follow the existing topography.

    d) All outdoor lighting is required to meet the lighting standards of KZC Section 83.470.

    e) The seating area is required to be fenced off from the shoreline by rope stanchions, portable planters, or similar device approved by the City, with openings through the fencing for customer entry. The floor plan of the seating area shall be designed to preclude the seating area from being expanded.

    f) The applicant is required to provide one (1) or more approved trash receptacles and one (1) or more ashtrays.

    g) The area of the seating shall be considered new gross floor area for the purposes of determining whether vegetation is required under the provisions of KZC Section 83.400.

12) 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 83.400;

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

    c.) The structure shall meet the view corridor provisions of KZC 83.410.

13) Public bridges and other essential public facilities that must cross the shoreline.

14) Parking as authorized by the Planning Official under the provisions of KZC 83.440.3.

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

16) Fences, swimming pools, tool sheds, greenhouses and other accessory structures and improvements are not permitted within the shoreline setback, except those specifically listed above in subsection 83.190 2.d.2).d).

3. Maximum Lot Coverage –

    a. General –

        1) KZC 83.180.3, Development Standards Chart, establishes the maximum lot coverage by use and shoreline environment.

        2) In calculating lot coverage, lands waterward of the OHWM shall not be included in the calculation.

Deleted: ordinary high watermark

3) 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.

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

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

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

4. Height Regulations –

a. General –

1) KZC 83.180.3, Development Standards Chart, establishes the maximum allowed building height for all primary and accessory structures. In the event that the maximum allowable building height in KZC 83.180.3 is greater than the maximum allowable height in the Kirkland Zoning Code, the lower of the two height provisions shall apply.

2) 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.

3) In the CBD zones, maximum building height shall be measured from the midpoint of the abutting right-of-way, not including alleys.

4) Pursuant to RCW 90.58.320, no permit shall be issued for any new or expanded building or structure more than 35 feet above average grade level that will obstruct the view to the lake 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 to the lake for 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 2 as described in KZC 115 for calculating average building elevation and depicted in Plate 17B.

b. Exceptions –

1) Element or feature of a structure, other than the appurtenances listed below, shall not 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 to the lake 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 as regulated in KZC 115.

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

d) Rooftop solar panels or other similar energy devices provided that the equipment is mounted as flush to the roof as feasible.

Deleted: possible

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

a) In the Natural shoreline environment, the structure height of a detached dwelling unit may exceed the standard height limit by a maximum of 5 feet above average building elevation if a reduction in the footprint of the building is sufficient to lessen the impact on a sensitive area and sensitive area buffer. The City shall include in the written decision any conditions and restrictions that it 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 83.410.

c) Properties in the PLA 15A zone in the UM Shoreline Environment that contain mix 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.

83.200 Residential Uses

1. General – Residential uses shall not occur over water, including houseboats, live-aboards, or other single- or multi-family dwelling units.

2. Detached Dwelling Units in the Residential-L environment- Not more than one dwelling unit shall be on each lot, regardless of the size of each lot, except an accessory dwelling unit.

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.

83.210 Commercial Uses

1. Float Plane Landing and Mooring Facilities –

a. Use of piers or docks 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) 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; and

3) Hours of operation may be limited to minimize impacts on nearby residents.

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 83.440.

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.

g. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.

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 is provided, boats shall be removed from the water and debris shall be captured and disposed in a proper manner.

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.

b. Drive-in or drive-through facilities are prohibited.

83.220 Recreational Uses

1. Motorized Boats – See KMC Chapter 14.24, Operation of Watercraft, for prohibition of use within restricted shoreline areas and established speed limits.

2. Floats/swim platforms – Only public floats/swim platforms are permitted.
3. Marina, Piers, Moorage Buoy or Pilings, Boat Facility and Boat Canopies – See standards contained in KZC Section 83.270 through 290.
4. 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, such as, but not limited to, a consideration of the following conditions: the presence of submerged aquatic vegetation, proximity to shoreline associated wetlands, critical nesting and spawning areas, water depth, water circulation, sediment inputs and accumulation, and wave action
      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. Associated buildings and structures, other than moorage structure for the tour boat facility, 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.
   g. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.
5. Public Access Pier, Dock or Boardwalk –
   a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing and constructing the use minimizing impacts
   b. No accessory uses, buildings, or activities are permitted as part of this use.
   c. See KZC 83.370 for federal and state approvals prior to submittal of a building permit for this use.
   d. Must provide at least one (1) covered and secured waste receptacle upland of the ordinary high water mark.
   e. All utility and service lines located waterward of the OHWM must be below the pier deck. All utility and service lines located upland of the OHWM shall be underground, where feasible.
   f. Piers or docks 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. Public access structures shall not be within 10 feet of a side property line, except that setbacks between moorage structures and north and south property lines may be decreased

for over-water public use facilities that connect with waterfront public access on adjacent property.

i. Public access 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 primary walkways and floats shall be no wider than 8 feet.

6. 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.

7. Boat Launch (for motorized boats) -

a. Location Standards –

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

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

a) Separated from existing designated swimming areas by a minimum of 25 feet.

b) Meet KZC 83.360 for avoiding impacts to fish and wildlife habitats.

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

d) Not be located within 25 feet 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 6 feet below the OHWM, unless the City determines that a greater depth is needed for a public boat launch facility.

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.

8. Public Park - Recreation facilities that support non-water related, high-intensity activities, such as basketball and tennis courts, baseball and soccer fields and skate parks, shall be located outside of shoreline jurisdiction to the extent feasible.

9. 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, designed and constructed to meet KZC 83.360 for net loss of shoreline ecological functions.

83.230 Transportation Facilities

1. General -

a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.

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

c. 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.

d. 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.

e. 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 riparian 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.

3. Passenger-only Ferry Terminal –

a. See KZC 83.360 for minimizing impacts when locating, designing, constructing and operating the use.

b. Associated buildings and structures, other than moorage structure for the ferry terminal 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. The City will make the determination if any parking and/or a passenger loading area will be required.

4. Water Taxi –

a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use.

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.

5. Arterials, Collectors, and Neighborhood Access Streets and Bridges –

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 identifies significant features along the shoreline.

j. Vegetation 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 shall not be vacated except in compliance with RCW 35.79.035 or its successor, as well as KMC 19.16.090.

83.240 Utilities

1. General –

a. See KZC 83.360 for avoiding and minimizing impacts when locating, designing, constructing and operating the use

b. 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.

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

d. New utilities shall not be located waterward of the OHWM or in the Natural shoreline environment unless it is demonstrated that no feasible alternative exists.

e. 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.

f. 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.

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

h. Utilities shall provide screening of facilities from water bodies and adjacent properties in a manner that is compatible with the surrounding environment. The City will determine the type of screening on a case-by-case basis.

i. 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.

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. See KZC 83.480 for conducting maintenance activities that minimize impacts.

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 other equipment from the lake and public pedestrian pathways or public use areas.

83.250 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 except as required 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 83.420, unless otherwise excepted or modified under the provisions of KZC 83.420.
3. Land Divisions shall establish a prohibition on new private piers and 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 83.270.
4. View corridors, established as part of a land division, shall be depicted on the face of the recorded document.

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Comment [A14]: This appears to be what was intended, or else the existing language does not make sense.

Comment [A15]: QUESTION: subdivision of a residential lot will henceforth require public access? If so, this is a significant issue. Question whether this should apply to properties in Residental-L.

Shoreline Modification Regulations

83.260 General

1. See KZC 83.360 for No Let Loss Standard and mitigation sequencing.
2. KZC 83.370 for federal and state approval required prior to submittal of a building permit.
3. KZC 83.430 for In Water Construction.
4. 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.

83.270 Piers, Docks, Moorage Buoys and Piles, Boatlifts and Boat Canopies Serving a Detached Dwelling Unit Use

1. General –
   a. Piers, Docks, Moorage Buoys and Piles, Boatlifts and Canopies may only be developed and used accessory to existing 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 shall not be leased, rented, or sold unless otherwise approved as a Marina under the provisions of KZC 83.290.
   b. The applicant for any new private pier or dock associated with a detached dwelling unit must demonstrate that a shared or joint-use pier is not feasible.
      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.
      2) On lots subdivided to create additional lots with waterfront access rights, joint-use piers shall be required.
      3) New residential development of two or more dwelling units with waterfront access rights must provide a joint-use or community dock facility.
   c. Piers, docks, boatlifts and moorage piles shall be designed and located to meet KZC 83.360 No Net Loss standard and Mitigation Sequencing.
   d. See KZC 83.370 for structures proposed to be extended waterward of the Inner Harbor Line.
2. Setbacks
   a. All piers, docks, boatlifts and moorage piles for Detached Dwelling Unit Use shall comply with the following location standards:

New Pier, Dock, Boatlift and Moorage Pile for Detached Dwelling Unit	Minimum Setback Standards
Side property lines	10 ft.
Another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required side property line setback	25 ft.
Outlet of a stream regulated under KZC 90, including piped streams	Maximum distance feasible while meeting other required setback standards established under this section

Comment [A16]: We understand this has been the subject of discussion with other waterfront property owners. QUESTION: what is the current Staff position on requiring joint use piers?

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Public park	25 ft., except that this standard shall not apply within the Urban Mixed shoreline environment.

b. Joint-use structures may abut property lines provided the property owners sharing the moorage facility 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 or dock is used by the other property. The applicant must file this statement with the King County Recorder's Office to run with the properties.

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3. General Standards –

a. Proposed piers and docks that 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.

b. 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.

c. 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.

d. The following structures and improvements are not permitted:

a.) Covered moorage, boathouses, or other walled covered moorage, except boat canopies that comply with the standards in this subsection.

b.) Skirting on any structure

c.) Aircraft moorage

e. See KZC 83.470 Lighting Standards for required lighting.

f. 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 4 inches high.

g. 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 and windows shall be generally non-reflective.

h. Must provide at least one (1) covered and secured waste receptacle.

i. All utility and service lines located waterward of the OHWM must be below the pier deck. All utility and service lines located upland of the OHWM shall be underground, where feasible.

4. New Pier or Dock Dimensional Standards –

a) New piers or docks may be permitted, subject to the following regulations:

New Pier, Dock or Moorage Piles for Detached Dwelling Unit	**Dimensional and Design Standards**
Maximum Area: surface coverage, including all	480 sq. ft. for single property owner

attached float decking, ramps, ells and fingers	700 sq. ft. for joint-use facility used by 2 residential property owners 1000 sq. ft. for joint-use facility used by 3 or more residential property owners Where a pier cannot reasonably be constructed under the area limitation above to obtain a moorage depth of 10 ft. measured above ordinary high water, an additional 4 sq. ft. of area may be added for each additional foot of pier length needed to reach 10 feet of water depth.
Maximum Length for piers, docks, ells, fingers and attached floats	150 ft, but piers or docks extending further waterward than adjacent piers or docks must demonstrate that they will not have an adverse impact on navigation. 26 ft. for ells 20 ft. for fingers and float decking attached to a pier
Maximum Width	4 ft. for pier or dock 6 ft. for ells 2 ft. for fingers 6 ft. for float decking attached to a pier, must contain a minimum of 2 ft. of grating down the center of the entire float.
Height of piers and diving boards	Minimum of 1.5 ft. above ordinary high water to bottom of pier stringers, except the floating section of a dock and float decking attached to a pier Maximum of 3 feet above deck for diving boards or similar features above the deck surface Maximum of 3 feet above deck for safety railing, which shall be an open framework
Minimum Water Depth for ells and float decking attached to a pier	Must be in water with depths of 9 feet or greater at the landward end of the ell or finger. Must be in water with depths of 10 feet or more at the landward end of the float
Decking for piers, docks walkways, ells and fingers	Piers and docks must be fully grated with 40% open area If float tubs for docks preclude use of fully grated decking material, then a minimum of 2 ft. of grating down the center of the entire float shall be provided
Location of ells, fingers and deck platforms	30 ft. waterward of the OHWM Within 30 ft. of the OHWM, only the access ramp portion of pier or dock is allowed
Pilings, Moorage Piles, and Buoys	Piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds. First set of piles located no closer than 18 ft from OHWM Maximum 2 moorage piles or buoys per detached dwelling unit, including existing piles

	Maximum 4 moorage piles or buoys for joint use piers or docks, including existing piles

b. The City shall approve the following modifications to new pier proposals that deviate from the dimensional standards of KZC 83.270.4 if the following requirements are met:

Item	Requirements
State and Federal Agency Approval	U.S. Army Corps of Engineers, the Washington Department of Ecology, and the Washington Department of Fish and Wildlife have approved proposal.
Maximum Area	No larger than authorized through State and Federal approval
Maximum Length	Same as noted in KZC 83.270.4
Maximum Width	4 ft. for portion of pier or dock located within 30 feet of the OHWM; otherwise, 6 feet ft. for pier or dock Otherwise, the pier and all components shall meet the standards noted in KZC 83.270.4

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

1) Any existing in-water and overwater structures shall be removed if they are associated with either a moorage structure or other recreational use that is located within 30 feet of the OHWM.

2) Emergent vegetation shall be planted waterward of the OHWM, unless the City determines that it is not appropriate or feasible.

3) Native riparian vegetation shall be planted 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 OHWM, 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 vegetative riparian zone along all properties sharing the pier.

4) 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 or shoreline appropriate 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 shall be allowed if approved by other state and federal agencies.

In addition, the City shall 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.

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Comment [A17]: This is a pure drafting suggestion to make this provision unambiguous. This clarifies but does not change the intended meaning. Without this revision, the provision could be read to state that "other recreational uses" must be removed, which is not the intent.

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Deleted: ordinary high water mark

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Comment [A18]: Note that this is a disincentive for joint-use piers that may decrease their desirability. Is this effect intended?

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Comment [A19]: This additional stipulation is unnecessary and improper. The point of this provision is that applicants shall not be required to provide vegetation that already exists. If existing vegetation meets the required standard, then further inquiry into its effect on ecological functions (which would presumably require studies etc.) should not be required.

Deleted: , provided that the existing vegetation provides a landscape strip at least as effective in protecting shoreline ecological functions as the required vegetation

b) Vegetation placement –

i. In shoreline environments that require a view corridor, 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.

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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. If the required vegetation cannot be placed without unreasonably obstructing water-facing views on the subject or neighboring properties, at the time of planting or upon future growth, then an alternative planting plan or mitigation measure in lieu of meeting these requirements may be proposed for approval by the appropriate planning official. The planning official shall approve such plan or measure if it constitutes a reasonably effective alternative, or may impose conditions the extent necessary to make the plan or measure a reasonably effective alternative. If the alternative plan or measure is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal.

Comment [A20]: This provision is needed to protect the investments of lakeshore property owners, which is an explicit purpose of this Chapter. Note that this proposed addition is not nearly as stringent as that applied to public views (which trump even ecological functions in importance). The intent of this addition is to allow the property owner to propose a reasonably effective alternative planting plan or mitigation measure where application of this new law unreasonably obstructs water-facing views.

5) In addition to a native planting plan, a 5 -year vegetation maintenance and monitoring plan shall be submitted to the City for approval. 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 5 years, that include written and photographic documentation on tree and shrub mortality, subject to the following success criteria:

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

ii. 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, provided that the reports address a 5 year maintenance and monitoring plan.

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

6. Replacement of Existing Pier or Dock –

a. A replacement of an existing pier or dock shall meet the following requirements:

Replacement of Existing Pier or Dock for Detached Dwelling Unit	**Requirements**
Replacement of entire existing pier or dock, including piles OR more than 50 percent of the pier-support piles and 50 percent of the decking or decking substructure (e.g. stringers)	Must meet the dimensional and design standards for new piers as described in KZC 83.270.4, except the City may administratively approve an alternative design described in subsection b. below.
Mitigation	Existing skirting shall be removed and may not

	be replaced Existing in-water and overwater structures located within 30 feet of the OHWM, except for existing or authorized shoreline stabilization measures or piers or docks, shall be removed

Comment [A21]: QUESTION: how can in-water or overwater structures be located further than 30 feet from the OHWM?

b. Alternative Design - The City may approve pier replacement proposals that deviate from the dimensional standards of KZC 83.270.4 if the following requirements are met:

Administrative Approval for Alternative Design of Replacement Pier or Dock for Detached Dwelling Unit	**Requirements**
State and Federal Agency Approval	U.S. Army Corps of Engineers, the Washington Department of Ecology, and the Washington Department of Fish and Wildlife have approved proposal.
Maximum Area	No larger than existing pier
Maximum Length	26 ft. for fingers and float decking attached to a pier Otherwise, the pier and all components shall meet the standards noted in KZC 83.270.4
Maximum Width	8 ft. for ells and float decking attached to a pier Otherwise, the pier and all components shall meet the standards noted in KZC 83.270.4

Additions to Pier or Dock –

Proposals involving the modification and/or enlargement of existing private piers or docks must comply with the following requirements:

Addition to Existing Pier or Dock for Detached Dwelling Unit	**Requirements**
Addition or enlargement	Must demonstrate that there is a need for the enlargement of an existing pier or dock based upon safety concerns or inadequate depth of water.
Pier or dock length and width, height, water	Enlarged portions must comply with the dimensional, materials, and mitigation

Comment [A22]: QUESTION: why doesn't this simply require a demonstrated need? Is it necessary to preclude in advance other potentially reasonable needs?

depth, location, decking and pilings	standards for new piers as described in KZC 83.270.
Decking for piers, docks walkways, ells and fingers	Must convert an area of existing nearshore decking to grated decking equivalent in size to the additional surface coverage
Mitigation	Existing skirting shall be removed and may not be replaced Existing in-water and overwater structures located within 30 feet of the OHWM, except for existing or authorized shoreline stabilization measures or pier or docks, shall be removed at a 1:1 ratio to the area of the addition

Comment [A23]: Same comment as above

8. Repair of Existing Pier or Dock–

Repair proposals that replace only decking or decking substructure and less than 50 percent of the existing pier-support piles must comply with the following regulations:

Repair of Existing Pier or Dock for Detached Dwelling Unit	**Requirements**
Replacement piles	Must use materials as described under KZC 83.270.5 Must minimize the size of piles and maximize the spacing between pilings to the extent allowed by site-specific engineering or design considerations
Replacement of 50 percent or more of the decking or 50 percent or more of decking substructure	Must replace any solid decking surface located within the nearshore 30 feet of the pier or dock with a grated surface material

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 cumulative repairs of an existing pier or dock would make a proposed repair exceeds the threshold for a replacement pier established in KZC 83.270.5, above, the repair proposal shall be reviewed under KZC 83.270.4 for a new pier or dock, , except as described in KZC 83.270.5.b for administrative approval of alternative design.

9. Boatlifts, Boatlift Canopies and Moorage Piles –

Boatlifts, boatlift canopies and moorage piles may be permitted as an accessory to piers and docks, subject to the following regulations:

Boatlift, Boat Canopy and Moorages Buoy for Detached Dwelling Unit	Requirements
Location	Boat lifts shall placed as far waterward of the OHWM as feasible and safe, within the limits of the dimensional standards for piers established in KZC 83.270.4 Bottom of a boatlift canopy shall be elevated above the boatlift to the maximum extent feasible, the lowest edge of the canopy must be a least 4 ft. above the ordinary high water, and the top of the canopy must not extend more than 4 ft. above an associated pier. Moorage piles or buoys shall not be closer than 30 ft. from OHWM or any farther waterward than the end of the pier or dock Moorage piles or buoys shall be located no further than 12 ft. from a pier or dock
Maximum Number	1 free-standing or deck-mounted boatlift per detached dwelling unit 2 jet ski lifts or 1 fully grated platform lift per detached dwelling unit use 1 boatlift canopy per detached dwelling unit, including joint use piers 2 moorage piles per detached dwelling unit, including existing piles 4 moorage piles for joint use piers or docks, including existing piles
Canopy Materials	Must be made of translucent fabric materials. Must not be constructed of permanent structural material.
Fill for Boatlift	Maximum of 2 cubic yards of fill are permitted to anchor a boatlift, subject to the following requirements: • May only be used if the substrate prevents the use of anchoring devices which can be embedded into the substrate • Must be clean • Must consist of rock or pre-cast concrete blocks • Must only be used to anchor the boatlift • Minimum amount of fill is utilized to anchor the

	boatlift

83.280 Piers, Docks, Boat lifts and Canopies Serving Detached, Attached or Stacked Dwelling Units

Comment [A24]: 83.270 covers detached dwelling units. Is this section intended to also cover detached dwelling units? Shouldn't these be drafted to be mutually exclusive?

1. General –
   a. Piers, Docks, Moorage Buoy and Piles, Boatlifts and Canopies may only be developed and used accessory to existing 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 shall not be leased, rented, or sold unless otherwise approved as a Marina under the provisions of KZC 83.290.
   b. Piers, docks, boatlifts and moorage piles shall be designed and located to meet KZC 83.360 No Net Loss standard and Mitigation Sequencing.
   c. See KZC 83.370 for structures to be extended waterward of the Inner Harbor Line.
2. Setbacks –

   All piers, docks, boatlifts and moorage piles serving Detached, Attached or Stacked Dwelling Units shall comply with the following setback standards:

New Pier, Dock, Boatlift and Moorage Pile for Detached, Attached or Stacked Dwelling Units	Minimum Setback Standards
Side property lines	10 ft.
Lot containing a detached dwelling unit	The area defined by a line that starts where the OHWM of the lot intersects the side property line of the lot closest to the moorage structure and runs waterward toward the moorage structure and extends 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. This standard shall not apply within the Urban Mixed shoreline environment.
Another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required north and south property line setback	25 ft.
Outlet of a stream regulated under KZC 90, including piped streams	Maximum distance possible while meeting other required setback standards established under this section
Public park	100 feet; or The area defined by a line that starts where the OHWM of the park intersects with the side property line of the park closest to the

	moorage structure and extends 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. This standard shall not apply within the Urban Mixed shoreline environment.

3. Number of Moorage Spaces – The City will limit the total number of moorages to one per each dwelling unit on the subject property. In addition, each unit shall be allowed to moor jet skis or kayaks or similar watercraft on the property. (already stated in 83.280.1)
4. General Standards -
   a. The design of the site must be compatible with the scenic nature of the waterfront.
   b. Must provide at least 2 covered and secured waste receptacles upland of the OHWM.
   c. All utility and service lines located waterward of the OHWM must be below the pier deck. All utility and service lines located upland of the OHWM shall be underground, where feasible.
   d. Moorage facilities shall be marked with reflectors, or otherwise identified to prevent unnecessarily hazardous conditions for water surface users during the day or night.
   e. Exterior finish shall be generally non-reflective.
   f. 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.
   g. See KZC 83.470 Lighting Standards for required lighting.
      h. The following structures and improvements are not permitted:
      a.) Covered moorage, boathouses, or other walled covered moorage, except boat canopies that comply with the standards in this subsection.
      b.) Skirting on any structure
      c.) Aircraft moorage
5. New Pier or Dock Dimensional Standards -
   a. Moorage structures shall 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:
      1) 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;
      2) The moorage structure is not larger than is necessary to moor the specified number of boats;
      3) The moorage structure will not interfere with the public use and enjoyment of the water or create a hazard to navigation; and
      4) 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 standards:

New Pier, Dock or Moorage Piles for Detached, Attached or Stacked Dwelling Units	Dimensional and Design Standards
Maximum Width	4 ft. within 30 ft of the OHWM for pier, dock or floating deck 6 ft. for pier or dock more than 30 ft. waterward of the OHWM 8 ft. for ells 4 ft. for fingers, 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. 6 ft. for float decking attached to a pier An alternative design in lieu of meeting these requirements shall be allowed if approved by other state and federal agencies.
Height of piers and diving boards	Minimum of 1.5 ft above ordinary high water to bottom of pier stringers, except the floating section of a dock and float decking attached to a pier Maximum of 3 ft. above deck for diving boards or similar features above the deck surface Maximum of 3 feet above deck for safety railing, which shall be an open framework
Minimum Water Depth for ells and float decking attached to a pier	Must be in water with depths of 9 feet or greater at the landward end of the ell or finger. Must be in water with depths of 10 feet or more at the landward end of the float
Decking for piers, docks walkways, ells and fingers	Must be fully grated with 40% open area If float tubs for docks preclude use of fully grated decking material, then a minimum of 2 ft. of grating down the center of the entire float shall be provided
Location of ells, fingers and deck platforms	No closer than 30 ft. waterward of the OHWM Within 30 ft. of the OHWM, only access ramp portion of pier or dock is allowed
Pilings and Moorage Piles	First set of piles located no closer than 18 ft from OHWM Pilings shall be composed of steel, concrete, plastic or untreated wood. Piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds.

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6. Mitigation –

All proposals involving new piers or docks are subject to the following mitigation requirements:

a. Any existing in-water and overwater structures shall be removed if they are associated with either a moorage structure or other recreational use that is located within 30 feet of the OHWM.

b. Emergent vegetation shall be planted waterward of the OHWM, unless the City determines that it is not appropriate or feasible.

c. Native riparian vegetation shall be planted 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 vegetative riparian zone along all properties sharing the pier.

d. Mitigation plantings shall be subject to the following requirements:

1) 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 or shoreline appropriate 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.

2) An alternative planting plan or mitigation measure in lieu of meeting these requirements shall be allowed if approved by other state and federal agencies. In addition, the City shall 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.

3) Vegetation placement –

a) In shoreline environments that require a view corridor, 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.

b) 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. If the required vegetation cannot be placed without unreasonably obstructing water-facing views on the subject or neighboring properties, at the time of planting or upon future growth, then an alternative planting plan or mitigation measure in lieu of meeting these requirements may be proposed for approval by the appropriate planning official. The planning official shall approve such plan or measure if it constitutes a reasonably effective alternative, or may impose conditions the extent necessary to make the plan or measure a reasonably effective alternative. If the alternative plan or measure is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal.

4) In addition to a native planting plan, a 5 -year vegetation maintenance and monitoring plan shall be submitted to the City for approval. 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 5 years, that include written and photographic

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documentation on tree and shrub mortality, subject to the following success criteria:

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

ii) 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, provided that the reports address a 5 year maintenance and monitoring plan.

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

7. Replacement, Additions and Repairs -

a. Replacement - Replacement of Piers and Docks serving Detached, Attached or Stacked Dwelling Units shall be considered under the provisions for New Piers and Docks Serving Detached, Attached or Stacked Dwelling Units established in KZC 83.280.

Comment [A25]: Same comment as above.

b. Additions – Proposals involving the modification and/or enlargement of existing piers or docks must comply with the following measures:

Additions to Pier, Dock or Moorage Piles for Detached, Attached or Stacked Dwelling Units	**Requirements**
Addition or enlargement	Must demonstrate that there is a need for the enlargement of an existing pier or dock based upon safety concerns or inadequate depth of water.
Pier or dock length and width, height, water depth, location, decking and pilings	Enlarged portions must comply with the dimensional, materials, and mitigation standards for new piers as described in KZC 83.280.
Decking for piers, docks walkways, ells and fingers	Must convert an area of existing nearshore decking to grated decking equivalent in size to the additional surface coverage
Mitigation	Existing skirting shall be removed and may not be replaced Existing in-water and overwater structures located within 30 feet of the OHWM, except for existing or authorized shoreline stabilization measures or pier or docks, shall be removed at a 1:1 ratio to the area of the addition

Comment [A26]: same comment as above

Comment [A27]: same comment as above

c. Repair– 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:

Repair to Pier, Dock or Moorage Piles for Detached, Attached or Stacked Dwelling Units	**Requirements**
Replacement piles	Must use materials as described under KZC 83.280.5 Must minimize the size of piles and maximize the spacing between pilings to the extent allowed by site-specific engineering or design considerations
Replacement of 50 percent or more of the decking or 50 percent or more of decking substructure	Must replace any solid decking surface located within the nearshore 30 feet of the pier or dock with a grated surface material

Comment [A28]: same comment as above

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 cumulative repairs of an existing pier or dock would make a proposed repair exceeds the threshold established in KZC 83.280.5.b, above, the repair proposal shall be reviewed under KZC 83.280 for a new pier or dock.

8. Boatlifts, Boatlift Canopies and Moorage Piles for serving Detached, Attached or Stacked Dwelling Units –

Boatlifts, boatlift canopies and moorage piles may be permitted as an accessory to piers and docks, subject to the following regulations:

Boatlift, Boat Canopy and Moorages Buoy for Detached, Attached or Stacked Dwelling Units	**Regulations**

Location	Boat lifts shall placed as far waterward of the OHWM as feasible and safe, within the limits of the dimensional standards for piers and docks established in KZC 83.280.5 Bottom of a boatlift canopy shall be elevated above the boatlift to the maximum extent feasible, the lowest edge of the canopy must be a least 4 ft. above the ordinary high water, and the top of the canopy must not extend more than 4 ft. above an associated pier. Moorage piles shall not be closer than 30 ft. from OHWM or any farther waterward than the end of the pier or dock Moorage piles shall be located within 12 ft. of a pier or dock
Maximum Number	1 freestanding or deck-mounted boatlift is allowed per dwelling unit on the subject property. 2 jet ski lifts or 1 fully grated platform lift is permitted per dwelling unit on the subject property. 2 boatlift canopies or equal to 10 percent of the dwelling units on the subject property, whichever is greater.
Canopy Materials	Must be made of translucent fabric materials. Must not be constructed of permanent structural material.
Fill for Boatlift	Maximum of 2 cubic yards of fill are permitted to anchor a boatlift, subject to the following requirements: • May only be used if the substrate prevents the use of anchoring devices which can be embedded into the substrate • Must be clean • Must consist of rock or pre-cast concrete blocks • Must only be used to anchor the boatlift • Minimum amount of fill is utilized to anchor the boatlift

9. Submittal Requirements - In addition to submitting an application to construct a new, enlarged or replacement pier or dock, the applicant shall submit an assessment of the impacts and measures taken to avoid, minimize, and mitigate impacts. See Section 83.360 KZC for information on mitigation sequencing.

83.290 Marinas and Moorage Facilities Associated with Commercial Uses

1. General –

a. Marinas shall not be approved in cases where it is 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.

b. Marinas shall be designed and located according to the following criteria:

1) Shall not interfere with the public use and enjoyment of the water or create a hazard to navigation;

2) Shall meet KZC 83.360 for avoiding adverse impacts, minimizing impacts and mitigating unavoidable impacts; and

3) Shall be located only at sites with sufficient water depth, adequate navigational and vehicular access, and not adjacent to an outlet of a stream.

2. Setbacks

Moorage structures within marinas shall comply with the following location standards:

Feature	Minimum Setback Standards
Side property lines	10 ft.
Lot containing a detached dwelling unit	The area defined by a line that starts where the OHWM of the lot intersects the side property line of the lot closest to the moorage structure and runs waterward toward the moorage structure and extends 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. This standard shall not apply within the Urban Mixed shoreline environment.
Another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required north and south property line setback	25 ft.
Outlet of a stream regulated under KZC 90, including piped streams	Maximum distance possible while meeting other required setback standards established under this section
Public park	100 feet; or The area defined by a line that starts where the OHWM of the park intersects with the side property line of the park closest to the moorage structure and extends 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. This

	standard shall not apply within the Urban Mixed shoreline environment.

3. Number of Moorage Slips –

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

1) The suitability of the environmental conditions, such as, but not limited to: the presence of submerged aquatic vegetation, proximity to shoreline associated wetlands, critical nesting and spawning areas, water depth, water circulation, sediment inputs and accumulation, and wave action.
2) The ability of the land landward of the high waterline to accommodate the necessary support facilities.
3) The demand analysis submitted by the applicant to demonstrate anticipated need for the requested number of moorages.

4. General Standards -

a. See KZC 83.370 for required state and federal approval.
b. Structures, other than each moorage structure or public access pier, shall not be waterward of the OHWM. For regulations regarding public access piers, see KZC 83.220.
c. At least 2 covered and secured waste receptacles shall be provided upland of the OHWM.
d. Utility and service lines located waterward of the OHWM must be below the pier deck. Utility and service lines located upland of the OHWM shall be underground, where feasible.
e. Public restrooms shall be provided upland of the OHWM.
f. At least 1 pump-out facility for use by the general public shall be provided. This facility must be easily accessible to the general public and clearly marked for public use.
g. 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.
h. Moorage facilities shall be marked with reflectors, or otherwise identified to prevent unnecessarily hazardous conditions for water surface users during the day or night.
i. Exterior finish shall be generally non-reflective.
j. 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.
k. See KZC 83.470 Lighting Standards for required lighting.
l. Covered moorage, including boatlift canopies, is not permitted.
m. Aircraft moorage is not permitted, except as associated with an approved float plane landing and mooring facility.
n. Marinas and other moorage facilities associated with commercial uses shall be designed and operated consistent with federal and state water quality laws and 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. Rules for spill prevention and response, including reporting requirements, shall be posted on site.

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

5. New Pier or Dock Dimensional Standards –

a. Moorage structures shall 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:

1) 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;

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

3) 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 of the lake.

b. (already in 83.290.1.b)For public access piers, docks or boardwalks associated with public parks and other public facilities see KZC 83.220.5 for allowed width of the structure.

c. Piers and docks shall be the minimum size necessary to meet the needs of the proposed water-dependent use and shall meet the following dimensional and design standards:

Marinas and Moorage Facilities Associated with Commercial Uses	**Dimensional and Design Standards**
Maximum Width	6 ft. for access ramp portion of pier or dock and primary walkways 8 ft. for ells 4 ft. for fingers, 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. 6 ft. for float decking attached to a pier. An alternative design in lieu of meeting these requirements may be allowed if approved by other state and federal agencies.
Height of piers, diving boards and railings	Minimum of 1.5 ft above ordinary high water to bottom of pier stringer, except the floating section of a dock and float decking attached to a pier Maximum of 3 ft. above deck for diving boards or similar features above the deck surface Maximum of 3 ft. above deck for safety railing, which shall be an open framework
Decking for piers, docks walkways, ells and fingers	Fully grated with 40% open area If float tubs for docks preclude use of fully grated decking material, then a minimum of 2 ft. of grating down the center of the entire float shall be provided
Location of ells, fingers and deck platforms	No closer than 50 ft. waterward of the OHWM Within 50 ft. of the OHWM, only access ramp portion of pier or dock is allowed

Pilings	First set of piles located no closer than 18 ft from OHWM Pilings shall be composed of steel, concrete, plastic or untreated wood. Piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds.

6. Replacement, Additions and Repairs –

a. Replacement - Replacement of marinas or portions thereof shall be considered under the provisions for marinas established in KZC 83.290.

b. Additions– Proposals involving the modification and/or enlargement of marinas must comply with the following measures:

Additions to Marinas and Moorage Facilities Associated with Commercial Uses	**Requirements**
Addition or enlargement	Must demonstrate that there is a need for the enlargement of an existing pier or dock based upon safety concerns or inadequate depth of water.
Pier or dock length and width, height, water depth, location, decking and pilings	Enlarged portions must comply with the dimensional, materials, and mitigation standards for new piers as described in KZC 83.290.
Decking for piers, docks walkways, ells and fingers	Must convert an area of existing nearshore decking to grated decking equivalent in size to the additional surface coverage
Mitigation	Existing skirting shall be removed and may not be replaced Existing in-water and overwater structures located within 50 feet of the OHWM, except for existing or authorized shoreline stabilization measures or pier or docks, shall be removed at a 1:1 ratio to the area of the addition

c. Repair– 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:

Repair to Marinas and Moorage Facilities Associated with	**Requirements**

Commercial Uses	
Replacement piles	Must use materials as described under KZC 83.290.5 Must minimize the size of piles and maximize the spacing between pilings to the extent allowed by site-specific engineering or design considerations
Replacement of 10 percent or more of the decking or decking substructure	Must replace any solid decking surface located within the nearshore 30 feet of the pier or dock with a grated surface material
Repair of the roof structure of existing boathouses or other similar covered moorage	Must use translucent materials

Other repairs to existing legally established marinas 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 cumulative repairs of an existing marina would make a proposed repair exceeds the threshold established in KZC 83.290.5.b, above, the repair proposal shall be reviewed under KZC 83.290 for a new marina.

7. 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 KZC 83.360 for mitigation sequencing.

83.300 Shoreline Stabilization

1. General -

a. The standards in this section apply to all developments and uses in shoreline jurisdiction.

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c. If structural stabilization is necessary to protect structures and/or the substantial enjoyment of property landward of the OHWM, then the feasibility of soft structural measures shall be evaluated prior to consideration of hard structural measures. Soft stabilization measures must be used unless the City reasonably determines that it is not to be feasible based on information required in this section and provided by the applicant.

d. Plate XX provides guidance on different shoreline stabilization measures that should be considered, based upon the unique characteristics of the subject property and shoreline.

Comment [A29]: As a general comment, we found this Section exceedingly difficult to read and follow because of its drafting and organization.

Comment [A30]: This provision is problematic because it could be misinterpreted to be a requirement independent of all other specific regulations. In other words, the applicant could meet all specific regulations and yet be told that the project is prohibited or must be changed based on this general provision.

Deleted: New development or redevelopment shall be located and designed to avoid the need for new or future soft or hard shoreline stabilization to the maximum extent feasible.

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Comment [A31]: It is a significant concern of property owners that the new regulations could result in the loss of significant amounts of their property. The language in these proposed regulations that lists only protection of the primary structure (not including accessory structures such as detached garages, or the valuable lakeshore property itself) lends credence to this fear. This revision addresses this point.

e. During construction or repair work on a shoreline stabilization measure, areas of temporary disturbance within the shoreline setback shall be restored as quickly as feasible to their pre-disturbance condition or better to avoid impacts to the ecological function of the shoreline. Also see KZC 83.430 for in-water construction activity.

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f. The following is a summary of the key requirements found in KZC 83.300.2 through KZC 83.300.5:

Shoreline Stabilization Measures	Requirements
Soft Shoreline versus Hard Shoreline	Natural shoreline is preferred, but if a stabilization measure is demonstrated to be needed to protect structures or property, then soft stabilization must be considered prior to hard stabilization.
New or Enlargement	Requires geotechnical report, except when existing structure is 10 feet or less from OHWM. Requires evaluation of the feasibility of soft shoreline stabilization measures in lieu of hard structural shoreline stabilization measures, as well as design recommendations for minimizing structural shoreline measures. Enlargement includes additions and increases in size (such as height, width, length, or depth) to existing shoreline stabilization measures.
Major Repair or Replacement	The following shall be regulated as new stabilization measure: • Repair of a collapsed or eroded stabilization structure or a demonstrated a loss of structural integrity of stabilization structure; or Repair of toe rock or footings; and Greater than 15 feet in continuous linear length • 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. . Requires a needs assessment, except not when existing structure is 10 feet or less

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Comment [A32]: see comment below

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	from the OHWM or when replaced with soft stabilization measure.
Minor Repair	Does not meet threshold of new, enlarged, major repair or replacement measurement. No geotechnical report or needs assessment required.

2. New or Enlarged Structural Shoreline Stabilization –

a. New hard or soft structural shoreline stabilization measures shall not be authorized, except when a geotechnical report confirms that that there is a significant possibility that an existing structure and/or property will be damaged within 5 or more years as a result of shoreline erosion in the absence of such 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.

b. Enlargement of an existing structural stabilization shall include additions to or increases in size (such as height, width, length, or depth).

c. Structural stabilization measures shall not be allowed, except as follows:

1). To protect an existing structure, including residences, when reasonable evidence, documented by a geotechnical analysis, is provided to the City that there is a significant possibility that the structure is in danger from shoreline erosion caused by waves. The geotechnical analysis shall 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 an existing structure, including residences, is located 10 feet or less from the OHWM.

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

a) Upland conditions, such as drainage problems and the loss of vegetation, are not causing the erosion;

b) Nonstructural measures, planting vegetation, or installing on-site drainage improvements and, for new development, placing the development farther from the shoreline are not feasible or not sufficient; and

c) The need to protect structures from potential damage due to erosion is demonstrated through a geotechnical report. Natural processes, such as waves, must cause the damage.

3). To protect 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. Submittal Requirements for New or Enlarged Replacement Stabilization Measures -

The following shall be submitted to the City:

a. A geotechnical report prepared by a qualified professional with an engineering degree. The report shall include the following:

Comment [A33]: The issue here is major storms, which do not occur frequently, but rather on long intervals, perhaps exceeding 10 years. Property owners justifiably fear being exposed to storm damage against which they cannot prepare by virtue of the short time horizon of this provision. Obviously, the City will not hold harmless owners from such damage, so it should at the very least not prohibit them from taking steps at their own expense to protect themselves.

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Comment [A34]: We are confused about the intent and effect of this provision, which appears to be a definition.

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Comment [A35]: These changes are necessary for consistency with the standard set forth in 2.a. above.

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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.

2.) An assessment of the cause of erosion, looking at processes occurring both waterward and landward of the OHWM.

Geotechnical report requirements for new or enlarged hard or soft structural shoreline stabilization measures shall be waived when a structure, including a residence, is located 10 feet or less from the OHWM.

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b. An assessment prepared by a qualified professional (e.g., shoreline designer or other consultant familiar with lakeshore processes and shore stabilization), containing the following:

1) An evaluation 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. The evaluation should address the feasibility of implementing options presented in Plate XX, given an assessment of the subject property's characteristics.

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2) Design recommendations for minimum sizing of soft structural or hard structural shoreline stabilization materials, including gravel and cobble beach substrates necessary to dissipate wave energy, eliminate scour, and provide long-term shoreline stability.

c. See additional submittal requirements below in subsections 6, 7 and 8.

4. Replacement or Repair of Structural Shoreline Stabilization -

a. Minor Repair

1) The following improvements shall be considered as "minor repair" of a hard or soft shoreline measure:

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 less than 15 feet in continuous linear length; or

Comment [A36]: Here and to the extent used elsewhere, 15 feet seems to be excessively small, and a percentage figure would be preferable. The 50% standard for pier decking, for example, would seem to be appropriate.

b) A repair to less 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 threshold for a 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 for major repair.

2) Minor repairs do not require a geotechnical report or a needs assessment.

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b. Major Repair or Replacement

1) Major repair or replacement shall be treated as a new shoreline stabilization measure subject to the restrictions of subsection 2 above and the requirements of this section, except for the requirement to prepare a geotechnical analysis.

2) 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 through a report, drawings or photos to protect structures or

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property from erosion caused by waves or other natural processes operating at or waterward of the OHWM.

In those circumstances where a structure, including residences, is located ten (10) feet or less from the OHWM, demonstration of need is not required.

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3) Replacement hard structural stabilization measures shall not encroach waterward of the OHWM or waterward of the existing shoreline stabilization measure unless the structure was constructed prior to January 1, 1992 (RCW 90.58.100.6 and WAC 173.26.241 and WAC 173.26.231.3. j) 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.

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4) Hard and soft stabilization measures may allow a reasonable amount of gravel, logs and rocks waterward of the OHWM, as approved by the City and federal and state agencies, to provide enhancement of shoreline ecological functions through creation of nearshore shallow-water habitat.

5. Submittal Requirements for Major Repairs or Replacements of Stabilization Measures -

The following shall be submitted to the City:

a. A written narrative that provides a demonstration of need shall be submitted. A qualified professional (e.g., shoreline designer or other consultant familiar with lakeshore processes and shore stabilization), but not necessarily a licensed geotechnical engineer shall prepare a written narrative. The demonstration of need shall consist of the following:

1) An assessment of the necessity for continued structural stabilization, considering site-specific conditions such as water depth, orientation of the shoreline, wave fetch, and location of the nearest structure. The evaluation should address the feasibility of implementing options presented in Plate XX, given an assessment of the subject property's characteristics.

2) An assessment of erosion potential resulting from the action of waves or other natural processes operating at or waterward of the OHWM in the absence of the hard structural shoreline stabilization.

3) 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.

4) Design recommendations for minimizing impacts of any necessary hard structural shoreline stabilization.

5) A demonstration of need shall 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 structure, including a residence, is located 10 feet or less from the OHWM.

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b. See additional submittal requirements below in subsections 6, 7 and 8.

6. General Submittal Requirements for New, Enlarged, Replacement and Major Repair Measures -

The following shall be submitted to the City:

a. 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 OHWM.

2) 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:

   a) 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;

   b) Allow safe passage and migration of fish and wildlife; and

   c) Minimize or eliminate juvenile salmon predator habitat.

b. Detailed 5-year vegetation maintenance and monitoring program to include the following:

   1) Goals and objectives of the shoreline stabilization plan;

   2) Success criteria by which the implemented plan will be assessed;

   3) A 5-year maintenance and monitoring plan, consisting of one site visit per year by a qualified professional, with annual progress reports submitted to the Planning Official and all other agencies with jurisdiction;

   4) A contingency plan in case of failure; and

   5) Proof of a written contract with a qualified professional who will perform the monitoring.

c. Fee for City staff or a consultant selected by the City to review the shoreline stabilization plan, the monitoring and maintenance program, the narrative justification of demonstrated need, and drawings. In addition, the Planning Official may require a fee for City staff or a consultant to review the geotechnical report and recommendations. In the case of use of a consultant, the applicant shall sign the City's standard 3-party contract.

7. Maintenance Agreement for Soft Shoreline Stabilization -

   In lieu of submitting a maintenance security for a soft stabilization measure, the applicant shall complete and submit a 5-year period maintenance agreement, using the City's standard form, for recording to ensure maintenance of the soft shoreline stabilization measure.

8. General Design Standards - When a hard or soft structural shoreline stabilization measure is determined 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 feasible, 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 shall be minimized to the maximum extent feasible, and extend into the subject property from adjacent properties no more than reasonably required.

   b. For enlarged, major repair or replacement of structural shoreline stabilization measures, excavation and fill activities associated with the structural stabilization shall be landward of the existing OHWM, except when not feasible due to existing site constraints or to mitigate impacts of hard structural stabilization by increasing shallow water habitat with gravel, rocks and logs.

   c. For short-term construction activities, all structural stabilization measures must minimize and mitigate any adverse impacts to ecological functions by compliance with appropriate timing restrictions, use of best management practices to prevent water quality impacts

Comment [A37]: Annual inspection would be sufficient, and would cost the property owner half as much.

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Comment [A38]: Regarding fees for City staff, we would like to discuss how these will be made reasonable. While we understand that these are permitted (although not required) by state law, it would seem appropriate the citizens be told the costs in advance, receive detailed invoices showing the persons and hours billed, and assured that rates will be reasonable (e.g., 80% of market rates).

Comment [A39]: Is it necessary to be so prescriptive given that site circumstances will vary considerably from case to case?

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related to upland or in-water work, and stabilization of exposed soils following construction.

d. For long-term impacts, new, enlarged or major repair or replacement of structural shoreline stabilization shall incorporate the following measures into the design wherever feasible:

1) Limiting the size of hard structural shoreline stabilization measures to the minimum necessary, including height, depth, and mass.

2) Shifting hard stabilization measures 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.

Comment [A40]: This is of particular concern to property owners, who fear loss of highly valuable property if existing vertical bulkheads are required to slope landward.

e. For new and enlarged shoreline stabilization, the following additional measures shall be incorporated into the design:

1) To increase shallow-water habitat, install gravel/cobble beach fill waterward of the OHWM, grading slope to a maximum of 1 Vertical (V): 4 Horizontal (H). The material shall be sized and placed to remain stable and accommodate alteration from wind- and boat-driven waves.

2) Plant native riparian vegetation as follows:

a) At least 75 percent of the nearshore riparian area located along the edge of the OHWM shall be planted.

b) The vegetated portion of the nearshore riparian area shall average 10 feet in depth from the OHWM, but may be a minimum of five 5 feet wide to allow for variation in landscape bed shape and plant placement provided that the total square footage of the planted area equals 10 feet along the water's edge.

c) Restoration of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least 3 trees per 100 linear feet of shoreline must be included in the plan.

d) Plant materials must be native and selected from the Kirkland Native Plant List, or other native or shoreline appropriate species approved by the Planning Official or Urban Forester.

e) An alternative planting plan or mitigation measure in lieu of meeting this section shall be allowed if approved by other state and federal agencies. In addition, the City shall 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.

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f) For public views, plant materials shall be selected and positioned on the property so as not to obscure view within designated public view corridors from the public right-of-way to the water and the shoreline on the opposite side of the Lake at the time of planting or upon future growth

g) For private views, plant materials may be selected and positioned to maintain private views to the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met. If the required vegetation cannot be placed without unreasonably obstructing water-facing views on the subject or neighboring properties, at the time of planting or upon future growth, then an alternative planting plan or mitigation measure in lieu of meeting these requirements may be proposed for approval by the appropriate planning official, who may approve, approve with reasonable conditions, or deny the request

(provided that the official may not unreasonably withhold such approval, and any denial shall be accompanied by a reasonable description of what changes would be required to secure approval).

f. The shoreline stabilization measure shall be designed to not significantly interfere with normal surface and/or subsurface drainage into Lake Washington, constitute a hazard to navigation or extend waterward more than the minimum amount necessary to achieve effective stabilization.

g. Stairs or other water access measures may be incorporated into the shoreline stabilization, but shall not extend waterward of the shoreline stabilization measure.

h. The shoreline stabilization measures shall be designed to ensure that the measures do not restrict public access or make access unsafe to the shoreline, except where such access is modified under the provisions of KZC Section 83.420 for public access. Access measures shall not extend farther waterward than the face of the shoreline stabilization structure.

i. When shoreline stabilization measures pursuant to any action required by this Chapter, or intended to improve ecological functions result in shifting the OHWM landward of the pre-modification location, structure setbacks from the OHWM or lot area for the purposes of calculating lot coverage shall be measured from the pre-modification location. The pre-modification OHWM shall be recorded in a form approved by the City Attorney and recorded in the King County Recorder's Office.

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j. See subsection 10 below concerning additional design standards for hard structural stabilization and subsection 11 for soft structural stabilization.

k. If shoreline stabilization measures pursuant to any action required by this Chapter, or intended to improve ecological functions shift the OHWM 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 Recorder's Office, consenting to the shoreline jurisdiction creation and/or increase on such property.

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10. Specific Design Standards for New or Enlarged Hard Structural Stabilization –

In addition to the general design standards in subsection 9, the following design standards shall be incorporated:

a. Where hard stabilization measures are not located on adjacent properties, the construction of a hard stabilization measure on the site shall tie in with the existing contours of the adjoining properties, as feasible, such that the proposed stabilization will not cause erosion of the adjoining properties.

b. Where hard stabilization measures are located on adjacent properties, the proposed hard stabilization measure may tie in flush with existing hard stabilization measures on adjoining properties, but by no more than as reasonably required into the adjacent property. The new hard stabilization measure shall not extend waterward of OHWM, except as necessary to make the connection to the adjoining hard stabilization measures. No net intrusion into the lake and no net creation of upland shall occur with the connection to adjacent stabilization measures.

Comment [A41]: Same comment as above

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c. Fill behind hard shoreline stabilization measures 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.

11. Specific Design Standards for Soft Structural Stabilization –

In addition to the general design standards in subsection 9, the following design standards shall be incorporated:

a. Provide sufficient protection of adjacent properties by tying in with the existing contours of the adjoining properties to prevent erosion at the property line. Proposals that include necessary use of hard structural 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 stabilization connections to adjacent properties shall be the minimum needed and extend into the subject property from adjacent properties no more than 10 feet.

b. Size and arrange any gravels, cobbles, logs, and boulders so that the improvement remains stable in the long-term and dissipate wave energy, without presenting extended linear faces to oncoming waves.

EMERGENCY MEASURES

Comment [A42]: We would like to discuss the addition of a provision allowing emergency repairs.

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 of 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. The benefits to the public provided by the moorage facility or other public water-dependent uses protected by the breakwater outweigh any undesirable effects or adverse impacts on the environment or nearby waterfront properties.

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 its purpose and that the design will result in the minimum possible adverse impacts upon the environment, 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 waterward of the OHWM may be allowed for only the following purposes:

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 must 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 OHWM 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 OHWM. The project must be associated with a significant habitat enhancement project.

3. Depositing dredge materials waterward of the OHWM shall only be allowed in approved sites, only when the material meets or exceeds state pollutant standards, and only for the purposes of fish or wildlife habitat improvement or permitted beach enhancement.

4. 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 -

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 OHWM and have data points at a minimum of 2-foot depth increments.

2) A habitat survey identifying aquatic vegetation, potential native fish spawning areas, or other physical or biological habitat parameters.

3) Information on the stability of lakebed adjacent to proposed dredging area.

4) Information on the composition of the material to be removed.

c. A description of:

1) Dredging procedure, including length of time it will take to complete dredging, method of dredging, and amount of material removed.

2) Where the materials will be placed to allow for sediment to settle, by what means the materials will be transported away from the dredge site, and specific approved land or open-water disposal site.

3) Plan for anticipated future maintenance dredging and disposal, including frequency and quantity, for at least a 20-year period.

d.

e. Copies of state and federal approvals.

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.

   h. Except as is necessary during construction, dirt, rocks and similar materials shall not be stockpiled on the subject property. If stockpiling is necessary during construction, it must be located as far as feasible from the lake and strictly contained to prevent erosion and runoff.

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2. Permitted Activities -

   a. Land surface modification is prohibited within the shoreline setback, except for the following:

      1) For the purpose of shoreline habitat and natural systems enhancement projects, setting back shoreline stabilization measures or portions of shoreline stabilization measures from the OHWM, or soft shoreline stabilization measures under a plan approved by the City.

      2) As authorized by a valid shoreline permit or approval issued by the City.

      3) Associated with the installation of improvements located within the shoreline setback or waterward of the OHWM, as permitted under KZC Section 83.190.2.

      4) Removal of prohibited vegetation.

Comment [A43]: Question: what is "prohibited vegetation"? Regardless, can removal of vegetation be "land surface modification"?

      5) As performed in the normal course of maintaining existing vegetation on a lot associated with existing 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) As necessary to maintain or upgrade the structural safety of a legally established structure.

8) For 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.

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Comment [A44]: Drafting suggestion.

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 floodwater-holding capabilities.
2. Fills landward and waterward of the OHWM 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 use or public access use, including maintenance of beaches or
   b. As part of an approved mitigation or restoration project.
4. Any placement of materials landward of the OHWM 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 OHWM, including only those identified as noxious weeds on King County's published Noxious Weed List, unless otherwise authorized by the City.

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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 City's Restoration Plan.

e. Implementation of any project or activity identified in the *Final WRIA 8 Chinook Salmon Conservation Plan and related documents.*

General Regulations

83.360 No Net Loss Standard and Mitigation Sequencing

1. Under WAC Chapter 173-26, uses and shoreline modifications along Kirkland's shoreline shall be designed, located, sized, constructed and/or maintained to achieve no net loss of shoreline ecological functions.
2. In order to assure that development activities contribute to meeting the no net loss provisions by avoiding, minimizing, and mitigating for adverse impacts to ecological functions or ecosystem-wide processes, an applicant shall utilize the following mitigation sequencing guidelines, which appear in order of preference, during the design, construction and operation of the proposal:
   a. Avoiding the impact altogether by not taking a certain action or parts of an action;
   b. 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;
   c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
   d. Reducing or eliminating the impact over time by preservation and maintenance operations;
   e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and
   f. Monitoring the impact and the compensation projects and taking appropriate corrective measures.
3. Failure to demonstrate that the mitigation sequencing standards have been met may result in permit denial. The City may request necessary studies by qualified professionals to determine compliance with this standard and mitigation sequencing.
4. In addition, uses shall be located, designed and configured to prevent significant adverse impacts on water quality, fish and wildlife habitat, and the environment and the need for new shoreline stabilization or flood hazard reduction measures.
5. Maintenance activities shall be conducted in a manner that minimizes impacts to fish, wildlife, and their associated habitat and utilizes best management practices.

Comment [A45]: Discussion point: application of this sequencing provision to activities related to residential uses (which are protected) is of concern.

Comment [A46]: See comment immediately above. Also, will this provision be applied independently of the specific procedures required by this Chapter for certain activities?

Comment [A47]: Same comment as above.

83.370 Federal and State Approval

1. All work at or waterward of the OHWM 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.
2. 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 applicable laws and regulations.
3. If structures are proposed to 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.

Comment [A48]: This clarification is needed to prevent this provision from requiring compliance with anything that is not a properly applicable law or regulation.

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83.380 Shoreline Setback Reduction

1. Improvements permitted within the Shoreline Setback - See standards contained in KZC Section 83.190.2.
2. Shoreline Setback Reductions –
   a. In the Residential – L shoreline environment, the shoreline setback may be reduced by 2 feet if subject to the Historic Preservation provisions of KMC 22.28.048, but in no case

closer than 25 feet with the exception in the Residential L - shoreline environment south of the Lake Ave West street end where the minimum shoreline setback is 15 feet.

Comment [A49]: QUESTION: should this be south of Waverly Park?

b. The required shoreline setback may be reduced to a minimum of 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. In the portion of the Residential-L environment located south of the Lake Ave W Street End Park, the required shoreline setback may be reduced to a minimum of 15 feet. The following standards shall apply to any reduced setback:

Comment [A50]: QUESTION: should this be south of Waverly Park?

1)The minimum setback that may be approved through this reduction provision is 25 feet in width, except that properties in the Residential L – shoreline environment south of the Lake Street Ave street end may reduce to a minimum setback of 15 feet. Any further setback reduction below 25 feet or 15 feet, respectively, in width shall require approval of a shoreline variance application.

Comment [A51]: QUESTION: should this be south of Waverly Park?

2)The City shall accept previous actions that meet the provisions established in the setback reduction method chart in subsection d. below as satisfying the requirements of this section, provided that all other provisions are completed, including but not limited to the agreement noted in Section 83.380 2.b.4) below are completed. The reduction allowance for previously completed reduction actions may only be applied once on the subject property.

Comment [A52]: Acceptance should be mandatory given that there does not appear to be any reasonable basis for refusal.

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Comment [A53]: As a general matter, the many abbreviated cross references in this document are very challenging to follow. They could be made unambiguous by simply referring to the complete section number.

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3)Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built plan of any completed improvements authorized or required under this subsection.

4) All property owners who obtain approval for a reduction in the setback must record the final approved setback and corresponding conditions, including maintenance of the conditions throughout the life of the development, unless otherwise approved by the City, in a form acceptable to the City Attorney, and recorded with the King County Recorder's Office. The applicant shall provide land survey information for this purpose in a format approved by the Planning Official.

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c. The reduction allowance shall be applied to the required shoreline setback. For instance, if a reduction is proposed in the Residential – L environment, where the shoreline setback requirment is 30% of the average parcel depth, the shoreline setback could be reduced to 20% of the average parcel depth, but in no case less than 25 feet, if Reduction Mechanism Item 1 in the table below is used.

d. The chart below describes the setback reduction options:

Shoreline Setback Reduction Options	**Reduction Allowance**	
	Standard Reduction (min. 25' setback)	**Residential-L, south of Lake Ave W Street End Park (min. 15' setback)**

	Shoreline Setback Reduction Options	Reduction Allowance	
		Standard Reduction (min. 25' setback)	**Residential-L, south of Lake Ave W Street End Park (min. 15' setback)**
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 OHWM along at least 75 percent of the linear lake frontage of the subject property. This can include the removal of an existing hard structural shoreline stabilization measure 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 conjunction with Method #2 below	Reduce required setback by 15 percentage points	Reduce required setback by 15 feet
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 OHWM along at least 15 linear feet of the lake frontage of the subject property. This can include the removal of an existing hard structural shoreline stabilization measure 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 Method #1 above;	Reduce required setback by 5 percentage points	Reduce required setback by 5 feet
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 5 feet wide on both side of the stream, and must not encumber adjacent properties with a 5 foot wide buffer without express written permission of the adjacent property owner. A qualified professional must design opened watercourses. The opened watercourse shall be exempt from the buffer provisions of KZC 83.490. The opened watercourse is exempt from the buffer requirements and standards of KZC 83.510.	Reduce required setback by 5 percentage points	Reduce required setback by 5 feet
4	Hard structural shoreline stabilization measure is setback from the OHWM between 2 ft. to 4 ft based on feasibility and existing conditions and/are sloped at a maximum 3 Vertical (V): 1 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	Reduce required setback by 5 feet

Shoreline Setback Reduction Options		Reduction Allowance	
		Standard Reduction (min. 25' setback)	**Residential-L, south of Lake Ave W Street End Park (min. 15' setback)**
5	Soft shoreline stabilization measures are installed waterward of the OHWM. Soft shoreline stabilization measures may include the use of gravels, cobbles, boulders, and logs, as well as vegetation. The material shall be of a size 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	Reduce required setback by 2 feet
Upland Related Conditions or Actions			
6	Installation of biofiltration/infiltration mechanisms in lieu of piped discharge to the lake, such as mechanisms that infiltrate or disperse surface water on the surface of the subject property, These mechanisms shall be 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 requirements in the City's current surface water design manual.	Reduce required setback by 2 percentage points	Reduce required setback by 2 feet
7	Increasing the width of the required landscape strip within the reduced shoreline setback a minimum of 5 additional feet in width.	Reduce required setback by 2 percentage points	Reduce required setback by 2 feet
6	Installation of pervious material for all pollution generating surfaces such as driveways, parking or private roads that allows water to pass through at rates similar to pre-developed conditions. Excluded from this provision is the private easement road of 5th Ave West in the Residential – L shoreline environment.	Reduce required setback by 2 percentage points	Reduce required setback by 2 feet
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	Reduce required setback by 2 feet
8	Preserving or restoring at least 20 percent of the total lot area outside of the reduced setback and any critical areas and their	Reduce required	Reduce required

Shoreline Setback Reduction Options		Reduction Allowance	
		Standard Reduction (min. 25' setback)	Residential-L, south of Lake Ave W Street End Park (min. 15' setback)
	associated buffers as native vegetation.	setback by 2 percentage points	setback by 2 feet

83.390 Site and Building Design Standards

1. 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:
   a. Buildings are designed with windows that orient toward the shoreline.
   b. Buildings are designed to incorporate outdoor areas such as decks, patios, or viewing platforms that orient toward the shoreline.
   c. Buildings are designed with entrances along the waterfront façade and with connections between the building and required public pedestrian walkways.
   d. Service areas are located away from the shoreline.
   e. Site planning includes public use areas along waterfront public pedestrian walkways, if required under the provisions established in KZC 83.420, that will encourage pedestrian activity, including but not limited to:
      1) Permanent seating areas;
      2) Vegetation, including trees to provide shade cover; and
      3) Trash receptacles.
2. Exemptions – The following are exempt from the requirements of subsection 1:
   a. Non-water oriented commercial and recreational uses that 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.
3. Buildings shall not incorporate materials that are reflective or mirrored.

83.400 Tree Management and Vegetation in Shoreline Setback

1. 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:

   a. Tree removal when no development activity is proposed or in progress.

1) An owner of a developed a property may remove up to 2 significant trees from their property within a 12 month period subject to the standards contained in Chapter 95 KZC.

2) Replacement Standards within 25 feet of the OHWM –

a) If a significant tree located within within 25 feet of the OHWMis to be removed, a 3–for-1 replacement is required as mitigation. 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. See alternative mitigation option in subsection 2.d.below that may be proposed.

b) In circumstances where the proposed tree removal includes a tree that was required to be planted under the provisions of this section, the required tree replacement shall be addressed under the provisions of subsection 83.400 4 below, which requires only a 1:1 replacement.

c) For required replacement trees, a planting plan showing the location, size and species of the new trees is required to be submitted 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 or shoreline appropriate species approved by the Planning Official or Urban Forester.

d) An alternative mitigation option may be proposed if an applicant can demonstrate that (i) 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, or (ii) the required tree placements cannot be made without unreasonably obstructing water-facing views on the subject or neighboring properties , at the time of planting or upon future growth.

The alternate mitigation must be reasonably effective in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. This may include, but shall not be limited to, a riparian restoration plan consisting of shrubs, or groundcovers selected from the Kirkland Native Plant List which shall equal at a minimum 80 square feet for each tree to be replanted. The applicant shall submit a planting plan to be reviewed by the Planning Official or Urban Forester. The planning official or urban forester shall approve such plan or measure if it constitutes a reasonably effective alternative, or may impose conditions the extent necessary to make the plan or measure a reasonably effective alternative. If the alternative plan or measure is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal. .

b. Tree removal when development activity is proposed or in progress.

1) Submittal Requirements in the Shoreline Setback –

a) A site plan showing the approximate location of significant trees, their size (DBH) and their species, along with the location of existing structures, driveways, access ways and easements and the proposed improvements.

b) An arborist report stating the size (DBH), species, and assessment of health of all significant trees located within 25 feet of the OHWM. This requirement may be waived by the Planning Official if it is determined that proposed development activity will not potentially impacts significant trees within the shoreline setback.

2) Tree Retention Standards in the Shoreline Setback - Within 25 feet of the OHWM, 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

Comment [A54]: Basing the tree management provisions of this regulation on the Shoreline Setback is problematic for at least three reasons: first, it is excessive because in some cases this means that trees located 59 feet from OHWM must be replaced on the 3:1 basis. These are not shoreline trees. Second, it is inequitable to treat property owners so differently. And third, such disparate treatment cannot be supported by proper science, which would necessarily treat all trees of a certain distance from the lake equally.

Deleted: in the Shoreline Setback

Comment [A55]: Requiring property owners to replace at their sole expense trees that have succumbed to Acts of God is overreaching the bounds of reasonable government. Requiring 3:1 replacement in such cases is even further over the top.

Deleted: the shoreline setback area

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Comment [A56]: Notice that this provision is a much weaker protection of highly valuable and sought-after private views than the provisions elsewhere in these regulations regarding public views, which completely prohibit view obstruction. This addition would require the applicant to plant the trees unless there is no way to do so without obstructing water-facing views, and even then only where the obstruction would be unreasonable.

Deleted: equal or superior to the provisions of this section

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Deleted: the shoreline setback

Deleted: the shoreline setback

retained consistent with the proposed development activity. The applicant shall be encouraged to retain significant trees in other areas on-site.

3) Replanting Requirements in the Shoreline Setback –

a) If the Planning Official approves removal of a significant tree within 25 feet of the OHWM, then a three (3) for one (1) 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. See alternative mitigation option in subsection 3) c. below that may be proposed.

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 or shoreline appropriate species approved by the Planning Official or Urban Forester.

c) An alternative mitigation option may be proposed if an applicant can demonstrate (i) 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, or (ii) the required tree placements cannot be made without unreasonably obstructing water-facing views on the subject or neighboring properties, at the time of planting or upon future growth.

i. The alternate mitigation must be reasonably effective alternative to the provisions of this section in accomplishing the purpose and intent of maintaining shoreline ecological functions and processes. This may include, but shall not be limited to, a riparian restoration plan consisting of shrubs, perennials, groundcovers selected from the Kirkland Native Plant List which shall equal at minimum 80 square feet for each tree to be replanted. The applicants shall submit a planting plan to be reviewed by the Planning Official or Urban Forester. The planning official or urban forester shall approve such plan or measure if it constitutes a reasonably effective alternative, or may impose conditions the extent necessary to make the plan or measure a reasonably effective alternative. If the alternative plan or measure is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal.

2. Tree Pruning within 25 feet of the OHWM - Non-destructive thinning of lateral branches to enhance views or trimming, shaping, thinning or pruning of a tree within 25 feet of the OHWM necessary to its health and growth is allowed, consistent with the following standards:

a. In no circumstance shall removal of more than one-third (1/3) of the original crown be permitted;

b. Pruning shall not include topping, stripping of branches or creation of an imbalanced canopy;

c. Pruning shall retain branches that overhang the water to the maximum extent feasible; and

d. Pruning shall not directly impact the nearshore functions and values including fish and wildlife habitat.

3. Required Vegetation in the Shoreline – Riparian vegetation contributes to shoreline ecological functions in a number of different ways, including maintaining temperature, removing excessive nutrients and toxic compounds, attenuating wave energy, removing and stabilizing sediment and providing woody debris and other organic matter. In order to minimizing potential impacts to shoreline ecological functions from development activities, the following shoreline vegetation standards are required:

Comment [A57]: We do not understand why such sweeping authority is needed given that improvements within the shoreline setback are already prohibited. Note that trees not covered by this Chapter are not "unprotected", but rather are covered by Kirkland's existing tree ordinance.

Deleted: 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.

Deleted: viable

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Comment [A58]: Question: is this section necessary given that these provisions already exist elsewhere in the Kirkland Code? Is this intended to be more restrictive?

a. Minimum Landscape Standard Compliance –

1.) Location –

a) Water-dependent Uses or Activities - Those portions of water-dependent development that require improvements adjacent to the water's edge, such as fuel 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, swimming beaches or other similar activities shall plant native vegetation on portions of the nearshore riparian area located along the water's edge that are not otherwise being used for the water-dependent activity.

b) All Other Uses - The applicant shall plant native vegetation, as necessary, in at least 75 percent of the nearshore riparian area located along the water's edge.

Comment [A59]: Question for Staff: does this mean that any application for any permit much comply with the requirements of this Section 83.400 3.? We need to understand what all would trigger this requirement. Also, what exactly is the "nearshore riparian area located along the water's edge"? We could not find where this is defined.

2) Planting Requirements –

a) For uses other than those list below in subsection 2) b), the vegetated portion of the nearshore riparian area shall average 10 feet in depth from the OHWM, but may be a minimum of 5 feet wide to allow for variation in landscape bed shape and plant placement. Total square feet of landscaped area shall be equal to a continuous 10-foot wide area.

b) For Detached, Attached or Stacked Dwelling Units within the Residential – M/H shoreline environment, the vegetated portion of the nearshore riparian area shall average 15 feet in depth from the OHWM. Total square feet of landscaped area shall be equal to a continuous 15-foot wide area.

c) The public access pathway required under Section 83.420 may extend into the required landscape strip as necessary to meet the public access requirements, provided that the overall width of the landscape strip is maintained.

d) Installation of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least 3 trees per 100 linear feet of shoreline must be included in the plan, with portions of a tree rounded up to the next required tree.

e) Plant materials must be native and selected from the Kirkland Native Plant List, or other native or shoreline appropriate species approved by the Planning Official or Urban Forester.

b. Use of Existing Vegetation - The City shall accept existing native trees, shrubs and groundcover as meeting the requirements of this subsection, 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 vegetation. The City may require the applicant to plant trees, shrubs, and groundcover according to the requirements of this subsection to supplement the existing vegetation in order to provide a buffer at least as effective as the required buffer.

Comment [A60]: It would be unreasonable to reject existing vegetation that complies with the requirements.

Deleted: may

c 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 subsection, 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.

d. Vegetation Placement – Vegetation selection and placement shall comply with the following standards:

1) 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 Lake and the shoreline on the opposite side of the Lake at the time of planting or upon future growth.

2) Vegetation may be selected and positioned to maintain private views to the water by clustering vegetation in a selected area, provided that the minimum landscape standard is met, unless the required vegetation cannot be placed without unreasonably obstructing water-facing views on the subject or neighboring properties, at the time of planting or upon future growth, whereupon alternative compliance through Section 83.400 3.e. may be sought.

e. Alternative Compliance - Vegetation required by this subsection 83.400 3. shall be installed unless the applicant demonstrates one of the following:

1) The vegetation will not provide shoreline ecological function due to existing conditions, such as the presence of extensive shoreline stabilization measures that extend landward from the OHWM; or

2) It is not feasible to plant all of the required vegetation on the subject property, given the existing tree canopy coverage and location of trees on the property, the location of structures on the property, or minimum spacing requirements for the vegetation to be planted; or

3) The vegetation will substantially interfere with the use and enjoyment of the portion of the property located between the residence and OWHM; and

4) That alternate measures will be equal or superior to the provisions of this subsection in accomplishing the purpose and intent of maintaining and improving shoreline ecological functions and processes. Examples include, but are not limited to:

For a proposed alternative to the required vegetation of the in the shoreline setback area-

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.

For a proposed modification to the tree plantings required as part vegetation in the shoreline setback–

c) Increasing the width of the required vegetation in the shoreline setback by a minimum of 5 additional feet.

Requests to use alternative measures shall be reviewed by the Planning Official. The planning official shall approve such measures if they constitute a reasonably effective alternative, or may impose conditions the extent necessary to make the measures a reasonably effective alternative. If the alternative measures are denied, the applicant shall be informed of the deficiencies that caused their disapproval so as to provide guidance for its revision and resubmittal. Cost of producing and implementing the alternative plan, and the fee to review the plan by City staff or the City's consultant shall be borne by the applicant.

f. Cost. The mitigation requirements of this Section 83.400 shall not impose unreasonable costs on the applicant relative to the cost of the project that triggers the mitigation requirement. Where the applicant can show that the required mitigation cannot be accomplished for a total cost less than or equal to ten percent (10%) of the cost of the

Comment [A61]: This provision should apply regardless of the location of the primary structure, because the test is substantial interference. If the primary structure is located further from the OHWM, then it will be less likely that vegetation will substantially interfere with the use and enjoyment - that is, the test works regardless.

Deleted: because the primary structure is located within 15 feet of the OHWM

Deleted: who may approve, approve with conditions, or deny the request

project that triggers the mitigation requirement, the scope and/or nature of the mitigation requirement shall be modified so that the total cost is less than or equal to ten percent.

Comment [A62]: This provision is needed to prevent mitigation requirements from being unbounded by cost and hence unreasonable relative to the cost of the overall project. Note that the burden is on the applicant to show that costs cannot be brought within the limit, and the City retains discretion on how to modify the mitigation requirements to achieve reasonable cost. This is a major concern of property owners, who justifiably fear that they will be saddled with unlimited costs of compliance with new regulations. As currently written, there is no requirement that mitigation be reasonable or limited in any way, hence the concern.

4. Responsibility for Regular Maintenance.
   a. The applicant, landowner, or successors in interest shall be responsible for the regular maintenance of vegetation required under this section. Plants that die must be replaced in kind or with similar plants contained on the Native Plant List, or other native or shoreline appropriate species approved by the Planning Official or Urban Forester.
   b. All required vegetation must 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 vegetation that is required by the City.

83.410 View Corridors

1. General - Development within the shoreline areas located west of Lake Washington Boulevard and Lake Street South shall include public view corridors that provide the public with an unobstructed view of the water. The intent of the corridor is to provide an unobstructed view from the adjacent public right-of-way to the Lake and the shoreline on the opposite side of the Lake.
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. A view of the shoreline edge of the subject property shall be provided if existing topography, vegetation, and other factors allow for this view to be retained.
   b. The view corridors approved for properties located in the UM Shoreline Environment established under an approved Master Plan or zoning permit approved under the provisions of Chapter 152 KZC shall continue to comply with those requirements. 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) Piers and docks associated with a marina or moorage facility for a commercial use;
      2) Piers, docks, moorage buoys, boatlifts and canopies associated with Detached, Attached and Stacked Unit uses; and
      3) Tour boat facility, ferry terminal or water taxi, including permanent structures up to 200 square feet in size housing commercial uses ancillary to the facility.
      4) Public Access Pier or Boardwalk
      5) Boat launch
   b. Public Parks
   c. Properties located in the UM Shoreline Environment within the Central Business District zone.
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 properties 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) Locations 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 vegetation that is 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 the Lake and the shoreline on the opposite side of the Lake.

3) Structures if the slope of the subject property permits full, unobstructed views of the Lake 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) Vegetation, including required vegetation screening around parking and driving areas and land use buffers, provided it is designed and of a size that will not obscure the view from the public right-of-way to the water and the shoreline on the opposite side of the Lake at the time of planting or upon future growth. In the event of a conflict between required site screening and view preservation. View preservation shall take precedents over buffering requirements found in KZC 95.

6) Open fencing that is designed not to obscure the view from the public right-of-way to the Lake and the shoreline on the opposite side of the Lake.

83.420 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 shoreline public pedestrian walkway and the public right-of-way serve to link the walkway with the larger city-wide 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:

Comment [A63]: Requiring dedication is unnecessary and overreaching. It is unnecessary because this Chapter already prohibits public view obstruction with the force of law. It is overreaching because easements are forever, and it is improper to attempt to extend the conditions of a law beyond its future amendment or repeal.

Deleted: <#>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.

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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 shoreline public pedestrian walkway 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 OHWM so that the walkway may meander and not be a straight line. In cases where the walkway on the adjoining property has been installed closer to the shoreline than allowed under this provision, the walkway extend within 5 feet of the OHWM in order to connect to the existing walkway.

c. Locating the walkways adjacent to other public areas including street-ends, waterways, parks, and other public access and connecting trails, shall maximize the public nature of the access.

d. The walkways shall be situated so as to minimize significant grade changes and the need for stairways.

e. 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.

f. The walkways shall be located so as to avoid undue interference with the use of the site by water-dependent businesses.

g. 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 6 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 Recorder's Office. Land survey information shall be provided by the applicant for this purpose in a format approved by the Planning Official.

Deleted: Department of Records and Elections

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 – Unless otherwise required by the City, all required pedestrian walkways shall be open to the public between the hours of 10 am to dusk from March 21st to September 21st, and the remainder of the year 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:

      a. The gate shall remain in an open position during hours of permitted public access; and

      b. 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.

      a. 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.

      b. 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

   a. The requirement for the dedication and improvement of public access does not apply to:

      a. Development, other than public entities such as government facilities and public parks, located within the Residential - L shoreline environment.

      b. Development located within the Natural shoreline environment.

      c. Detached Dwelling unit on one lot and normal appurtenances associated with this use that is not part of a land division. For development involving land division, public pedestrian access is required.

Comment [A64]: DISCUSSION POINT: does this mean that lawful subdivision of residential property with Residential-L would require public access without exception?

6. Modifications

   a. The Planning Official may require or grant a modification to the nature or extent of any required improvement for any of the following reasons:

      1) If the presence of critical areas, such as wetlands, streams, or geologically hazardous areas, preclude the construction of the improvements as required.

      2) To avoid interference with the operations of water-dependant uses, such as marinas.

      3) If the property contains unusual site constraints, such as size, configuration, topography, or location.

      4) If the access would create unavoidable health or safety hazards to the public.

   b. 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.

c. Access from the right-of-way to the shoreline public access walkway may be waived by the Planning Official if all of following criteria are met:

1) If public access along the shoreline of the subject property can be reached from an adjacent property,

2) If the adjacent property providing access to the shoreline 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 or less; and

3) 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.

83.430 In-Water Construction

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. See KZC 83.370 for federal and state approval and timing restrictions.

d. Removal of existing structures shall be accomplished so the structure and associated material does not re-enter the lake.

e. Waste material and unauthorized fill, such as construction debris, silt or excess dirt resulting from in-water structure installation, concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, paper and any other similar material upland of or below the OHWM shall be removed.

f. Measurements shall be taken in advance and during construction to ensure that no petroleum products, hydraulic fluid, 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.

g. In-water work shall be conducted in a manner that causes little or no siltation to adjacent areas. A sediment control curtain shall be used in those instances where siltation is expected. The curtain shall be maintained in a functional manner that contains suspended sediments during project installation.

h. Any trenches, depressions, or holes created below the OHWM shall be backfilled prior to inundation by high water or wave action.

i. 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.

j. 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.

k. If at any time, as a result of in-water work, water quality problems develop, immediate notification shall be made to the Washington Department of Ecology.

83.440 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 commercial parking uses.

   b. Parking as a primary use on a subject property is prohibited.

2. Number of Parking Spaces -

   Uses must provide sufficient off-street parking spaces. The required number of parking stalls established in KZC Chapter 105, KZC 50.60 and with the applicable parking standards for each use shall be met.

3. Parking Location -

   a. Intent – To reduce the negative impacts of parking and circulation facilities on 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 83.400. 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 vegetation.

            iii) The structure is designed to not impact public access and views to the Lake 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 vegetation and/or building surface treatment to provide an appearance comparable to the remainder 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. Pedestrian Connections

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 composed of a different material than the parking lot material.

2) Pedestrian connections must be at least 5 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 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 visible from a required view corridor, or is facing a public pedestrian walkway, public use area, or public park must incorporate vegetation and/or building surface treatment to mitigate the visual impacts of the structured parking.

83.450 Screening of Storage and Service Areas, Mechanical Equipment and Garage Receptacles

1. Outdoor Use, Activity and Storage. Outdoor Use, Activity and Storage areas must comply with the following:

a. Comply with the shoreline setback established for the use with which they are associated.

b. Be located to minimize visibility from any street, Lake Washington, required public pedestrian walkway, public use area or public park.

c. 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.

d. 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.

2. Mechanical and similar equipment or appurtenances.

a. At-grade mechanical and similar equipment or appurtenances are not permitted within the shoreline setback.

b. Rooftop appurtenances and at or below grade appurtenances shall be screened with vegetation 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.

3. Garbage and trash receptacles. Garbage and recycling receptacles must comply with the following:

a. Comply with the shoreline setback established for the use with which they are associated.

b. Be located to minimize visibility from any street, Lake Washington, required public pedestrian walkway, public use area or public parks.

c. 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.

d. 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 subsection.

83.460 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. Signs shall comply with the shoreline setback standards contained in KZC 83.180.

   c. 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:

         a) 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 area permitted in KZC Chapter 100.

         b) 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.

         c) Signs shall be affixed to a pier or wall-mounted. The maximum permitted height of a freestanding sign is 5 feet above the surface of the pier. A wall-mounted sign shall not project above the roofline of the building to which it is attached.

      2) Boat traffic signs, directional signs, and signs displaying a public service message.

      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.

83.470 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 submittal 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 83.460.

b. The following development activities are exempt from the submittal 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 and docks;

3) Public Access Pier or Boardwalk; and

4) Moorage buoy.

3. Submittal Requirements - All development proposing exterior lighting 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 illuminate 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, docks or other 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-candle at the water surface of Lake Washington, as measured waterward of the OHWM.

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) Illumination of a building façade to enhance architectural features is not permitted.

2) Where feasible, 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.

83.480 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 measures; 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 shall employ 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

Comment [A65]: missing word

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.

Low Impact Development techniques shall be considered and implemented to the greatest extent practicable, consistent with the City's adopted surface water design manual.

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 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 Public Works Department 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 federal and state agencies.

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 Planning Department prior to the application.

83.490 Critical Areas – General Standards

1. The provisions of this Chapter do not extend beyond the shoreline jurisdiction limits specified in this Chapter and the Act. For regulations addressing critical area buffers that are outside of the shoreline jurisdiction, see KZC Chapter 85 and 90.

2. Avoiding impacts to critical areas.

   a. An applicant for a land surface modification or development permit 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 subsection.

      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 83.500 and 510.

      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 will utilize mitigation sequencing to avoid, minimize, and mitigate impacts to critical areas and associated buffers. The applicant shall seek to avoid, minimize and mitigate overall impacts based on the functions and values of all 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 shall 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 subsection as a part of the critical areas review conducted pursuant to KZC 500 and 510.

3. 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 meets the criteria of a nuisance or hazard in a critical area in or its buffer as described below, then a "snag" or wildlife tree shall be created. 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 that 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.

b) Nuisance Tree Criteria. A nuisance tree must meet the following criteria:

i) The 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) The 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:

- Pruning of the crown or roots of the tree and/or small modifications to the site improvements, including but not limited to a driveway, parking lot, patio or sidewalk, to alleviate the problem.
- 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 6 feet in height in close proximity to where the removed tree was located. The Planning Official shall approve the selection of native species and timing of installation.

4. 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 or otherwise approved by the City's Urban Forester. 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 their entry into waterways and wetlands and minimize 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.

83.500 Wetlands

1. Applicability – The following provisions shall apply to wetlands and wetland buffers located within the shoreline jurisdiction, in place 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 that 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 at that time.

      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 (b) 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 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 to determine the appropriate buffer width. Ecology's rating system and the corresponding buffers only apply to those wetlands and buffers 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 consultant. The Planning Official's decision under this section shall be used for review of any development permit or 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 83.500.4 through 83.500.10. See also KZC 83.490, Trees in Critical Areas or Critical Area Buffers; and KZC 83.490, 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*

Modification to Buffer for Divided Wetland Buffer - 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 minor improvements within this setback that 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 Discharge– 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:

1) Surface discharge of storm water through the buffer would clearly pose a threat to slope stability, and

2) The storm water outfall will not:

a) Adversely affect water quality;

b) Adversely affect fish, wildlife, or their habitat;

c) Adversely affect drainage or storm water detention capabilities;

d) Lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

e) 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 outfalls shall minimize potential impacts to the wetland or wetland buffer by meeting the following design standards:

1) Catch basins must be installed as far as feasible from the buffer boundary.

2) 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 –Water quality facilities, as determined by the City, may be located within the required wetland buffers of KZC 83.500.4. 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 feasible 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) 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 feasible alternative proposal that results in less impact to the buffer.

f. Utilities and Rights-of-Way –The following work may only be allowed in critical areas and their buffers subject to City review after appropriate mitigation sequencing per KZC 83.490.2 has been considered and implemented, provided that activities will not increase the impervious area or reduce flood storage capacity:

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 shall 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.

g. Minor Improvements – Minor improvements may be located within the sensitive area buffers specified in subsection (a) of this section. These minor improvements shall only be located within the outer one-half (1/2) 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 that 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 with silt screen fabric, as approved by the Planning Official and consistent with City standards, along the upland boundary of the entire wetland buffer. 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 -

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 follows .

Development Proposal	Permit Process

Wetland Modifications, or Wetland Buffer Modifications affecting greater than 25% of the standard buffer	Shoreline Variance pursuant to Process IIA, described in Chapter 141
Wetland Buffer Modifications affecting 25% or less of the standard buffer or Reasonable Use Exceptions	Underlying development permit or development activity
Wetland Restoration Plans	Underlying development permit or development activity

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 consultant. 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 83.500 3) for a wetland;

      2) A description of the area of the site that is within the sensitive area or within the setbacks or buffers required by this Chapter;

      3) An analysis of the impact that the amount of development proposed would have on the sensitive area and the sensitive area buffer;

      4) An analysis of the mitigation sequencing as outlined in KZC 83.490.2;

      5) 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.

      6) Sensitive site design and construction staging of the proposal so that the development away from the sensitive area and/or sensitive area buffer and will minimizes net loss of sensitive area and/or sensitive area buffer functions to the greatest extent possible;

      7) 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;

      8) Information specified in KZC 83.500 8);

      9) An evaluation of the project's consistency with the shoreline variance criteria contained in WAC 173-27-170; and

      10) 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 83.490.2;

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 feasible alternative development proposal that results in less impact to the wetland and its buffer.

8. Compensatory Mitigation –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
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

[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]
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

a. On Site versus Off-Site Mitigation

On-site mitigation is preferable to off-site mitigation. Given on-site constraints, 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 Recorder's Office, 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.

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b. Mitigation Plan and Monitoring and Maintenance Program

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 83.490.2.

b. Approved departures from the standard buffer requirements of KZC 83.500.4 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 83.500.4(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.

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 83.500.4. Buffers may not be reduced at any point by more than twenty-five (25%) percent of the standards specified in KZC 83.500.4, unless

approved through a shoreline variance. 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 83.500.8.

Buffers may not be reduced at any point by more than 25% of the standards in KZC 83.500.3(a). Buffer reductions of more than 25% approved through a shoreline variance will be assumed to have direct wetland impacts that must be compensated for as described above under KZC 83.500.8.

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 83.490.2.

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 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 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 9 d)(2) of this section.

10. Reasonable Use Exception –

An applicant for a detached dwelling unit in the Natural shoreline environment who is unable to comply with the specific standards of this section may seek approval pursuant to the following standards and procedures:

a. 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 jurisdiction 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.

b. Submittal Requirements – As part of the reasonable use request, 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 83.500 3) for a wetland;

   2) An analysis of whether any other reasonable use with less impact on the sensitive area and sensitive area buffer is possible;

   3) Sensitive site design and construction staging of the proposal so that the development will have the least feasible 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 proposed development would have on the sensitive area and the sensitive area buffer;

   7) How the proposal minimizes net loss of sensitive area and/or sensitive area buffer functions to the greatest extent possible;

   8) Whether the improvement is located away from the sensitive area and the sensitive area buffer to the greatest extent possible;

   9) Information specified in KZC 83.500.8 for Compensatory Mitigation;

   10) Such other information or studies as the Planning Official may reasonably require.

c. Decisional Criteria – The City shall grant approval of a reasonable use exception only if all of the following criteria are met:

   1) 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 shoreline environment shall be one single-family dwelling;

   2) 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;

   3) 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 vegetation, shall not exceed 3,000 square feet. The amount of allowable disturbance shall be the minimum feasible with the least impact on the sensitive area and the sensitive area buffer, given the characteristics and context of the subject property, sensitive area, and buffer;

4) The applicant shall pay for a qualified professional to assist the City's determination of the appropriate limit for disturbance;

5) The proposal is compatible in 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;

6) The proposal maximizes the amount of existing tree canopy that is retained;

7) 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;

8) The proposed development does not pose an unacceptable threat to the public health, safety, or welfare on or off the property;

9) The proposal meets the mitigation, maintenance, and monitoring requirements of this Chapter;

10) The inability to derive reasonable use is not the result of actions by the applicant after the effective date of the ordinance of this Chapter or its predecessor; and

11) 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.

d. Modifications and Conditions – The City may approve a reduction in required yards or buffer setbacks and may allow the maximum height of structures to be increased up to 5 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 an exception.

11. 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 83.490.3, Trees in Critical Areas or Critical Area Buffers; and KZC 83.490.4, 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 the City requires wetland restoration, the requirements of KZC 83.500.8, Compensatory Mitigation, shall apply.

12. 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.

83.510 Streams

1. Applicability – The following provisions shall apply to streams and stream buffers located within the shoreline jurisdiction, in place 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 that 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 shall occur and no improvements shall be located in a stream or its buffer except as provided in KZC 83.510.3 through 83.510.11.
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 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. Stream Buffers and Setbacks
   a. Stream Buffers – No land surface modification shall occur and no improvement shall be located in a stream or its buffer, except as provided in this section. See also KZC 83.490(3), Trees in Critical Areas or Critical Area Buffers; and KZC 83.490(4), 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 OHWM 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 that 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 stream from the proposed development; and
2) Provides insignificant biological, geological or hydrological buffer functions relating to the portion of the buffer adjacent to the stream.

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 that 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 Discharge – 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 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 stream or stream buffer by meeting the following design standards:

1) Catch basins must be installed as far as feasible from the buffer boundary.
2) 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 –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) The 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 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 surface 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 83.490.2 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 shall 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 83.510.4. 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 that 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 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 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 -

   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 follows .

Development Proposal	Permit Process
Steam Relocations or Modifications, or Stream Buffer Modifications affecting more than one-third (1/3) of the standard buffer	Shoreline Variance pursuant to Process IIA, described in Chapter 141
Stream Buffer Modifications affecting less than one-third (1/3) of the standard buffer or Reasonable Use Exceptions	Underlying development permit or development activity
Bulkheads in Stream, Stream Crossings or Stream Rehabilitation	Underlying development permit or development activity

7. Stream 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 83.490.2.

   b. Approved departures from the standard buffer requirements of KZC 83.510.4(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.

c. 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 83.510.4(a). Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.510.4(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 83.500.8.

Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.510.4(a).

d. 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 83.490.2.

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 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 10 criteria listed in this subsection above.

8. Reasonable Use Exception –

An applicant for a detached dwelling unit in the Natural shoreline environment who is unable to comply with the specific standards of this section may seek approval pursuant to the following standards and procedures:

a. 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 jurisdiction 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 stream, either in stream buffer or as upland area.

b. Submittal Requirements – As part of the reasonable use request, 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 83.510 3) for a stream based on the definitions contained in this Chapter for a stream;

2) An analysis of whether any other reasonable use with less impact on the sensitive area and sensitive area buffer is possible;

3) Sensitive site design and construction staging of the proposal so that the development will have the least feasible 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 proposed development would have on the sensitive area and the sensitive area buffer;

7) How the proposal minimizes net loss of sensitive area and/or sensitive area buffer functions to the greatest extent possible;

8) Whether the improvement is located away from the sensitive area and the sensitive area buffer to the greatest extent possible;

9) Information specified in KZC 83.500.8 for Compensatory Mitigation;

10) Such other information or studies as the Planning Official may reasonably require.

c. Decisional Criteria – The City shall grant approval of a reasonable use exception only if all of the following criteria are met:

1) 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 shoreline environment shall be one single-family dwelling;

2) 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;

3) 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 vegetation, shall not exceed 3,000 square feet. The amount of allowable disturbance shall be the minimum feasible with the least impact on the sensitive area and the sensitive area buffer, given the characteristics and context of the subject property, sensitive area, and buffer;

4) The applicant shall pay for a qualified professional to assist the City's determination of the appropriate limit for disturbance;

5) The proposal is compatible in 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;

6) The proposal maximizes the amount of existing tree canopy that is retained;

7) 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;

8) The proposed development does not pose an unacceptable threat to the public health, safety, or welfare on or off the property;

9) The proposal meets the mitigation, maintenance, and monitoring requirements of this Chapter;

10) The inability to derive reasonable use is not the result of actions by the applicant after the effective date of the ordinance of this Chapter or its predecessor; and

11) 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.

d. Modifications and Conditions – The City may approve a reduction in required yards or buffer setbacks and may allow the maximum height of structures to be increased up to 5 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 an exception.

9. 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 shall not be considered.

A proposal to relocate or modify a Class A stream may only be approved 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 Recorder's Office, consenting to the sensitive area and/or buffer creation or increase on such property.

Deleted: Department of Elections and Records

Prior to the City's decision to authorize 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 83.500.8 for wetlands.

   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.

10. Bulkheads in Streams - Bulkheads or other erosion control practices using hardened structures that armor and stabilize the streambank from further erosion 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) 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) The installation, existence nor operation of the bulkhead will be detrimental to any other property or the City as a whole.
    e. The Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project.
    f. 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.
11. 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) 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) The installation, existence nor operation of the stream crossing will be detrimental to any other property or to the City as a whole.

d. 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 maintenance agreement under KZC 90.145 for continued maintenance of the stream crossing.

e. 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 criteria in this subsection must be designed consistent with Washington Department of Fish and Wildlife's *Design of Road Culverts for Fish Passage* (2003, or as revised).

f. 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.

12. 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 83.490, Trees in Critical Areas or Critical Area Buffers; and KZC 83.490, 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 the City requires stream rehabilitation, the mitigation plan and monitoring requirements of KZC 83.500.8 shall apply.

83.520 Geologically Hazardous Areas

1. The City of Kirkland Geologically Hazardous Area Regulations in Chapter 85 KZC (O-3719, dated December 1999 with subsequent amendments) is herein incorporated into this Chapter.

2. In addition to the required information contained in KZC 85.15, any required geotechnical report shall also contain any additional information specified under the definition of Geotechnical Report contained in KZC Section 83.80.

83.530 Flood Hazard Reduction

1. The City of Kirkland Flood Damage Regulations in Chapter 21.56 KMC (O-3946, dated June 1, 2004 with subsequent amendments) is herein incorporated into this Chapter.

83.540 Archaeological and Historic Resources

1. General - Uses, developments and activities on sites of historic or archeological significance or sites containing items 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 shall 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 27.44 (Indian Graves and Records) and RCW 27.53 (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 that are registered on the State or National Historic Register are subject to review under the National and State Registers' review process.

83.550 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, altered, remodeled, repaired and continued; provided that nonconforming structures shall not be enlarged, intensified, increased or altered in any way that increase the extent of the 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, abate any nonconformance that was illegal when initiated.

Comment [A66]: "Remodeled" is not defined in the Zoning Code, but alternation is a defined concept, and this is the formal name of the permit, so this is the clearest term.

Comment [A67]: The subject of this sentence is "structures", and so should be used consistently.

Deleted: development

Comment [A68]: This change for consistency with Section 83.550 5.c.2)c)iii), and see comments below

Deleted: which

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Deleted: its

4. Special Provision for Damaged Improvements - Non-conforming structures that are damaged or destroyed by fire, explosion, flood, earthquake, or other casualty may be restored or replaced in kind; provided that, the following are met:

   a. The permit process is commenced within twenty-four (24) 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 same place where it was, or alternatively if moved then 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 83.550 4. above 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 that is moved any distance must be brought into conformance.

      2) Any structural alteration of a roof or exterior wall that does not comply with height, shoreline setback, or view corridor standards shall be required to be brought into conformance for the nonconforming height, setback or view corridor, except as provided otherwise in this Chapter. Excepted from this subsection 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, wetland or stream buffer.

      4)

      5) Non-conforming structures that are enlarged (that is, their footprint is increased) within the shoreline setback must obtain a shoreline variance; provided that, a non-conforming

Comment [A69]: The deleted language defeats purpose of section and is contrary to the principal told to residents and Planning Commission that non-conforming structures can be rebuilt after fire or other casualty provided they do not increase the non-conformity.

Deleted: , if there is no feasible alternative that allows for compliance with the provisions of this Chapter

Comment [A70]: This is a more reasonable period given that it may not always be possible to commence within 12 months given insurance companies, etc., especially after a large event such as an earthquake or tornado.

Deleted: twelve (12)

Comment [A71]: Without this addition, this provision defeats the purpose of this section and is contrary to the principal told to residents and Planning Commission that non-conforming structures can be rebuilt after fire or other casualty. If a non-conforming structure is damaged by fire etc., it should be allowed to be rebuilt as it was.

Comment [A72]: QUESTION: shouldn't there be an exception not only for "repair or maintenance of structural members", but also any structural change that is otherwise required by law or regulation? For example, if after a fire a structure must be rebuilt, but cannot be rebuilt as is because of the application of other code provisions for building standards, safety, etc., then such alternations should not trigger a requirement to bring the entire structure into conformity with the new regulations.

Comment [A73]: Non-conforming structures should be permitted as long as the non-conformity is not increased.

Deleted: If existing accessory structures are located within the shoreline setback, these nonconforming structures must be brought into conformance if the applicant is making an alteration to the primary structure, the cost of which exceeds 50 percent of the replacement cost of the structure

Comment [A74]: DRAFTING: the terms "expanded or enlarged" are often used together in this section, as if they mean different things, and in some cases only one or the other term is used. It is clearer to use only one term (e.g., enlarged), which is defined to mean an increase in the footprint of the structure. Confusion or dispute about this in the future serves no purpose, of course.

Deleted: expanded or

detached dwelling unit may be enlarged without a shoreline variance where the following provisions apply:

Deleted: expanded

a) The non-conforming structure must have been constructed prior to December 1, 2006, the date of the City's *Final Shoreline Analysis Report.*

b) Before implementing this provision, the applicant shall determine whether the provisions of Section 83.380 would allow for a reduced setback, based upon existing conditions on the subject property.

c) The structure must be located landward of the OHWM.

d) The enlargement in the shoreline setback shall not exceed 10 percent of the gross floor area of the existing dwelling unit prior to the expansion.

Deleted: or expansion

e) The enlargement shall not extend further waterward than the existing primary residential structure. For purposes of this subsection, the improvements allowed within the shoreline setback as established in Section 83.180, such as bay windows, chimneys, greenhouse windows, eaves, cornices, awnings and canopies shall not be used in determining the most waterward location of the building (see Plate XX).

Deleted: , expansion or addition

f) The applicant must restore a portion of the shoreline setback area to offset the impact, such that the shoreline setback area will function at an equivalent or 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/or a consultant. The planning official or consultant shall approve such plan if it meets the above standard, or may impose conditions the extent necessary to make the plan meet the above standard. If the alternative plan is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to provide guidance for its revision and resubmittal.The cost of producing and implementing the restoration plan and the review by City staff and/or a consultant shall be borne by the applicant. Examples include, but are not limited to:

Deleted: who may approve, approve with conditions, or deny the request

i) Installation of additional native vegetation within the shoreline setback that would otherwise not be required under this Chapter. At a 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 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 OHWM and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography and beach/substrate composition.

iv) Other shoreline restoration projects that are demonstrated to result in an improvement to existing shoreline ecological functions and processes.

v) The applicant must comply with the best management practices contained in KZC Section 83.480 addressing the use of fertilizer, herbicides and pesticides as needed to protect lake water quality.

Comment [A75]: DRAFTING: this subsection "v)" does not appear to be an example like the rest of the list. Is this correctly formatted?

g) The applicant shall use "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 the lake, 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.

h) The remodel or expansion will not cause adverse impacts to shoreline ecological functions and/or processes as described on KZC 83.360.

i) This section 83.550 5.b.5) shall only be used once within any 5-year period.

6) 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 required shoreline setback and upland of required wetland or stream buffers, 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 OHWM.

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 same place where it was, or alternatively if moved then in the least environmentally damaging location relative to the shoreline and the critical areas.

e) The structure must comply with any requirements of this Chapter, zoning, building, or fire codes in effect when the structure is built, other than allowed in the subsection.

7) 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, 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 OHWM.

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 this Chapter, zoning, building, or fire codes in effect when the structure is built, other than allowed in the subsection

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 an alteration that increases the extent of the non-conformity, such as 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. ; or

Deleted: encroach provision

Comment [A76]: Again, non-conforming uses must be permitted to be rebuilt and/or replaced provided they are not enlarged.

Deleted: The structure must comply with all other requirements of this Chapter, zoning, building, or fire codes in effect when the structure is built

Comment [A77]: DRAFTING: this provision should be identical to e) above. CLARIFICATION/QUESTION: where these provisions refer to "other requirements of this Chapter", doesn't this need to be clarified that this is not referring to the setback requirements? It seems clear that this reference to "other requirements" cannot include the setback requirements (otherwise the section makes no sense).

Deleted: ,

Comment [A78]: This revision adopts the correct standard stated in subsection c)iii), namely that conformance should be required where an action is taken that would increase the extent of the non-conformity.

Deleted: a structural alteration or

Comment [A79]: This provision appears to be aimed at getting around case law imposing an intent requirement on such abandonments. As such, this is taking away rights from the existing Zoning Code. This could potentially prohibit mother in law apartments that go unrented for a brief period.

Deleted: 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

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) The proposed use will be consistent with the policies and provisions of the Act and this Chapter and is compatible with the uses in the area as the preexisting use;

ii) The use or activity is not enlarged, intensified, increased or altered in a manner that increases the extent of the non-conformity;

iii) 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;

iv) The change in use will not create adverse impacts to shoreline ecological functions and/or processes as described in KZC 83.360; and

v) Uses that are specifically prohibited or which would thwart the intent of the Act or this Chapter shall not be authorized.

d. Non-conforming wetland or stream buffer –

1) If existing structures or other improvements are located within the wetland, stream or associated buffers, these structures and improvements must be brought into conformance if the applicant is making an alteration, change or any other work on the subject property in a consecutive 12-month period and the cost of the alteration, change or work exceeds 50 percent of the replacement cost of all existing structure and improvements on the subject property.

2) If the cost threshold of subsection d above is not exceeded, the alterations or changes may occur provided that the alterations or changes comply with this code and no exterior alterations or changes are made to the nonconforming portion of the structure or improvement, unless otherwise authorized by this Chapter.

e. Non-conforming lot size - An undeveloped lot, tract, parcel, site or division which 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 this Chapter and the Act.

f. Nonconforming public pedestrian walkway -

1) If a previously installed pubic shoreline access trail is subsequently found to have not been installed to the property line, the trail shall be extended to the property line consistent with conditions established in the original permit.

2) If a previously installed shoreline access trail was subsequently found to have vegetation, fencing, other improvements or accessory structures installed that block connection to an adjacent shoreline access trail, the blockage shall be removed.

3) Nonconforming shoreline access trails that were legally created shall not be required to comply with the dimensional standards or setback standards of this Chapter.

4) The shoreline public access walkway 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 all primary habitable structure(s) in shoreline

jurisdiction, the cost of which exceeds 50 percent of the replacement cost of all structures and improvements on the subject property.

g.

1)

h. Nonconforming Lighting - Exterior lighting must be brought into compliance with the requirements of this Chapter under the following circumstances:

1) The shielding requirements of KZC 83.470 shall be met when any nonconforming light fixture is replaced or moved.

2) All other requirements of KZC 83.470 shall be met when there is an increase in gross floor area of more than 50 percent of the primary structures on the subject property.

i. Prior approval of Shoreline Variance - A structure for which a shoreline 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.

j. Prior approval of Shoreline Conditional Use - A use which is listed in this Chapter as a conditional use, but existed prior to adoption of this Chapter or any relevant amendment and for which a conditional use permit has not been obtained shall be considered a nonconforming use.

k. 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 to an improvement that is nonconforming or houses, supports, or is supported by the nonconformance, and such alteration, change, or work increases the extent of the non-conformity; or

b) The use on the subject property is changed and this Chapter establishes more stringent or different standards or requirements for the nonconforming aspect of the new use than this code establishes for the former use.

ADDITIONAL PROVISIONS

Deleted: Nonconforming Shoreline Setback Vegetation- The vegetation requirements of this Chapter must conform with as much as is feasible, based on available land area, in either of the following situations

Comment [A80]: It is unclear what this provision is trying to address, and it appears to be missing some words. Given its placement, it has to apply to some type of non-conformance. But if this is about non-conforming structures, this is already covered in Section 83.400 3.b.5) et seq. Perhaps this is an artifact and should be deleted entirely?

Deleted: <#>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 all structures on the subject property

Deleted: in a consecutive 12-month period

Deleted: the cost of the alteration, change or other work exceeds 50 percent of the replacement cost of that improvement

Comment [A81]: FOR DISCUSSION: appropriate vesting provisions and effective date to this Chapter. One particular issue is activities for which a permit is not required, but which are regulated by this Chapter, how should activities that are in-process be handled?

Response to KLA Comments and Questions

The following is a summary of the comments received as part of the KLA review of Chapter 83, together with a brief staff response and suggested edits, if applicable. Also included are responses received from the Department of Ecology (shown in blue), who also had an opportunity to review KLA's comments. The comments have been numbered to match the comment number in KLA's review draft, included as Attachment 5.

The following is a summary table, which evaluates 1) Issues staff believes it has sufficiently addressed, 2) Issues staff has proposed revisions on, with goal of addressing KLA concerns, but which staff recommends review by KLA, PC and HCC, and 3) Issues which staff believes that it is unable to accommodate as proposed by KLA for the reasons noted below.

Revised Chapter 83 Responds to Issue	
Issue Number:	Notes:
2, 3, 4, 5, 6, 7, 8, 10, 11, 13, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32, 34, 36, 37, 38, 39, 41, 42, 43, 44, 47, 48, 52, 53, 55, 57, 58, 59, 60, 61, 63, 65, 66, 67, 68, 69, 70, 71, 74, 75, 77, 78, 79, 80	Staff believes that these issues have been adequately addressed.
Revised Chapter 83 (KLA, PC and HCC review recommended)	
Issue Number	Notes
1	This comment addresses using cost as a measure to assess the feasibility of an action. Staff has proposed a change to incorporate this concept, as provided in Section 83.360.
9, 12, 49, 50, 51,	This comment addresses whether averaging should be used to determine shoreline setbacks for the area south of Waverly Beach Park. Staff has requested property owner feedback and is open to this approach.
15, 64	This comment addresses whether or not public access is proposed for properties to be subdivided in the Residential L shoreline environment. The draft had proposed to exempt properties in the Residential L environment from this requirement, but Ecology has noted concerns with this provision. Staff plans to discuss further with Ecology, but may need to amend.
20	This comment addresses vegetation and tree placement with respect to private

	views. All standards for vegetation placement have been consolidated into Section 83.400, where staff has proposed revisions to address views, allowing for alternative provisions to be used if existing views are obstructed.
45, 46	This comment concerns the role of Mitigation Sequencing in project review. Staff has proposed edits that would clarify when this provision is applicable.
56	This comment addresses vegetation and tree placement with respect to private views. Staff has proposed revisions to Section 83.400 to address views, allowing for alternative provisions to be used if existing views are obstructed.
62	This comment addresses a proposed cap on mitigation costs. Staff has not proposed a cap, namely because of issues with no net loss and compliance with the state provisions, but has added language to Section 83.360 providing an option for the applicant to submit proposals that would include loss costly mitigation measures than identified in the Chapter.
Remaining Issues	
Issue Number:	Notes:
14	Requested change that would allow for new lots created through land division to use hard stabilization measures, if needed, for reasonable development to occur. This proposed revision would violate WAC 173-26-231(3)(a)(iii), which requires that "Subdivision of land must be regulated to assure that the lots created will not require shoreline stabilization in order for reasonable development to occur using geotechnical analysis of the site and shoreline characteristics".
19	Requested change that would eliminate language requiring the use of previously installed landscaping to be reviewed to ensure that the vegetation provides landscaping that is at least as effective in protection the shoreline functions as the required vegetation. Staff is requesting

	this provision to be retained, in order to ensure that the functions anticipated by installed vegetation, and used to justify NNL, are met.
30	Requested deletion of provision in Section 83.300 requiring new development or redevelopment to be located and designed to avoid the need for new or future shoreline stabilization to the extent feasible. This provision is needed to respond to WAC 173-26-231(3)(a)(iii)(A), which states "New development should be located and designed to avoid the need for future shoreline stabilization to the extent feasible".
31	Requested changes to Section 83.300 that would address protection of private property and accessory structures. Staff believes that the proposal would not be consistent with provisions of the WAC Guidelines. Also, it should be noted that the provisions do allow for replacement of hard measures with soft measures, which would reduce the impacts associated with hard structures, but still allow for protection.
33, 35	Requested changes to Section 83.300 to allow for consideration of imminent threat to be based on a 5-year time frame. This proposed revision would violate WAC 173-26-231(3)(a)(iii)(D), which specifies a clear requirement for a 3-year time frame.
40	Requested deletion of provisions requiring sloping the bulkhead landward in order to mitigate impacts of this type of hard shoreline stabilization measure, because of concern over loss of property. This is a standard mitigation measure that should be considered.
54	Requested change to apply tree management provisions only within 25 feet of ordinary high water mark, rather than within shoreline setback, which varies due to lot depth. WAC 173-26-221(5)(c) notes that the SMP is required to establish vegetation conservation

	techniques such as clearing and grading, that apply to the shoreline jurisdiction. Staff has proposed to implement tree retention provisions specifically within the shoreline setback since vegetation in this area in particular provides key shoreline functions. Staff is concerned that proposals that further reduce the area where tree retention features are applicable will not be consistent with the WAC Guidelines. At the same time, staff is proposing an alternative tree retention provision in order to better respond to the different functions that larger trees provide. See staff memo for more information.
73	Request deletion of provision requiring nonconforming accessory structures to come into compliance when significant improvements are made on-site. Requiring overall compliance on a property as significant investment is made on-site is a typical approach and specifically is also used in the critical area regulations in order to work towards gradual reductions of non-conformances.
72, 76	Requesting broader allowance to replace existing nonconforming structures in their current location when property owner is voluntarily replacing a nonconforming structure. The proposed provisions are consistent with the typical approach to nonconforming structures, where the City requires gradual compliance when structures are voluntary replaced or modifications made to exterior walls or roof which are non-conforming. Also, in terms of evaluating no net loss issues, the City relies upon this type of provision, which would result in some nonconforming development gradually coming into compliance in order to offset other improvements from newer construction that may occur closer to the lake. The City has allowed broad

	provisions for remodeling, but when replacement of a structure occurs, that is the best opportunity to see the redevelopment come into compliance.

1. This is an important revision which clarifies that actions are feasible only where they do not impose unreasonable financial burdens relative to the total cost of the triggering development project.

   Staff Response: Under the provisions of the WAC Guidelines, mitigation must compensate for the impacts regardless of the cost of the mitigation. If mitigation is too costly, the applicant should look to modify the design to reduce impacts to an affordable mitigation level. The definition for feasibility is taken verbatim from the WAC Guidelines, and, as a result, staff has concerns with modifying it.

   In order to start to address issues of cost in evaluating different actions, staff is proposing the following provisions be added to Section 83.360:

   a. Where development activities would adversely impact shoreline ecological functions, the City may consider whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of the proposed disturbance, including any continued impacts on functions and values over time. In this circumstance, the applicant is responsible for the burden of proof.

   b. Where mitigation is required, the City may consider alternative mitigation measures that may be less costly than those prescribed in this Chapter, provided that the alternatives are as effective in meeting the requirements of no net loss. In this circumstance, the applicant is responsible for the burden of proof.

   Ecology: Compensatory mitigation to offset anticipated impacts of development is not unique to shoreline planning. This is a fundamental concept common to ensuring adequate protection of both public and/or environmental resources.

2. This clarification is needed to remove future confusion whether various concrete or asphalt products are pervious or impervious, given that these materials are listed in both definitions.

   Staff Response: Agreed.

3. This revision does not change the meaning of the provision, but clarifies that this is a non-exclusive list. Together with the revision to the definition of "impervious surfaces", this clarifies that asphalt, concrete, and similar products may be considered pervious if so designed.

   Staff Response: Agreed.

4. The term "primary structure" is used throughout this Chapter, but not defined. Question: should this be defined? Should the term be "principal structure"? Are primary/principal structures and accessory structures mutually exclusive?

   Staff Response: Agreed, recommend using 'primary structure' since this is the terminology used in the State Guidelines. Suggested definition: A structure housing the main or principal use of the lot on which the structure is situated. This term shall not include accessory uses, structures or activities as defined in Chapter 5 KZC.

5. The term "significant tree" is used throughout this Chapter but is not defined. Presumably, this should be defined the same as, or by referring to, the Kirkland tree ordinance where this is a defined term.

   Staff Response: Agreed, suggest adding reference to definition contained in Chapter 5.

6. QUESTION: is this intended to be the same definition as in the Kirkland tree ordinance? It would be preferable to have one source of authority for tree regulation, as opposed to one set of regulations for shoreline trees and another set for trees elsewhere.

   Staff Response: Not intended to be same definition or replace definition of significant tree. Clarifies what is considered a tree for purposes of several provisions (e.g. vegetation in shoreline setback).

7. We have a general question about the consistency of the treatment of the various types of dwelling units referenced in this Chapter. Also, how are "mother in law" apartments handled?

   Staff Response: Treated same as in Zoning Code. The use listing 'Detached Dwelling Unit' captures single family residences. The use listing 'Detached, Attached or Stacked Dwelling Unit' captures multifamily, whether in one building or separate buildings. Mother-in-law apartments are addressed under terminology 'Accessory Dwelling Unit'. Staff will add references to existing definitions contained in Chapter 5 KZC.

8. Possible question for discussion.

   Staff Response: Staff has added a footnote referring to the potential for activities noted with 'SDP' to be considered exempt from the permit requirements under the provisions established in Chapter 141.

9. Question whether this should be south of Waverly Park

   Staff Response: Staff is open to the concept of using averaging up to Waverly Park and believes this alternative would still be consistent with the Cumulative

Impact Analysis completed. Staff has requested KLA to look at the setback comparison maps and make a recommendation on which approach they would prefer to use.

10. Consistent use of defined term is preferable

    Staff Response: Agreed.

11. It needs to be unambiguous that any required actions (e.g., mitigation) that changes the OHWM will entitle the property owner to measure the OHWM based on the original position. It is not clear that all such required actions would be considered "shoreline habitat and natural systems enhancement projects". This revision makes the issue unambiguous.

    Staff Response: Inserted requested language. Note: DOE has also commented on implementing new HB 2199 concerning change in OHWM that expands the shoreline jurisdiction into the regulations and staff may need to revise this section to address this bill. Staff is working with Ecology on this issue.

12. QUESTION: should this be south of Waverly Park?

    Staff Response: See earlier comments.

13. Clarifications to consistently use defined term.

    Staff Response: Agreed.

14. This appears to be what was intended, or else the existing language does not make sense.

    Staff Response: Staff has concerns with the language recommended, as it appears to contradict the direction provided in the WAC Guidelines. This section is intended to respond to the following provision from the WAC Guidelines addressing shoreline stabilization: Subdivision of land must be regulated to assure that the lots created will not require shoreline stabilization.

    Ecology: Ecology would not support this change. The Guidelines are clear in that hard armored shoreline stabilization should not be counted upon in further subdivision of shoreline properties. Generally speaking, the SMP is intended to reduce the amount of new bulkheads by defining appropriate future development that is sustainable without increased modification or armoring of the shoreline.

15. QUESTION: subdivision of a residential lot will henceforth require public access? If so, this is a significant issue. Question whether this should apply to properties in Residential-L.

    Staff Response: Staff understands concerns and would agree that isolated public pathways in the Residential L environment would not make sense. As stated

below in 83.420, this section should not apply to divisions in the Residential-L environment. Based on Ecology's comments (see below), staff will need to discuss this issue further and may need to revise the proposal.

Ecology: The Guidelines require public access for creation of more then 4-lots or dwellings. Therefore, all residential subdivision (i.e. 2-lot) are not subject to this requirement.

16. We understand this has been the subject of discussion with other waterfront property owners. QUESTION: what is the current Staff position on requiring joint use piers?

    Staff Response: Based on staff's re-evaluation of the WACs, staff is recommending that this provision be revised, but retained for new subdivisions.

    Ecology: Joint-use docks must be considered. Ecology is not suggesting that the current language must remain, but noting that some standard will be required to ensure that the City is encouraging joint-use docks.

17. This is a pure drafting suggestion to make this provision unambiguous. This clarifies but does not change the intended meaning. Without this revision, the provision could be read to state that "other recreational uses" must be removed, which is not the intent.

    Staff Response: Agreed.

18. Note that this is a disincentive for joint-use piers that may decrease their desirability. Is this effect intended?

    Staff Response: Intent is that each of the property owners benefiting from the joint-use pier should share in the mitigation for that pier.

19. This additional stipulation is unnecessary and improper. The point of this provision is that applicants shall not be required to provide vegetation that already exists. If existing vegetation meets the required standard, then further inquiry into its effect on ecological functions (which would presumably require studies etc.) should not be required.

    Staff Response: Without this provision, it is not clear that the pier must be mitigated with vegetation that provides shoreline functions. The functions of the vegetation are the driver, and this language should therefore remain.

    Ecology: The intent of vegetation is to support shoreline ecological functions, for which different types of vegetation provide different types of habitat. We would suggest that KLA and the City discuss some type of 'in-kind' standard where mitigating for lost vegetation as well as standards that encourage a variety of shrub, tree, etc for enhancement. The "Green Shorelines" guidebook provides some guidance on this issue which can be done in a fair manner to preserve

views while maintaining or enhancing shoreline functions.

20. This provision is needed to protect the investments of lakeshore property owners, which is an explicit purpose of this Chapter. Note that this proposed addition is not nearly as stringent as that applied to public views (which trump even ecological functions in importance). The intent of this addition is to allow the property owner to propose a reasonably effective alternative planting plan or mitigation measure where application of this new law unreasonably obstructs water-facing views.

    Staff Response: Staff agrees in concept with this approach, but does have some concerns about how to gauge what vegetation would constitute an unreasonable obstruction. Staff has instead proposed the following provisions, which can be found in Section 83.400 (which is now referenced for vegetation placement standards to avoid repetition):

    a) An alternative mitigation option may be approved if an applicant can demonstrate that:

        i) 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, or

        ii) The required tree replacement will obstruct existing views to the lake, at the time of planting or upon future growth, which cannot otherwise be mitigated through tree placement or maintenance activities. The applicant shall be responsible for providing sufficient information to the City to determine whether the tree replacement will obstruct existing views to the lake.

21. QUESTION: How can in-water or overwater structures be located further than 30 feet from the OHWM?

    Staff Response: There could be swim platforms, old piles, etc.

22. QUESTION: Why doesn't this simply require a demonstrated need? Is it necessary to preclude in advance other potentially reasonable needs?

    Staff Response: The intent of these provisions is to provide guidance on what activities would be considered under demonstrated need and be consistent with the WAC provisions outlining the use of piers. Staff has revised to note that these are examples. Are there other cases that property owners feel should be added to this list?

23. Same comment as above

    Staff Response: There could be swim platforms, old piles, etc.

24. 83.270 covers detached dwelling units. Is this section intended to also cover detached dwelling units? Shouldn't these be drafted to be mutually exclusive?

    Staff Response: This is a terminology issue that comes from the Zoning Code – it refers to a multifamily situation in which multiple detached dwelling units are located on one property. Therefore, the two provisions are mutually exclusive.

25. Same comment as above.

    Staff Response: Same as before.

26. same comment as above

    Staff Response: Same as before.

27. same comment as above

    Staff Response: Same as before.

28. same comment as above

    Staff Response: Same as before.

29. As a general comment, we found this Section exceedingly difficult to read and follow because of its drafting and organization.

    Staff Response: Staff has proposed reorganizing this section.

30. This provision is problematic because it could be misinterpreted to be a requirement independent of all other specific regulations. In other words, the applicant could meet all specific regulations and yet be told that the project is prohibited or must be changed based on this general provision.

    Staff Response: This section addresses the requirement in WAC 173-26-231(3)(a)(iii)(A), which states: " New development should be located and designed to avoid the need for future shoreline stabilization to the extent feasible".

    Ecology: Concur, this is a clear requirement from the Guidelines, for which Ecology would not support deleting this standard. Planning for new development that would not require future armoring is a fundamental component of the updated Guidelines and should be a central goal applied to all new development.

31. It is a significant concern of property owners that the new regulations could result in the loss of significant amounts of their property. The language in these proposed regulations that lists only protection of the primary structure (not including accessory structures such as detached garages, or the valuable

lakeshore property itself) lends credence to this fear. This revision addresses this point.

Staff Response: While staff understands this comment, staff is concerned that the suggested revisions would not be consistent with the provisions contained in the WAC Guidelines, which address protection of principal uses or structures.

The Department of Ecology has advised the City that "accessory structures alone do not justify shoreline protection (modification). Such structures are not necessary to protect an allowed primary structure. While some may think protecting a private investment in accessory structures like a gazebo, swimming pool, tennis court or helicopter-pad may be nice, they cannot be justified by the SMA or the guidelines. Again, they are not necessary in support of a primary structure, and most can be moved if in danger from normal shoreline erosion. "

In addition, Ecology has stated: "Normal shoreline accretion/avulsion, sloughing of steep bluffs, and erosion of property itself, is not justified unless required to protect a primary dwelling. Similarly, erosion caused by drainage alone is not enough to justify a shoreline stabilization structure.

In sum, regarding modifications, SMPs must:

1. *Allow structural shoreline modifications only where they are demonstrated to be necessary to protect a primary structure. Accessory structures alone do not justify protection.*
2. *Regarding all allowed shoreline modifications, reduce adverse effects as much as possible, limiting their number and extent.*
3. *Give preference to modifications types that have a lesser impact on ecological functions and require mitigation of identified impacts that result.*

When need is demonstrated, give priority to soft over hard measures, etc. etc. " [e-mail correspondence from Peter Skowland dated January 20, 2009].

Staff recommends further discussion with Ecology on this issue.

Ecology: We concur with City's response and do not believe the proposed change would be consistent with the Guidelines. It is important to note, that a majority of Kirkland's shoreline is already armored. The SMP (based on the Guidelines) should look for 'opportunities' to incorporate softer solutions when it is feasible to a specific lot. This does not mean that property owners need to accept significant erosion or "loss of property," it is more a case of reducing a on-going impact associated with hard-structures, when a softer solution can accommodate the same purpose to protect the primary structure on the property. If it is demonstrated that because of site specific factors a soft solution will not protect the primary structure, then harder solutions may be appropriate. Further, this evaluation is isolated to bulkhead repair/replacement scenarios and will not retroactively be forced on any existing sites.

32. See comment below

    Staff Response: Same as before.

33. The issue here is major storms, which do not occur frequently, but rather on long intervals, perhaps exceeding 10 years. Property owners justifiably fear being exposed to storm damage against which they cannot prepare by virtue of the short time horizon of this provision. Obviously, the City will not hold harmless owners from such damage, so it should at the very least not prohibit them from taking steps at their own expense to protect themselves.

    Staff Response: While staff understands this comment, staff is concerned that the suggested revisions would not be consistent with the provisions contained in the WAC Guidelines, which specifies the 3-year timeframe. WAC 173-26-231(3)(a)(iii)(D).

    Ecology: Concur with City, the 3-yar timeframe is a clear requirement within the Guidelines. This standard is not intended to restrict property owners from protecting themselves from future storms, but rather to ensure that new stabilization proposals demonstrate a need within a reasonable timeframe. The three-year timeframe is also intended to require evaluation of normal vs. storm induced erosion rates to help inform the risk assessment. Bulkhead construction is only one method of protection from potential storm damage. Depending on the specifics of a site other methods such as: stormwater improvements, beach nourishment, relocation of development further upland or planning a protective buffer can all significantly reduce potential storm damage.

34. We are confused about the intent and effect of this provision, which appears to be a definition.

    Staff Response: This section is proposed in the regulations to address the difference between replacement structures and additions, which are treated differently under the WAC Guidelines. Under the WAC Guidelines, additions to or increases in size of existing shoreline stabilization measures shall be considered new structures, which necessitates submittal of a geotechnical report and mitigation techniques.

    Ecology: Concur with City, Ecology cannot support these changes which are not consistent with the Guidelines. As previously stated, future armoring including replacement should only be allowed when there is a demonstrated need to specifically protect the primary structure. The intent of this policy is to utilize less impacting stabilization options where appropriate, this provision does not take away a property owners right to protect their house – it does require that the protection method be evaluated to ensure a balance between utilization and protection of the shoreline.

35. These changes are necessary for consistency with the standard set forth in 2.a.

above.

Staff Response: This provision is drafted in response to this specific provision of the WAC Guidelines addressing shoreline stabilization: New or enlarged structural shoreline stabilization measures for an existing primary structure, including residences, should not be allowed unless there is conclusive evidence, documented by a geotechnical analysis, that the structure is in danger from shoreline erosion caused by tidal action, currents, or waves.

36. Here and to the extent used elsewhere, 15 feet seems to be excessively small, and a percentage figure would be preferable. The 50% standard for pier decking, for example, would seem to be appropriate.

    Staff Response: Staff will recommend that the Planning Commission consider revising this provision.

37. Annual inspection would be sufficient, and would cost the property owner half as much.

    Staff Response: Agreed.

38. Regarding fees for City staff, we would like to discuss how these will be made reasonable. While we understand that these are permitted (although not required) by state law, it would seem appropriate the citizens be told the costs in advance, receive detailed invoices showing the persons and hours billed, and assured that rates will be reasonable (e.g., 80% of market rates).

    Staff Response: The City's standard practice is to request a bid for services, which would address hours, billing rate, and total estimated costs. This information would be shared with the applicant prior to completion of a contract. The contract would specify that the total cost not be exceeded without prior authorization from the applicant. The applicant would only be responsible to pay for actual hours billed.

39. Is it necessary to be so prescriptive given that site circumstances will vary considerably from case to case?

    Staff Response: Proposed change is acceptable.

40. This is of particular concern to property owners, who fear loss of highly valuable property if existing vertical bulkheads are required to slope landward.

    Staff Response: This a standard mechanism used to minimize impacts, and is also required by the Corps/WDFW where space is available.

    Ecology: Concur with City. This is a standard minimization technique that needs to be considered for applicability, while also considering site specific constraints.

41. Same comment as above

    Staff Response: Please see earlier comments.

42. We would like to discuss the addition of a provision allowing emergency repairs.

    Staff Response: A new Section has been drafted to address emergency actions. Please note that emergency actions are also addressed under the provisions of WAC 173-27-040, which address when an activity is exempt from the permit requirements.

    Ecology: Please note that emergency repairs are only intended for 'unforeseen' justified emergency situations and still require after-the-fact review and permitting of any structure that may have been installed as an emergency action.

43. Question: what is "prohibited vegetation"? Regardless, can removal of vegetation be "land surface modification"?

    Staff Response: As drafted, removal of vegetation (but not trees) would fall under the land surface modification provisions, which are defined as: The clearing or removal of shrubs, groundcover and other vegetation, excluding trees, and all grading, excavation and filling of materials. The draft provisions would not prohibit vegetation removal, but has established conditions for the removal.

44. Drafting suggestion.

    Staff Response: Agreed.

45. Discussion point: application of this sequencing provision to activities related to residential uses (which are protected) is of concern.

    Staff Response: Residential uses are only "protected" (identified as a priority use) to the extent that they are conducted "in a manner consistent with control of pollution and prevention of damage to the natural environment." (WAC 173-26-241(3)(j) They are still subject to the goals/policies/regulations of the SMA and SMP, including basic requirements for mitigation sequencing as outlined explicitly in WAC 173-26-201(2)(e)(i)(A-F) and repeated here verbatim.

    However, it is acknowledged that in any cases the regulations have already been designed to ensure that impacts have been appropriately avoided, minimized or mitigated. As a result, in order to clarify when the City will require an analysis of these provisions, the following section is proposed to be added to these provisions:

    c. In the following circumstances, the applicant shall provide an analysis of measures taken to mitigate environmental impacts:

a) Where specific regulations for a proposed use or activity are not provided in this Chapter;

b) Where either a Conditional Use or Variance application are proposed;

c) Where the standards contained in this Chapter require an analysis of the feasibility of or need for an action; and

d) Where impacts to ecological functions are not otherwise avoided or mitigated through this Chapter by specific dimensional or mitigation provisions, such as shoreline setbacks, vegetation planting, and other provisions.

Ecology: Concur with City's response. Reference earlier response to KLA on this issue of Residential Uses as a SMA "Preferred Use".

46. See comment immediately above. Also, will this provision be applied independently of the specific procedures required by this Chapter for certain activities?

    Staff Response: Please see earlier comments.

47. Same comment as above.

Staff Response: This provision is proposed to be deleted.

48. This clarification is needed to prevent this provision from requiring compliance with anything that is not a properly applicable law or regulation.

    Staff Response: Agreed.

49. QUESTION: should this be south of Waverly Park?

    Staff Response: Please see earlier comments.

50. QUESTION: should this be south of Waverly Park?

Staff Response: Please see earlier comments.

51. QUESTION: should this be south of Waverly Park?

Staff Response: Please see earlier comments.

52. Acceptance should be mandatory given that there does not appear to be any reasonable basis for refusal.

    Staff Response: Agreed.

53. As a general matter, the many abbreviated cross references in this document are very challenging to follow. They could be made unambiguous by simply

referring to the complete section number.

Staff Response: Agreed. Internal referencing does need to be addressed.

54. Basing the tree management provisions of this regulation on the Shoreline Setback is problematic for at least three reasons: first, it is excessive because in some cases this means that trees located 59 feet from OHWM must be replaced on the 3:1 basis. These are not shoreline trees. Second, it is inequitable to treat property owners so differently. And third, such disparate treatment cannot be supported by proper science, which would necessarily treat all trees of a certain distance from the lake equally.

    Staff Response: WAC 173-26-221(5)(c) notes that the SMP is required to establish vegetation conservation techniques such as clearing and grading, that apply to the shoreline jurisdiction. Staff has proposed to implement tree retention provisions specifically within the shoreline setback since vegetation in this area in particular provides key shoreline functions. Staff is concerned that proposals that further reduce the area where tree retention features are applicable will not be consistent with the WAC Guidelines.

    At the same time, staff is proposing an alternative tree retention provision in order to better respond to the different functions that larger trees provide. See staff memo to the Planning Commission for the meeting of August 27, 2009 for more information.

    Ecology: Ecology does not agree that tree's located 59' from OHWM are not shoreline trees. The SMP Guidelines list "Riparian Vegetation" and "Wildlife Habitat" as ecological functions for which the SMP must ensure no net loss. Shoreline associated birds and other wildlife utilize areas and habitats well beyond 59' upland of OHWM. Ecology's interpretation of this standard is that tree replacement ratio is intended to support (make up for) functions that would be lost when a tree is removed. This is based on the reality that habitat functions associated with a larger mature tree could not be provided on a 1:1 ratio with a newly planed young tree. In other words, there is a temporal loss when a mature tree is removed and replaced with a young tree that may take many years to grow to a size equivalent to the original tree.

55. Requiring property owners to replace at their sole expense trees that have succumbed to Acts of God is overreaching the bounds of reasonable government. Requiring 3:1 replacement in such cases is even further over the top.

    Staff Response: This was a requested change from the Planning Commission. Staff will bring this forward for their review.

    Ecology: If a tree is intentionally removed, then shoreline functions are lost and this actively should be mitigated. "Acts of God", storm damage, hazard trees etc, may be a different situation for which many local regulation provide some flexibility subject to a objective evaluation by an expert.

56. Notice that this provision is a much weaker protection of highly valuable and sought-after private views than the provisions elsewhere in these regulations regarding public views, which completely prohibit view obstruction. This addition would require the applicant to plant the trees unless there is no way to do so without obstructing water-facing views, and even then only where the obstruction would be unreasonable.

    Staff Response: Please see previous comments. Staff has proposed modifications in response to comments on views.

57. We do not understand why such sweeping authority is needed given that improvements within the shoreline setback are already prohibited. Note that trees not covered by this Chapter are not "unprotected", but rather are covered by Kirkland's existing tree ordinance.

    Staff Response: Trees can be impacted by construction occurring outside of the shoreline setback, but still within its root zone. This same provision is contained within Chapter 95 KZC.

58. Question: is this section necessary given that these provisions already exist elsewhere in the Kirkland Code? Is this intended to be more restrictive?

    Staff Response: Staff does not understand question.

59. Question for Staff: does this mean that any application for any permit much comply with the requirements of this Section 83.400 3.? We need to understand what all would trigger this requirement. Also, what exactly is the "nearshore riparian area located along the water's edge"? We could not find where this is defined.

    Staff Response: If a property does not meet this requirement, compliance is addressed under the provisions of Section 83.550.5.g, which states:

    a. Nonconforming Shoreline Setback Vegetation- The vegetation requirements of this Chapter must conform with 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 all structures on the subject property.

    *Riparian area is defined as: **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, habitat and other riparian features that are important to both riparian forest and*

aquatic system conditions.

60. It would be unreasonable to reject existing vegetation that complies with the requirements.

    Staff Response: Proposed change is acceptable.

61. This provision should apply regardless of the location of the primary structure, because the test is substantial interference. If the primary structure is located further from the OHWM, then it will be less likely that vegetation will substantially interfere with the use and enjoyment – that is, the test works regardless.

    Staff Response: The intent was to provide a dimensional standard that is predictable and to reduce ambiguity.

62. This provision is needed to prevent mitigation requirements from being unbounded by cost and hence unreasonable relative to the cost of the overall project. Note that the burden is on the applicant to show that costs cannot be brought within the limit, and the City retains discretion on how to modify the mitigation requirements to achieve reasonable cost. This is a major concern of property owners, who justifiably fear that they will be saddled with unlimited costs of compliance with new regulations. As currently written, there is no requirement that mitigation be reasonable or limited in any way, hence the concern.

    Staff Response: Staff is unclear about the concerns about the cost of vegetation, since this is not a significant cost to a project. Further, as noted previously, mitigation is needed to compensate for impacts. If mitigation costs are unreasonable, the project can be redesigned to avoid or further minimize the impacts.

    Ecology: Concur with City. Ecology would not support a "cost" criteria potentially limiting mitigation that is intended to offset new development.

63. Requiring dedication is unnecessary and overreaching. It is unnecessary because this Chapter already prohibits public view obstruction with the force of law. It is overreaching because easements are forever, and it is improper to attempt to extend the conditions of a law beyond its future amendment or repeal.

    Staff Response: Proposed to ensure that new property owners have constructive notice of conditions affecting their property.

    Ecology: Concur, dedication is an effective way to ensure long-term compliance.

64. DISCUSSION POINT: does this mean that lawful subdivision of residential property with Residential-L would require public access without exception?

Staff Response: This means that only government facilities and other public lands in Residential-L environment would be required to provide public access.

Ecology: should discuss – see previous comments with reference to creation of 4 or more dwellings/lots req. dedication of public access.

65. Missing word

Staff Response: Agreed.

66. "Remodeled" is not defined in the Zoning Code, but alternation is a defined concept, and this is the formal name of the permit, so this is the clearest term.

Staff Response: Agreed.

67. The subject of this sentence is "structures", and so should be used consistently.

Staff Response: Agreed.

Ecology: note that "Non-Conformity" is not restricted to "structures" but can also apply to setbacks, buffers, uses, etc. Ecology would suggest that the specific word 'structure' not be included in this standard to ensure the concept on prohibition of expansion of non-conformity does not apply to "structures.

68. This change for consistency with Section 83.550 5.c.2)c)iii), and see comments below

Staff Response: Agreed.

69. The deleted language defeats purpose of section and is contrary to the principal told to residents and Planning Commission that non-conforming structures can be rebuilt after fire or other casualty provided they do not increase the non-conformity.

Staff Response: The Planning Commission recommended this type of language for this section. Staff will present the proposed change for their consideration.

70. This is a more reasonable period given that it may not always be possible to commence within 12 months given insurance companies, etc., especially after a large event such as an earthquake or tornado.

Staff Response: Longer time frame of 18 months was to be proposed by staff.

71. Without this addition, this provision defeats the purpose of this section and is contrary to the principal told to residents and Planning Commission that non-conforming structures can be rebuilt after fire or other casualty. If a non-conforming structure is damaged by fire etc., it should be allowed to be rebuilt

as it was.

Staff Response: The Planning Commission recommended this type of language for this section. Staff will present the proposed change for their consideration.

72. QUESTION: shouldn't there be an exception not only for "repair or maintenance of structural members", but also any structural change that is otherwise required by law or regulation? For example, if after a fire a structure must be rebuilt, but cannot be rebuilt as is because of the application of other code provisions for building standards, safety, etc., then such alternations should not trigger a requirement to bring the entire structure into conformity with the new regulations.

    Staff Response: Staff felt this would be addressed under provisions for damaged improvements, whereas this section deals with voluntary changes to a structure, where gradual compliance would be required when structures are voluntary replaced or modifications made to exterior walls or roof which are non-conforming. The proposed provisions are consistent with the typical approach to nonconforming structures, where the City requires gradual compliance when structures are voluntary replaced or modifications made to exterior walls or roof which are non-conforming. Also, in terms of evaluating no net loss issues, the City relies upon this type of provision, which would result in some nonconforming development gradually coming into compliance in order to offset other improvements from newer construction that may occur closer to the lake. The City has allowed broad provisions for remodeling, but when replacement of a structure occurs, that is the best opportunity to see the redevelopment come into compliance.

73. Non-conforming structures should be permitted as long as the non-conformity is not increased.

    Staff Response: This is a typical approach to requiring overall compliance on a property as significant investment is made on-site.

    Ecology: cannot support this change. Non-conformity should be minimized when possible for which this standard is an important SMP component.

74. DRAFTING: the terms "expanded or enlarged" are often used together in this section, as if they mean different things, and in some cases only one or the other term is used. It is clearer to use only one term (e.g., enlarged), which is defined to mean an increase in the footprint of the structure. Confusion or dispute about this in the future serves no purpose, of course.

    Staff Response: Staff has proposed modifications to this section.

    Ecology: Disagree. Footprint is not the only metric used to evaluate non-conformity. As previously stated, non-conformity can take many different forms

for which the SMP should not preclude opportunities to regain conformity when appropriate.

75. DRAFTING: this subsection "v)" does not appear to be an example like the rest of the list. Is this correctly formatted?

    Staff Response: This was not intended to be an example, but rather listed as a separate standard.

76. Again, non-conforming uses must be permitted to be rebuilt and/or replaced provided they are not enlarged.

    Staff Response: See notes in 72 above. This section provides a special provision for voluntary replacement of structures that are adversely impacted by special site circumstances. Given the shoreline and critical area issues involved, staff believes it is important to evaluate the best location to rebuild the structure.

77. DRAFTING: this provision should be identical to e) above.

    Staff Response: Agreed.

78. CLARIFICATION/QUESTION: where these provisions refer to "other requirements of this Chapter", doesn't this need to be clarified that this is not referring to the setback requirements? It seems clear that this reference to "other requirements" cannot include the setback requirements (otherwise the section makes no sense).

    Staff Response: Intended to address standards other than those being modified through this provision (shoreline setback and critical area buffer).

79. This revision adopts the correct standard stated in subsection c)iii), namely that conformance should be required where an action is taken that would increase the extent of the non-conformity.

    Staff Response: Agreed.

80. This provision appears to be aimed at getting around case law imposing an intent requirement on such abandonments. As such, this is taking away rights from the existing Zoning Code. This could potentially prohibit mother in law apartments that go unrented for a brief period.

    Staff Response: Staff will review with City Attorney. Note: Accessory dwelling units are not prohibited and would not be considered nonconforming.

81. It is unclear what this provision is trying to address, and it appears to be missing some words. Given its placement, it has to apply to some type of non-conformance. But if this is about non-conforming structures, this is already

covered in Section 83.400 3.b.5) et seq. Perhaps this is an artifact and should be deleted entirely?

Staff Response: This addresses when the shoreline vegetation standard is required. A reference to this section has been added to shoreline vegetation section for clarity.

82. FOR DISCUSSION: appropriate vesting provisions and effective date to this Chapter. One particular issue is activities for which a permit is not required, but which are regulated by this Chapter, how should activities that are in-process be handled?

Staff Response: Good suggestion.

Kirkland Plant List

Recommendations for Required Landscaping and Restoration Planting

Native Plant List

A list of excellent native trees, shrubs, and groundcovers that improve wildlife habitat as well as the health of our streams, wetlands, and lake shorelines.

* Consult a wetland professional before planting or disturbing vegetation in a wetland.

** Approximate size in 10 years. Actual size will vary.

★ Suitable for shorelines

Shrubs

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Acer circinatum Vine Maple ★	15/7 ~~20/10~~	•			•			•	•	•	This small shrubby tree provides great fall color. Best in partial sun or shade where it sprawls like a vine. Highly desirable and easily available.
Amelanchier alnifolia Serviceberry ★	12/10 ~~25/15~~	•		•	•		•	•		•	Provides beautiful aromatic flowers in spring. The berries provide food for birds. Highly desirable and easily available.
Cornus sericea Red Osier Dogwood ★	8/10	•			•	•	•			•	Provides fall and winter color from the red stems. Highly desirable and easily available.
Corylus cornuta Beaked Hazelnut ★	15/8 ~~20/10~~	•		•	•		•	•	•	•	Slow-growing, the Beaked Hazelnut forms attractive clumps and provides food for wildlife.
Gaultheria shallon Salal ★	2/4		•	•	•		•	•		•	Dark, glossy leaves. Berries provide food for birds. Highly desirable and easily available.
Holodiscus discolor Oceanspray ★	12/8 ~~15/10~~	•		•	•		•	•		•	Delicate creamy white flowers. Good for sunny, dry soil habitat and riparian restoration projects.

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Shrubs

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Mahonia (Berberis) aquifolium Tall Oregon Grape	6/4		•	•	•		•	•		•	The leaves of the Tall Oregon Grape look like holly. The berries are dark blue and edible. Highly desirable and easily available.
Myrica californica Pacific Wax Myrtle	8/6		•	•	•		•	•	•	•	A good evergreen native screen plant. Winter damaged at 15 degrees Fahrenheit.
Oemleria cerasiformis Indian Plum	8/6	•		•	•		•	•		•	The purple fruit produced by the Indian plum provides food for birds, who also use the plant as a nesting area. Tolerates shade. Small blooms in late
Philadelphus lewisii Mock Orange	10/8 ~~12/9~~	•		•	•		•	•		•	Fragrant flowers and thick branching used as nesting habitat.
Physocarpus capitatus Pacific Ninebark	8/6 ~~12/10~~	•			•		•	•		•	Large, spreading, versatile shrub with white flowers that makes great habitat.
Ribes sanguineum Red Flowering Currant	6/4	•		•				•		•	Blooms May through June with white to dark pink flowers. Highly desirable and easily available.

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Shrubs

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Rosa nutkana Nootka Rose	6/6	•			•		•			•	Kirkland's Rose Hill used to have many of our native roses.
Rubus parviflorus Thimbleberry	4/3	•		•	•		•	•	•	•	This versatile shrub is a wild relative of the raspberry and produces tasty red berries. It provides food and shelter for wildlife.
Rubus spectabilis Salmonberry	6/6	•			•	•		•	•	•	Edible fruit and adaptable to moist shady spots.
Sambucus racemosa Red elderberry	10/8	•		•	•		•	•	•	•	Stout hollow stems, quick growth and attractive flowering, berries, and fall color.
Symphoricarpos albus Snowberry	6/3	•		•	•		•	•		•	This very versatile shrub produces delicate branching, white berries, and pink-white flowers.
Vaccinium ovatum Evergreen Huckleberry	10/4		•	•	•			•	•	•	Prefers shade; if planted in sun, soil must be moist. Highly desirable and easily available.

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** Approximate size in 10 years. Actual size will vary.

Shrubs

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Vaccinium parvifolium Red huckleberry	~~6/4~~ 4/3	•		•	•		•	•	•		This is often found attached to a decomposing stump. Limited availability; hard to transplant into the average garden.
Viburnum edule Highbush Cranberry *	~~10/8~~	•			•			•	•		Maple-like ~~Sharp-toothed~~ leaves, white flowers, and orange to red berries.
MAHONIA (Berberis) nervosa * Low Oregon grape	~~8/6~~ 2/3		•	•	•			•	•	•	Compound leaves, evergreen, yellow flowers, purple berries, easy to grow, good groundcover
Symphoricarpos mollis * TRAILING Snowberry	2/6	•		•	•		•	•			Leaves + fruits like common Snowberry, trailing habit, good groundcover Somewhat difficult to find
Potentilla gracilis * Slender cinquefoil	2/2	•		•	•		•	•		•	BRIGHT Yellow flowers in summer, drought tolerant. MAKES a nice border plant.

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** Approximate size in 20 years. Actual size will vary.

A SUITABLE FOR SHORELINES

Trees

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Abies grandis Grand Fir	60/20		•	•				•	•		Shady/partial sun-loving tree with glossy green needles. Does not transplant from the wild - nursery-grown only.
Acer macrophyllum Bigleaf Maple A	50/25	•		•	•		•	•			This large, fast-growing tree offers shade and important wildlife habitat. It has large, distinct leaves.
Alnus rubra Red Alder A	50/20	•			•	•	•				Feed and shelter birds with this fast-growing tree with brittle limbs and shallow, weak roots.
Arbutus menziesii Pacific madrone A	35/30	•		•	•		•	•			Only broadleaf evergreen native; difficulty in transplanting; establishes in rocky, poor soils; do not disturb if seedlings growing; gets canker
Cornus nuttallii Pacific Dogwood	50/20	•		•	•		•	•			Susceptible to diseases, our native Dogwood provides great fall color; requires well-drained soils; beautiful flowers.
Crataegus suksdorfii (douglasii) Black Hawthorn A	25/15	•			•	•		•	•		This small, shrubby Hawthorn is loved by birds for food and shelter.
Fraxinus latifolia Oregon Ash A	50/20	•			•	•	•	•			Tolerates flooded wet soils for short periods.

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Trees

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Malus fusca Pacific Crabapple	30/20	•			•	•	•	•			A favorite food source and nesting tree with small blooms and fruit.
Picea sitchensis Sitka Spruce	45/20		•	•	•		•	•			Prefers moist soil to look healthiest. Varying shades of green with broad horizontal branches. Subject to Cooley spruce gall, caused by aphids.
Pinus contorta Shore Pine	40/20		•	•			•	•		•	Grows in poor conditions where other species do not thrive. Highly desirable and easily available.
Pinus monticola Western White Pine	40/20		•		•		•	•			Subject to Blister Rust Disease, this 5-needled Pine has blue-green foliage.
Populus trichocarpa Black Cottonwood	80/30	•			•	•	•				Plant this fast growing, aggressively rooted tree 40 feet or more away from sidewalks, sewers, and structures. Limited use.
Prunus emarginata Bittercherry	25/15	•			•			•	•		Small white flowers bloom in spring. Limited quantities available from nurseries.

Not commercially avail!

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Trees

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Prunus virginiana Chokecherry	25/15	•			•		•	•			Tiny white flowers; good fall color. More available than Bittercherry.
Pseudotsuga menziesii Douglas Fir	65/25		•		•		•	•		•	Our most common native tree. It can grow moderately to heights over 100'. Highly desirable and easily available.
Quercus garryana Oregon white oak	50/50		•	•			•	•			Only native oak tree. Slow growing, needs open space and well drained soil; high wildlife value.
Rhamnus purshiana Cascara	30/15	•			•		•	•			Birds enjoy the berries while the bark is used for medicinal purposes.
Salix lasiandra Pacific Willow	30/20	•			•	•	•				Great tree for wildlife.
Salix scouleriana Scouler's Willow	30/20	•			•		•				Great tree for wildlife. Scouler's Willow prefers dry to moist soil; not very wet.
Salix sitchensis Sitka Willow	30/20	•			•	•	•				Great tree for wildlife

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Trees

	Height/Width (in ft)**	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	Details
Thuja plicata Western Red Cedar	50/25		•		•	•	•	•	•	•	For moist sunny and shaded areas, this is a useful native with graceful spreading branches. Highly desirable and easily available.
Tsuga mertensiana Mountain Hemlock	40/20		•		•		•	•		•	Slow-growing and narrow. Prefers sun. Highly desirable and easily available.

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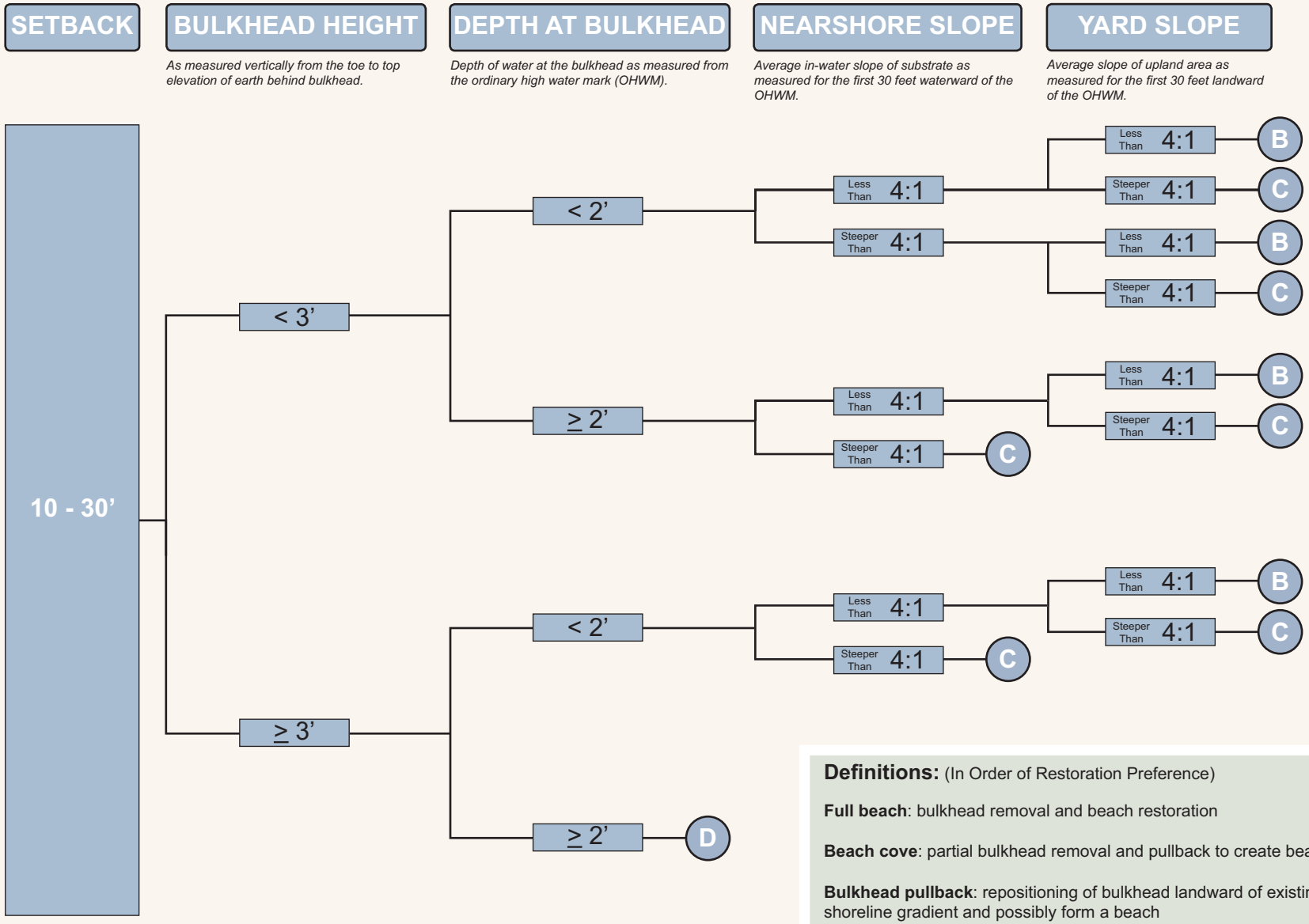
Notes: Sites with less than a 10' building setback are not included with this decision tree as those sites will likely require some form of hard armoring. However, those sites may still benefit from the addition of an in-water gravel/cobble wedge to improve shoreline gradient along with a native plant buffer.



Definitions: (In Order of Restoration Preference)

Full beach: bulkhead removal and beach restoration

Beach cove: partial bulkhead removal and pullback to create beach cove

Bulkhead pullback: repositioning of bulkhead landward of existing location to improve shoreline gradient and possibly form a beach

Slope bioengineering: shoreline stabilization using plant material and other biodegradable materials to hold upland soils in place

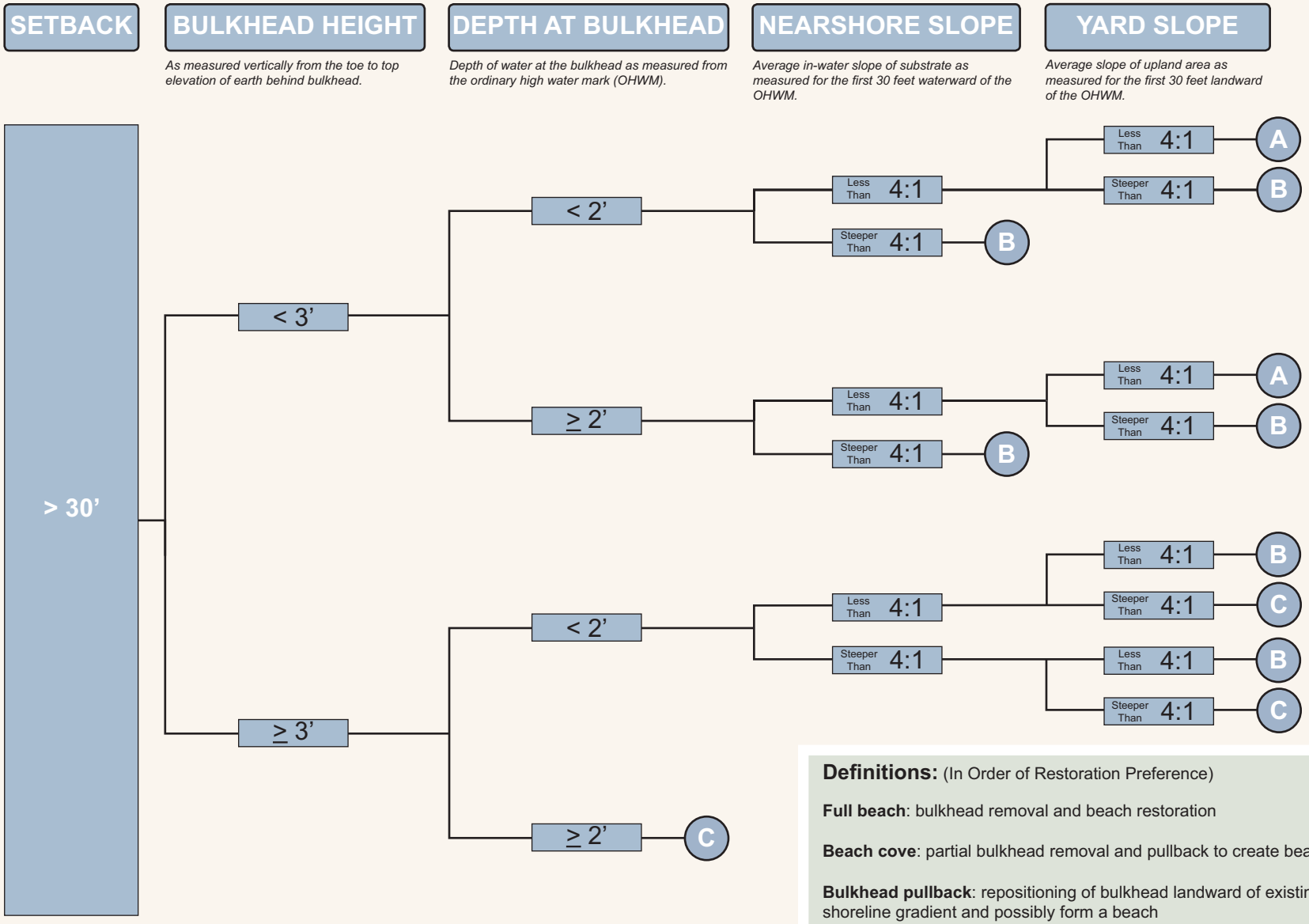
Bulkhead enhancement: bulkhead may stay in same general location, but modifications may include sloping back existing hard structure and/or modifying material type and layout to create potential pocket beach areas.

Nearshore gradient improvement: installation of gravel/cobble substrate wedge for the purposes of improving nearshore gradients

Typical Options:

- (A) Full beach, beach cove, pullback, bioengineering, enhancement, gradient improvement
- (B) Beach cove, pullback, bioengineering, enhancement, gradient improvement
- (C) Pullback, bioengineering, enhancement, gradient improvement
- (D) Bioengineering, enhancement, gradient improvement

Notes: Sites with less than a 10' building setback are not included with this decision tree as those sites will likely require some form of hard armoring. However, those sites may still benefit from the addition of an in-water gravel/cobble wedge to improve shoreline gradient along with a native plant buffer.



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Alternative Shoreline Stabilization Evaluation Project

Final Report

September 15, 2006

Prepared For:

Puget Sound Action Team
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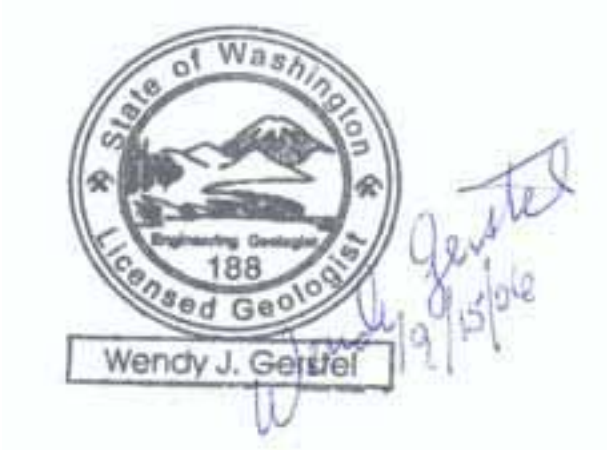

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1.0 Executive Summary

This study was conducted under Personal Services Contract PSC 200504 with the Puget Sound Action Team. The study is an evaluation of alternatives to traditional shoreline armoring practices and applications in Puget Sound. Alternatives are described for this study as any techniques of shoreline stabilization or erosion control other than conventional concrete, rock, or log bulkheads. This report presents the findings of the study. It includes discussion of project design and application effectiveness in addressing perceived and observed site slope stability and erosion concerns on Puget Sound shorelines and offers some general recommendations for future applications.

A steering committee of state agency staff from Ecology, Department of Fish and Wildlife, and Puget Sound Action Team was convened to guide certain elements of the study. The findings of the study are based on observations made at more than 17 sites, although only the 17 selected by the study Steering Committee are reported on here. Additional 'alternative' sites not included in the study had either insufficient background information, were too recently installed, or had access or ownership barriers. Selected sites were restricted to those constructed or installed in the past 8-10 years. All shoreline treatments and site assessments are site specific and do not attempt to capture the broader, regional-scale coastal issues of slope stability, habitat restoration, or sea level changes within Puget Sound. However, some projects were designed in an effort to minimize these larger scale issues.

Project sites were classified by a combination of the coastal and upland geomorphic setting and the intended application objectives. The resulting four categories into which all 17 sites were classified are as follows: 1.) high bank (>15 ft) stabilization, 2.) low-no bank (<15 ft) stabilization, 3.) bulkhead removal, and 4.) bulkhead protection. A number of sites fall into more than one category because of reach differences within the project area.

Project sites were evaluated through a suite of questions relevant to the project classification, its construction, and site conditions. The questions addressed applicability of the project to site concerns, construction logistics, project performance, habitat conditions, and possible consequences of sea level rise.

Our findings indicate that the process of advocating for, permitting, designing, and installing/constructing alternatives to traditional bulkheads would benefit from more coordinated objectives and guidelines from permitting agencies. It appeared that site characterization in some instances was deficient in assessing geologic, hydrologic, and coastal geomorphic processes contributing to the issues being addressed in the project implementation, and that plantings did not always consider local site conditions.

Perceived issues and concerns of the property owner, those triggering the property owner's initial shoreline modification permitting request, were over-emphasized at some sites, leading to apparent over-design of, and possibly unnecessary mitigation.

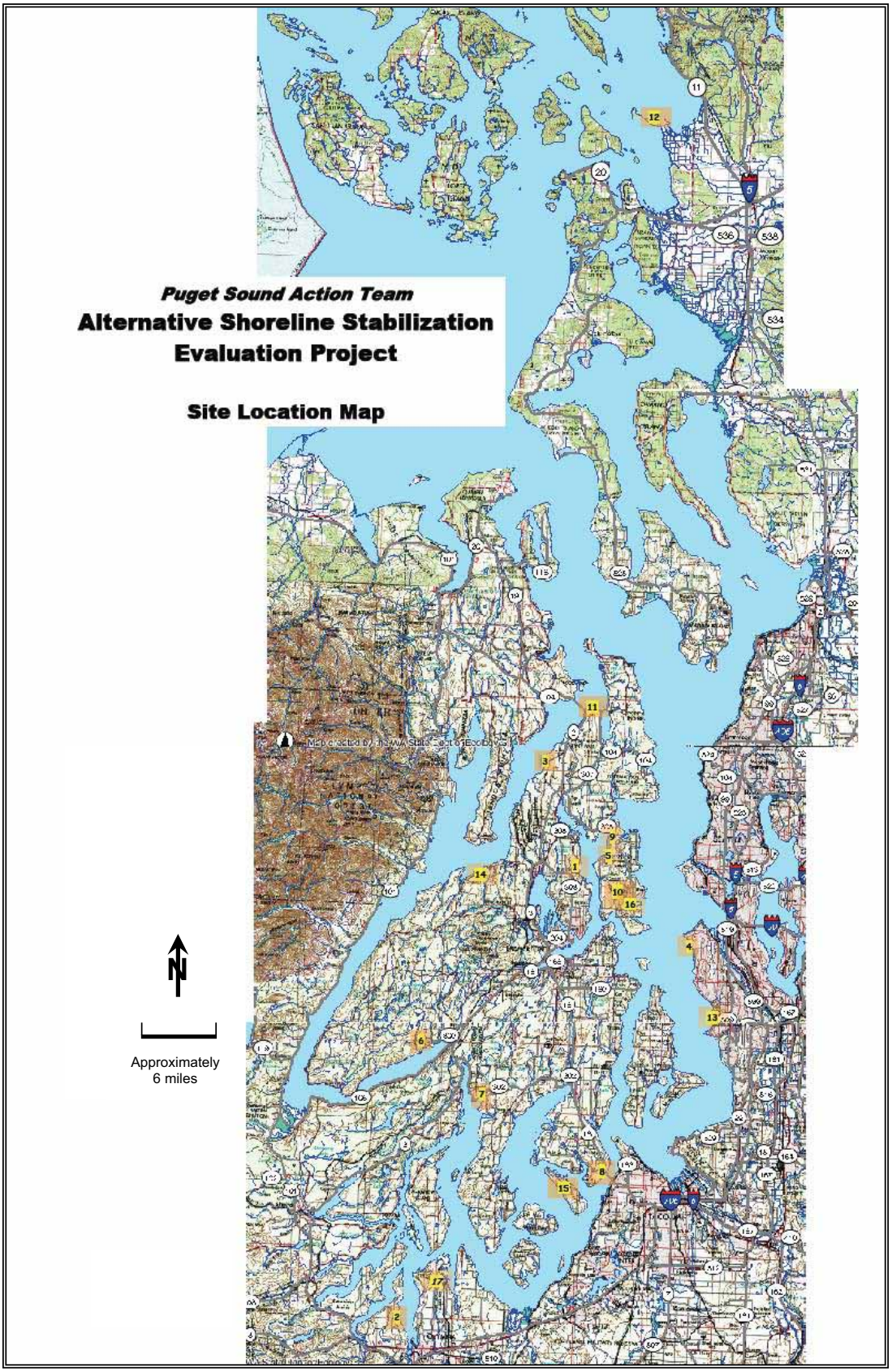

Figure 1. Location map of Puget Sound with the 17 coastal sites evaluated for this study.

Vegetation planted at some sites, even when native to the region, often did not thrive, likely due to unsuitable site conditions. In Table 1 we document our observations on geology, slope processes, and vegetation for each site for comparison between sites.

Requiring more complete, and possibly interdisciplinary, site characterization as part of the permitting process could ultimately reduce project costs and environmental impacts. Additional improvements need to be made in the depth and availability of information provided to shoreline property owners, who are being asked to consider alternatives to the traditional log, concrete, and rock armoring. We found shoreline property owners, although often willing to be test cases, commonly lacked readily accessible information on the rationale for implementing shoreline armoring alternatives, and received minimal guidance on how to pursue implementing these alternatives.

We learned from our interviews with contractors that there is a need for information and guidance on material resources and design specifications for these alternative projects. They felt sediment-size specifications for "beach nourishment" components often seemed arbitrary, and locating sources for the specified materials was difficult. Several contractors commented on the lack of engineering specifications for anchor pull-out design in the beach environment, forcing a "best guess" and possibly overly conservative approach.

Providing this type of information, and stream-lining the permitting process, could lessen the uncertainty, confusion, and frustration currently experienced by homeowners and contractors, and would serve to encourage more alternative projects.

2.0 Introduction

Currently, armoring covers over 800 miles of the shoreline of Puget Sound (PSAT, 2004), nearly 75% of the shoreline in some counties (Herrara Environmental Consultants, Inc., 2003). Known effects of shoreline armoring include shortening, steepening, and coarsening of beaches, inhibiting input of necessary sediments and large wood from nearshore bluffs, interrupting long-shore sediment transport processes, and eliminating long reaches of marine riparian vegetation. Alternatives to traditional shoreline stabilization measures are seen as a way to reduce the extensive shoreline armoring, restore natural shoreline processes and ecosystem function, and ultimately to improve the health of Puget Sound. Consequently, counties and cities are being asked by state regulators to evaluate shoreline armoring permit applications with more scrutiny, and to encourage the use of alternative slope stabilization and beach conservation techniques.

In response to society's desire to live more responsibly with our natural environment, a small group of shoreline landowners, regulatory agency staff and waterfront construction practitioners began experimenting in the late 1990s with alternative or "softer" methods of protecting marine shorelines from erosion and slope failure. Recommended and applied alternatives have included regrading of previously-modified steep slopes, adding

sand and gravel to beach reaches (beach nourishment), anchoring or placing logs on the upper beach, placing at the surface or burying large rocks or concrete blocks, and planting vegetation. These techniques have been used in various forms, combinations, and configurations. The results are promising, but measures of each method's (or combinations thereof) effectiveness are largely anecdotal, and there has been no systematic evaluation of their effectiveness and appropriateness until this study.

This effort to evaluate shoreline stabilization alternatives feeds into the basic framework established under Washington Governor Christine Gregoire's Puget Sound Partnership (signed in December, 2005, and having support from the State Legislature) for improving the health of Puget Sound through actions such as water quality improvements, appropriate land management, and public education and involvement.

2.1 Project objectives

This study arose from the need to evaluate the effectiveness of "alternative" shoreline armoring applications and techniques, and subsequently to develop recommendations on the implementation of future shoreline site modification projects for local and state government planners and permitting staff, homeowners, and private geo-engineering consultants and contractors.

The impetus for this study was long-standing landowner and contractor concerns regarding the liability and minimal investment returns associated with alternative slope and shoreline stabilization techniques. The concerns have reportedly grown with increasing pressure by regulatory agencies to implement alternatives. Consequently, the U.S. Environmental Protection Agency (EPA) funded efforts to compile a document for the public, jurisdictional planners, permitting agencies, geo-engineering consultants, contractors, scientists, and others which would provide recommendations for future shoreline stabilization alternatives. This study supports the larger EPA project by establishing a basis for developing those recommendations through the evaluation of existing "alternative" projects.

To evaluate each of the study sites reported here, observations and information were collected on the geology, geomorphic processes, condition of vegetation, as well as perspectives (gathered through informal interviews) of homeowners, contractors, and state agency permitting staff. The interviews were conducted to obtain perspectives on the success of the project and the institutional barriers (both regulatory and informational) encountered. Gaining the landowners' perspectives also permitted comparison of landowners' concerns with observed site conditions and processes, and ultimately allowed for our assessment of the appropriateness of the applied mitigation design.

The 17 sites evaluated for this study were selected for review by the PSAT Steering Committee, including Doug Myers, Habitat Restoration Project Manager for the Puget Sound Action Team (PSAT); Mary Knackstedt, Education and Public Involvement Manager for PSAT; Doug Canning (State Dept. of Ecology, retired); Hugh Shipman, State Dept. of Ecology; and Randy Carman, State Dept. of Fish and Wildlife (WDFW).

The study builds on a previous one by Zelo, et al. (2000), which describes the design and condition of 15 alternative shoreline projects in their first few years after construction.

2.2 Organization of report

This report is organized to reflect effectiveness measures evaluated at each site within the framework of the classification system established for the study. (The classification system is discussed in Section 3.2.) Rather than site-specific discussion regarding measures of effectiveness, we felt it more useful to summarize the effectiveness of alternatives by project type, setting, and the coastal and upland processes acting on it. In other words, site issues and design and construction comments are addressed collectively by classification category in order to provide a more useful tool for developing site design, education, and policy guidance. All site-specific examples should be considered as case studies, not best management practices for any particular shoreline class.

Appendix A is a glossary of terms relevant to this study. Photographs of each study site before (when available) and after project installation are found sequentially included in Appendix B. Site numbers are referenced throughout the text as examples of various category and condition observations. Table 1, the first tab of the spreadsheet in Appendix C, provides the compilation of background information, site observations, and summary evaluation of findings (listed by site number) for all study sites. Table 2 (tab 2 of the same spreadsheet) groups sites by their classification and gives corresponding applied mitigation techniques. Table 3 (tab 3 of the spreadsheet) summarizes the study findings by site classification.

2.3 Site selection criteria

In conjunction with the Steering Committee, study sites were selected based on:

- original installation/construction date within the past 8-10 years,
- convenient site access (both geographic location and likely property owner cooperation),
- available site design and construction history,
- Steering Committee member site knowledge,
- and, contract budget and time limitations.

Based on these conditions, 17 sites were selected from 6 different counties within the Puget Sound basin. All of the sites were visited by the authors. Additional sites were also visited and considered for study inclusion, but are not included in this report because of insufficient background information or lack of time for a complete assessment. However, the perspectives gained from visiting the additional sites have contributed to our understanding of the complexity of the issue, and have added insight into the overall study results.

2.4 Site review logistics

Each of the selected sites was visited once. Observations were made of the geology (the type and sequence of sediments) at the site, coastal and upland geomorphic processes (the external and on-site natural forces) acting on the site, engineering geology (relative characteristics and performance of the geologic units) affecting the project installation,

and natural and planted vegetation of the site. Site history was gathered either on-site or via phone interviews with property owners or permitting agency staff. Invaluable input was provided on site by WDFW staff who accompanied us on most of the site visits.

Travel logistics and necessary schedule coordination with the various project contributors precluded arranging all site visits for low-tide exposure. Although this would have allowed for better assessment of lower beach conditions, at none of the sites did it inhibit our evaluating the effectiveness of the installation. On one or two occasions, we were not able to reoccupy previous photo points.

2.5 Study-relevant geology/hydrogeology of Puget Sound

The geology, hydrology, and geomorphic processes observed and described in this report are offered strictly in the context of their contribution to the issues at the sites being reviewed for this study. Sediments exposed at the sites are described by their observed or interpreted hydro-geologic properties. Neither the objectives nor the scope of this study included correlating described units to regional geologic stratigraphy or glacial history.

The repeated advances and retreats of the Puget Lobe of the Cordilleran ice sheet left behind layers of clays, silts, gravels, and boulders of varying thickness, permeability, and density depending on sediment source, depositional environment, and compaction forces. The character of these sediments and the arrangement of the layers in relation to one another control the movement of ground and surface water, and thereby slope processes and stability, and erosion susceptibility. Denser layers, particularly those with fine-grained components, tend to perch groundwater, increasing the pore water pressures in overlying sediments and weakening them. Any of the sedimentary units may overlie bedrock, whose fracturing and permeability also influence groundwater flow.

Both natural processes and human land-use practices are closely linked in their contribution to upland, shoreline, and nearshore processes. Examples of the many resulting forms of mass wasting, ranging in size from small-scale sapping or piping, to small shallow soil slips, to large deep-seated rotational slump-earthflows, can be seen around Puget Sound (Tubbs, 1974; Thorsen, 1987; Gerstel, et al., 1997). Sites reviewed for this study evidenced some of the smaller, less dramatic of these. For further information on Puget Sound landforms, slope processes, and related topics the reader is referred to the extensive body of literature available through state Department of Natural Resources and university libraries.

Coastal geomorphic processes also contribute to shoreline and beach instability through natural shoreline drift, regular wave action, storm and tidal effects, and responses to natural and man-made shoreline modifications such as large woody debris (LWD) transport and bulkhead construction. An excellent source of information on the coastal geomorphic and ecological conditions and processes, particularly those affected by bulkheads, is the Washington State Dept. of Ecology's website at http://www.ecy.wa.gov/programs/sea/shorelan.html, and the Coastal Zone Atlas of Washington (1978-80).

When comparing property owner concerns regarding slope and beach stability (as described in the site file information) with our own site observations, we often noted a divergence between the two perspectives. We presume this stems from limited review or understanding by the property owner or their contractor of the larger hydrogeologic and coastal geomorphic conditions affecting the site. Because this affected project design criteria and construction, we felt it was important to record the differences in the perspectives. Both are recorded in Table 1; the former under 'Perceived Site Problems/Concerns', the latter under 'Observed Geology/Slope Processes'.

2.6. Terminology

Certain technical and descriptive terms related to this type of coastal work have been borrowed from other disciplines and geographic regions, and their use has caused some confusion, misrepresentation, and at times, controversy. One example is "beach nourishment", generally used to imply the addition of sediment to a sediment-starved beach. This is a long-used practice along shorelines of southeastern U.S. where sand is pumped from offshore "reservoirs", or sinks, onto eroding beaches. However, for at least two of the sites we reviewed, the term "beach nourishment" was used when the goal of importing sediment was to reduce wave energy to the upper beach. In these instances, the added sediment was much coarser than that which occurred naturally, and was not being used to replace eroded sediment.

Another example in the context of this report is "alternative", which is used to imply any design, technique, or structure applied to a site that differ from traditional construction of concrete, rock, or log bulkheads in an attempt to mimic more natural shoreline conditions.

To address the confusion introduced by terminology we have included a glossary of terms (Appendix A) with explanation of their local study-related and in some cases borrowed usage. With the glossary we hope to clarify current local use of the terminology, and bring some of the resulting confusion to light for discussion.

3.0 Overview of sites visited

3.1 Compiled site information

Figure 1 is a location map of the sites reviewed for this study and included in the findings of this report. All site observations and background information for these sites are compiled in Table 1. Site numbers on the map match those listed under 'Map No.' (column A) of Table 1. Names appearing under column heading 'Site Name' (column B) are those of the property owner during the project design and construction. In some cases, properties have since changed hands and, although the project is still referred to informally by the original owner's name, to maintain objectivity and reduce confusion, we refer in this report to sites only by their number.

3.2 Site Classification

We aggregated the 17 sites into four categories and summarize our findings for each category. In order to facilitate use of this evaluation study by property owners and permitting agencies considering alternatives for a specific site, the categories we define each describe an action that is likely to be proposed by a property owner seeking a shoreline modification permit:

- High Bank Stabilization
- Low-No Bank Stabilization
- Bulkhead Removal (or Relocation)
- Bulkhead Protection (or Replacement)

The categories primarily describe an action taken, but also reflect the morphology of the site, and thereby indirectly the processes occurring there. Because of the length of affected shoreline at some sites, morphology and conditions tend to vary along the length of the project, forcing some sites into more than one category (Appendix C, Table 2). Additionally, some sites included more than one action for a given reach, and therefore also fall into more than one category.

"High" and "Low-No Bank Stabilization" are somewhat subjectively defined as greater than ~15ft bluff height, and less than ~15ft bluff height, respectively. Generally, the high-bank sites are affected by upland slope processes (surface runoff and groundwater movement) as well as coastal processes (wave erosion, and sediment and LWD transport) (sites 1, 5, 9, and 17); whereas the low-bank sites are affected primarily by coastal processes (sites 3, 6, 7, 8, and 10). High and Low-No-bank Stabilization project sites were classified as such by a perceived need to address bluff erosion or beach loss.

Classification of a site as "Bulkhead Removal (or Replacement)" required that for some portion of the project reach some sort of shoreline hardening structure was removed and not replaced (sites 4, 8, 11, 13, 14, 16, 17). At sites 4, 8, and 14 a modified rock bulkhead was relocated landward of the original structure.

Sites classified as "Bulkhead Protection (or replacement)" (sites 2, 4, 12) include sites where an existing bulkhead was being compromised by erosion or other structural failure, and there was no interest by the property owner in redesigning the slope without a bulkhead. These site projects are questionably alternative.

Site morphology and geomorphic processes weigh into how each site was classified. Typical observed slope or shoreline processes for each classification of the sites we visited are as follows:

- High Bank Stabilization - Toppling failures, debris slides, debris flows, surface sloughs, sapping/piping, loss of root strength from vegetation removal,
- Low-No Bank Stabilization – Medium-high energy coastal geomorphic processes, sapping/piping, landform modification,
- Bulkhead Removal (or Relocation) - Medium-high energy coastal geomorphic processes,

- Bulkhead Protection (or Replacement) - Medium-high energy coastal geomorphic processes.

3.3. Applied mitigation methods/techniques

A number of different techniques, tools, and materials are currently applied to "alternative" shoreline armoring or stabilization projects, as evidenced by those reviewed for this study (Appendix C, Table 2). These include:

- Placement or anchoring of large logs (large woody debris - LWD)
- Burial of rock or concrete blocks below beach surface for anchoring LWD
- Installation of structures (rock or LWD) aimed at attenuating wave energy
- Addition of sediment to beach ("beach nourishment" – see Appendix A)
- Modification, removal, or replacement of bulkheads
- Planting of native and non-native vegetation

A common project design includes engineering an arrangement of buried rock or concrete blocks (e.g. ecology blocks or Jersey barriers) in a trench excavated into the beach sediments at the base of the slope. Steel cables or posts are then secured to the buried rock or concrete to anchor LWD or buttress other stabilizing structures (e.g. gabion baskets) built on top, above ground. The beach is reconstructed over the buried rock or concrete with imported sediments, and the disturbed area along the base of the slope is then revegetated. Versions of this project design were applied in a number of different combinations and with varying degrees of complexity. A composite representation of the designs is shown in figure 2.

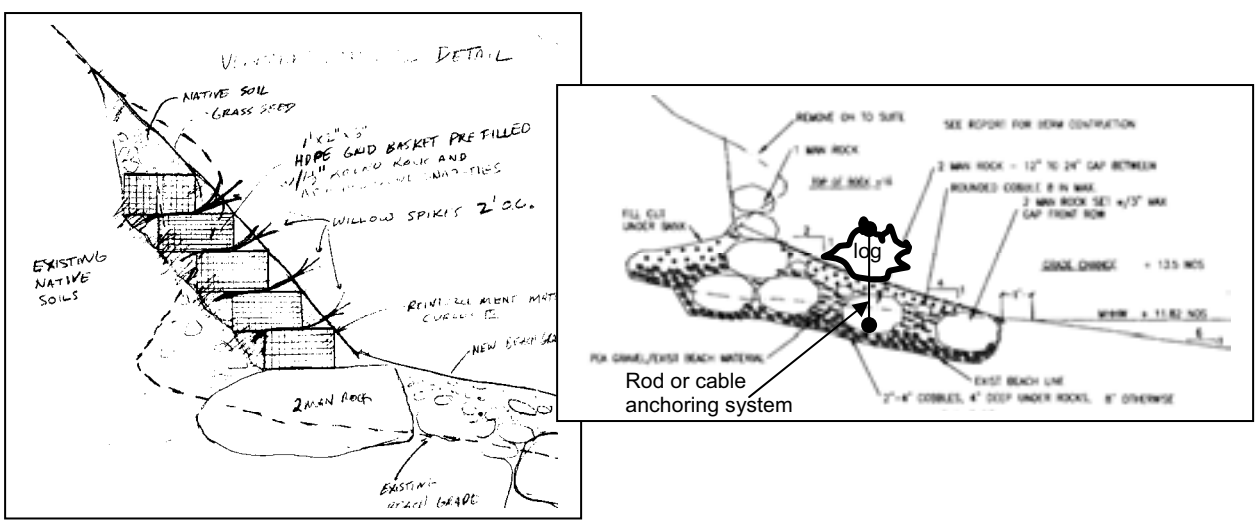

Figure 2. Examples of commonly applied designs where mitigation was intended to address erosion at the toe of the slope, small-scale landsliding of the bluff face, beach lowering, and lack of LWD. Buried rocks or concrete blocks are often used with cables or chains as anchors for the LWD at the surface.

In areas where beach lowering and erosion was a concern, a common practice was to import pebble gravel and sand-sized sediment. Sediment is either trucked or barged in and placed in the high tide zone of the beach. There it is likely to be subsequently reworked and redistributed by wave action.

Vegetation plantings were common to most projects we reviewed, with techniques, plant types, and placement varying greatly between projects. Some project designs focused on establishing native vegetation, while others reflected homeowner aesthetics and view considerations.

4.0 Effectiveness of Projects

4.1 Measures of effectiveness

In consultation with the study steering committee, we established a set of measures of effectiveness both for use in this study to evaluate each project, and as a recommended set of benchmarks for future projects. The measures are based on a series of questions we asked at each site and answered through observations and interviews. Site-specific concerns and conditions dictated which measures were evaluated at any given site. Not all questions were applicable at each site, and different sites warranted different combinations of the following list of questions. Our reporting for this study does not offer specific answers to questions addressed at each site, but rather speaks to the questions collectively for each site category.

1. Was the applied design/construction appropriate for the site?
2. Did the project design address a perceived concern, an observed concern, or both?
3. Is the above-ground project structure holding up?
4. What observable role or impact does the below-ground structure have on the project structure? ..on the beach environment?
5. Are the objectives of the homeowner and permitting agency met?
6. Did the project result in improved coastal nearshore habitat, such as a broadened beach, a marine riparian buffer, or appropriate sediment?
7. Is the project recruiting LWD?
8. Is the planted, remnant, or volunteering vegetation native? Has it survived and is it establishing?
9. Are the desired conditions and/or processes likely to continue? Is maintenance necessary and being conducted?
10. How might the project installation perform and how would site concerns change in the event of sea level rise?

4.2 Monitoring methods/status

Each site was evaluated against the measures of effectiveness listed above. We reoccupied established photo points and, to understand site conditions both pre- and post-construction, had discussions with property owners, permitting agency staff, and project contractors responsible for the design and construction. At three of the sites (sites 12, 13, and 17) systematic beach profile surveys and sediment sampling and analysis had been conducted prior to this study. However, we had no way to assure consistent measuring

techniques, or to accurately relocate survey transects or sampling locations, and therefore did not resurvey or resample at these sites. We did measure lowering of the beach surface relative to LWD anchor posts at site 8. There is no previous data for comparison, but data could be collected in the future to determine if conditions persist or change.

Although monitoring had been scheduled in the design plans for some sites, we found that the fiscal and logistical difficulties of regular consistent monitoring resulted in little of it being done continuously, or even regularly. Only at site 12 was beach profile monitoring done, as part of the project contract, for 5 years following construction. The most common and informative monitoring consisted of observations made on-site by property owners and some permitting agency staff involved in the projects. Observations were most commonly captured by repeat photography. We attempted to reoccupy photo locations whenever possible. We feel these will prove the most valuable in project assessment now and in the future. All historic and future photographs should be archived and made accessible for future review.

4.3 Project evaluation by classification

Because sites are being evaluated under the classification system developed for this study (described in section 3.2), this section describing study findings is organized to reflect those categories. Property owner concerns and our findings are compiled and reported here collectively for each class category, and are summarized in Tables 1 and 3.

4.3.1 ***High Bank Stabilization***

4.3.1a Perceived and observed site concerns at High Bank Stabilization sites

The following is a list of concerns and associated processes compiled from sites within the category of "High Bank Stabilization". Sites exhibiting or perceived to have the typical issues of instability associated with this category appear in parentheses. Perceived concerns are given the same weight here as observed conditions because they were typically the trigger for the project permit request.

- Erosion of the toe of the slope resulting in steepened slopes, cavities (or small caves) at the slope toe, sloughing of surface soils and other mass-wasting processes, and loss of vegetation (sites 1, 5, and 9).
- Upland surface water run-off causing rill and gully erosion (site 8) of beach access areas.
- Mass wasting processes including earth topple, debris slides, debris flows, surface sloughs (sites 1, 2, and 9)
- Bluff or slope retreat (sites 1, 2, and 9)
- Loss of beach access (sites 2, 5, and 9)

Examples of the processes associated with this category can be seen in some of the pre-mitigation photos for sites 1, 2, 5, and 9 (Appendix B). Site 17, although assigned to the "Bulkhead Removal" category, shows small-scale landsliding typical of a high-bank site (Appendix B). At this site slopes are presently over-steepened as a result of the bulkhead removal rather than natural slope processes.

4.3.1b Evaluation of Measures of Effectiveness at High Bank Stabilization sites

The following findings summarize the qualitative responses from all High Bank Stabilization sites to the measures of effectiveness questions listed in section 4.1 and applicable to these sites, although not necessarily in the same order. Each finding is based on a compilation of site observations and information relating the measures of effectiveness to High Bank Stabilization sites.

- Anchored or placed LWD can protect slope toes, although there are limitations due to site conditions, anchoring methods, type of wood used, and durability of construction.
- Beach nourishment, or addition of sediment, is often short-lived if there is no structure to limit longshore sediment transport. Additionally, imported sediment mis-matched with local beach environment can result in habitat modification.
- Structures intended to attenuate wave energy (shore-parallel rock or logs) may serve this purpose at some sites (site 9), although may have little long-term effect in protecting a bluff from damaging wave energy. At low wave-energy sites they are likely unnecessary or ineffective (site 5). They may better serve as sediment traps or sills.
- Burying rock or ecology blocks to anchor LWD causes substantial substrate disturbance during project construction, and may result in long-term damage of natural beach processes and subsurface ecology (sites 1, 2).
- Beach access generally remains vulnerable, especially if mass wasting, surface runoff, and groundwater issues are not appropriately addressed (sites 1, 2, and 9)
- Planted native vegetation can establish, but techniques used resulted in coverage that is substantially less dense than found on neighboring natural shoreline (site 1).
- Remnant and volunteering vegetation is generally a mix of native and fairly aggressive exotic species (sites 1, 5 and 9)
- If plants are present before and during construction, and not subsequently pruned, a marine riparian buffer appears to be developing (sites 1 and 9); otherwise a buffer is not developing (site 5).
- Without proper upland infrastructure management and assuming predicted sea level rise, bluff retreat through mass wasting and erosion will continue and may increase (all high bank sites).

4.3.1c Successful/problematic design and construction practices at High Bank Stabilization sites

- Site-appropriate upland development and infrastructure management resulted in project success to date (site 9). This is most true where site planning included adequate set-back for buildings, capture and routing of surface runoff to the base of the bluff, and efforts to minimize impact on groundwater volume and movement.
- Anchoring logs to buried rocks or concrete blocks might not be necessary in many cases and comes with the side effect of disturbing beach ecology during construction. It may take years for native beach fauna to recruit back into the disturbed area. More success in recruiting LWD for beach sediment stabilization might be achieved by (re)establishing natural beach processes and riparian zones, assuming LWD is available for recruitment.

- At sites in higher wave energy environments, imported beach sediment was relatively short-lived on the site (sites 2 and 9). If the additional beach sediment is an important measure of project success, such sites will require more long-term project maintenance.
- At the low-wave-energy site, imported beach sediment did not reflect natural environment or substrate (site 5).
- Project design needs to better incorporate upland morphology and site history, particularly where the site had been historically modified and slope gradients did not reflect "natural" conditions (site 8). In such cases, active coastal processes work to reestablish a shoreline that might be inconsistent with the project vision.
- Permitting agencies need guidelines for themselves and property owners on what types of shoreline modification projects are considered 'alternative' or 'soft' (site 2).
- The absence of vegetation after construction, or pruning of existing or planted vegetation, does not allow for development of a functioning marine riparian buffer (sites 1, 2, 5, and 9).

4.3.1 d. Recommendations for future mitigation for High Bank Stabilization sites

- Require construction set-back that will avoid the risks associated with bluff retreat.
- Develop and maintain upland infrastructure carefully and with consideration of potential effects on slope stability.
- Manage all surface water to contain and direct it appropriately to the base of the bluff.
- Evaluate and design for groundwater flow issues.
- Evaluate coastal geomorphic processes, and consider natural and locally modified processes in project design and construction.
- Consider specific site design options relevant to site conditions, setting, and uses.
- Supplement beach sediment where necessary or beneficial with in-kind grain size.
- Preserve existing native vegetation during construction, or actively and densely revegetate with native species.
- Continue maintenance of vegetation to ensure native composition and establishment.

4.3.2. ***Low-No Bank Stabilization***

4.3.2a Perceived and observed site concerns at Low-No Bank Stabilization sites

The following is a list of concerns and associated processes compiled from sites within the category of "Low-No Bank Stabilization". Sites exhibiting or perceived to have these issues are listed in parentheses. Perceived concerns are given the same weight as observed concerns because they were often the trigger for the project permit application.

- Risk to site infrastructure from wave run-up, and sediment and LWD transport (sites 3, 6, 7, and 15).
- Disrupted or undesirable public or private beach access (sites 4, 8, and 13).
- Erosion of shoreline and lawn area (site 7).
- Loss of beach through erosion caused in part by adjacent bulkheads (site 14).

Examples of these conditions are best viewed in the pre-mitigation photos for sites 3, 4, 6, 8, and 11 (Appendix B).

4.3.2b Evaluation of Measures of Effectiveness at Low-No Bank Stabilization sites

The findings below summarize the qualitative responses from all Low-No Bank Stabilization sites to the measures of effectiveness questions listed in section 4.1 and applicable to these sites, although not necessarily in the same order. Each finding is based on a compilation of site observations and information relating the measures of effectiveness to Low-No Bank Stabilization sites.

- Project design and construction were generally appropriate for the site, although some may have had success with simpler approaches (sites 3, 6, 7, 13, and 15).
- Project design occasionally reflected and over-emphasized a perceived problem that was not observed during the field visit (sites 7 and 10).
- Anchored or placed LWD can successfully protect infrastructure, although there are limitations due to site conditions (specifically proximity of structure being protected), anchoring methods, type of wood used, and durability of construction.
- Structures intended to attenuate wave energy (shore-parallel rocks or logs) were found to be unnecessary and habitat-altering in the low-energy environment (site 10).
- Burying rock or ecology blocks to anchor LWD causes much substrate disturbance during project construction, and may result in long-term damage of natural beach processes and ecosystem (sites 6 and 7).
- Beach access was generally easily maintained.
- Since construction, LWD has not entered living rooms and or damaged critical infrastructure (sites 3, 6, and 15). It is important to consider this observation in light of the relative storm intensities recorded during the period of evaluation (see sections 7.0 and 9.0 for further discussion).
- LWD was successfully recruited at sites 4, 6, 7, 11, 13, and 15. Those that did not (sites 3, 8, and 14), may not have an available up-drift supply.
- Beach width was broadened at some sites (sites 4, 7, and 14).
- Planted native vegetation is generally getting established, but this is slow (sites 8 and 16). Planted non-native vegetation can suffer from salt spray damage (sites 4 and 14).
- A marine riparian buffer is generally well-established where plants were already present before and during construction, and if they were not pruned subsequently (site 13); otherwise marine riparian buffer is minimal or absent (sites 6, 7, and 15).

4.3.2c Successful/problematic design and construction practices at Low-No Bank Stabilization sites

- Greatest success at minimizing risk to infrastructure comes from appropriate setback from shoreline (site 7).
- "Ramping", or grading of the shoreline to allow for wave run-up, proved successful in reducing erosion and shoreline retreat. This was particularly true where a gravel-filled geogrid fabric used as an underlayment (site 7).
- Adding beach sediment to small or pocket beaches worked better than at more open beach reaches to preserve the imported sediment on site (sites 4 and 14).
- Anchoring logs may not be necessary (or appropriate?) where coastal processes and available LWD allow for naturally recruited LWD (site 7).

- At sites in higher wave energy environments, imported beach sediment was relatively short-lived on the site (sites 6 and 8). If the addition of beach sediment is an important factor in project success, such sites will require more long-term project maintenance.
- At the low-wave-energy site, imported beach sediment did not reflect natural environment or substrate (site 10).
- Project design needs to better incorporate upland morphology and site history, particularly where site had been historically modified and coastal slope gradient did not reflect "natural" conditions (site 8). In such cases, active coastal processes work to reestablish a shoreline that might be inconsistent with the project vision.
- Permitting agencies need guidelines for themselves and property owners on what falls within the scope of "alternative" in encouraging or allowing shoreline modification projects, particularly in the case of new construction (sites 3 and 15).
- Most projects fell short of including the planting of native, salt tolerant species that will create a healthy marine riparian buffer.
- Lawns maintained to the shoreline edge preclude development of a marine riparian buffer (sites 3, 6, 7, 8, 11, and 15).
- A healthy marine riparian buffer is more likely to be successful where existing shoreline vegetation was preserved during and after construction (sites 10 and 13).

4.3.2d Recommendations for future mitigation for Low-No Bank Stabilization sites

- Require construction set-back that will avoid the risks associated with slope or bank retreat.
- Discourage back shore filling to create new home construction sites.
- Consider surface and groundwater issues in project design.
- Evaluate coastal geomorphic processes and accommodate these in project design.
- Consider specific site design options relevant to the site.
- Supplement beach sediment with in-kind grain size where it is deemed necessary to improve habitat.
- Consider appropriate native plantings, in addition to dune grass, to establish healthy marine riparian buffers.
- Require on-going and appropriate maintenance of vegetation to prevent invasion by exotic species and to facilitate development of a functioning marine riparian buffer.

4.3.3. ***Bulkhead Removal (or Relocation)***

Bulkhead removals are commonly initiated or encouraged by permitting agency staff working with a private property owner or public jurisdiction showing interest in restoring natural shoreline processes. In the case of bulkhead removal projects, the relationships of trust and collaboration between participants seem particularly important. The initial involvement of the permitting agency may have been triggered by a permit request to replace a failing existing bulkhead. It should be noted that at two sites in this study (sites 4 and 14) a new armoring structure was located shoreward of the original structure, expanding the beach width.

4.3.3a Perceived and observed site concerns at Bulkhead Removal sites

The following is a list of concerns and associated processes noted for all study sites within the category of Bulkhead Removal, and triggering all project permit applications in this category.

- Compromised existing bulkhead requiring some bank modification, erosion control, or bank stabilization.
- Interest in shoreline restoration or naturalization.
- Desire to maintain beach access.

Sites in this category include 4, 8, 11, 13, 14, 16, and 17, with illustrative pre- (when available) and post-mitigation photographs in Appendix B).

4.3.3b Evaluation of Measures of Effectiveness at Bulkhead Removal sites

These findings summarize the qualitative responses from bulkhead removal sites to the measures of effectiveness questions listed in section 4.1 and applicable to these sites, although not necessarily in the same order. Each finding is based on a compilation of site observations and information relating the measures of effectiveness to bulkhead removal.

- For the most part, project design and construction were appropriate for site issues; these projects resulted in the positive outcome of bulkhead removal and efforts at shoreline restoration, at least on a site scale.
- The high bank site (site 17) was experiencing small-scale landsliding in the first year after removal. Low bank sites 8, 11, and 16 were relatively stable over a similar time period. Long term effects of bulkhead removal, and rates of expected associated slope adjustment, will be variable and dependant on site conditions and processes.
- Plantings of native vegetation were establishing successfully (site 16), although development of a riparian buffer is quite slow unless vegetation existed at the top of the bulkhead and was not removed during construction (only site 13).
- Continued monitoring will help determine the success of bulkhead removal projects in improving coastal nearshore habitat. Some sites have monitoring programs (sites 13 and 17), with preliminary results at site 13 suggesting improved forage fish spawning habitat (Doris Small and Dan Pantilla, WDFW; Mark Plunket, Seattle Aquarium, personal communication, 2006).

A necessary consideration in evaluating the effects and effectiveness of bulkhead removal is how newly-exposed slopes will respond and adjust in the short and long-term. At site 17, the highest rate of slope retreat of the varied project shoreline is occurring as small-scale landsliding along the portion once armored by small rocks. There was immediate observed response to the large February 4th, 2006 storm/high tide event. This portion of the project reach has a slope height of about 15 ft., and was left steep and unvegetated after bulkhead removal and through this first winter (2005-06). It has a southern exposure, and receives significant wave impact during the characteristic winter storm events. However, the somewhat cohesive nature of the slope sediments and the reestablishing vegetation on the upland surface suggest the observed slope instability might be short term, and that over time, site slopes might achieve a dynamic equilibrium. This potential equilibrium would be controlled by material properties (including those contributed by the vegetation), upland conditions, and sea level, wave, and storm surge

effects. Any site being considered for bulkhead removal should consider these factors both in the short and long-term timeframe of the project. Site 17 clearly requires a longer period of monitoring to better evaluate how these and similar slopes might respond to bulkhead removal.

4.3.3c Successful/problematic design and construction practices at Bulkhead Removal sites

- Overall, this is a very positive approach to mitigation of perceived and observed shoreline concerns, although it may not result in beneficial habitat restoration in the larger context because of adjacent shoreline modification.
- Consideration must be given to natural shoreline morphology and processes during design and deconstruction to accommodate shoreline response to the changes.
- Removing part of a bulkhead at a site creates problems at the point where the restored beach and old bulkhead meet.
- Maintaining a lawn to the edge of the shoreline does not allow for a vegetated buffer to establish; additionally, poor maintenance of vegetation prevents establishment of a healthy riparian buffer.
- Planting or landscaping with ornamental species does not form a riparian buffer.

4.3.3d Recommendations for future mitigation for Bulkhead Removal sites

Much more information is needed on the effects of bulkhead removal on the immediate site, as well as the adjacent coastal reach, both up and down drift. Brennan and Culverwell (2005) argue that healthy beach habitat requires a healthy marine riparian buffer, and that coastal restoration efforts should be focused on reducing shoreline armoring through bulkhead removal, restoring native vegetation, and reestablishing marine riparian zones.

4.3.4 ***Bulkhead Protection (or Replacement)***

Only two of the reviewed sites fell into this category (sites 2 and 12). Although they do not fully meet the criteria of alternative shoreline stabilization as we define it for this study, they were included in the study because they incorporated some of the design concepts and techniques common to non-bulkheaded sites; specifically, the addition of beach sediment, and planting of native vegetation.

4.3.4a Perceived and observed site concerns at Bulkhead Protection sites

- Loss, damage, or erosion of existing bulkhead structures.
- Loss or degradation of beach access.
- Erosion or loss of beach area.

4.3.4b Evaluation of Measures of Effectiveness at Bulkhead Protection sites

These findings summarize the qualitative responses from Bulkhead Protection sites to the measures of effectiveness questions listed in section 4.1, although not necessarily in the same order. Each finding is based on a compilation of site observations and information relating the measures of effectiveness to bulkhead protection or replacement.

- For the two sites in this category, and considering site objectives, project design and construction met site objectives and were appropriate in addressing site concerns. These two projects did not result in the desired outcome of a more 'natural' shoreline.
- At both sites the bulkheads are currently functioning as they were intended and are no longer at risk of failure in the short term.
- At site 2, planted vegetation has been pruned and replaced a number of times to include some native and some non-native, all repeatedly pruned to maintain upland views. Planted native vegetation (dune grass) at site 12 is present but not very extensive; additionally, lawns generally extend to the edge of the bulkhead.
- Slope at site 2 is currently stable to homeowner's satisfaction. Infrastructure at the top of the slope, and rock bulkhead at the base would not meet current county design objectives for coastal bluff property.
- The increased beach elevation at site 12 appears to be recruiting LWD.
- The current conditions and/or processes are likely to continue at site 2 without much additional maintenance beyond vegetation, and similarly at site 12, as long as the sill constructed at the down-drift end of the project is maintained.

4.3.4c Successful/problematic design and construction practices at Bulkhead Protection sites

The primary issue here is whether or not the design and construction practices applied to these projects should be considered alternative and recommended in the future. For site 2 the original vegetation plan did not suite the property owner's objectives and has been in constant revision. Site appropriate native plants are not well-established.

4.3.4d Recommendations for future mitigation for Bulkhead Protection sites

We recommend that the type of project represented at site 2 not be considered as an acceptable alternative to bulkhead construction. Although the upper slope is planted with vegetation (some of it native, some not) it required extensive reinforcement (soil nailing) to achieve stability and an irrigation system to assure vegetation survival. Long term vegetation planting and maintenance plans should become an integral part of site designs.

Adding beach sediment to a site can improve site ecological conditions with appropriately sized material and designed sediment stabilization. Site 12, although not exactly an alternative to bulkhead construction, does appear to have created a broader and possibly healthier beach (at least in the short term) through the addition of beach sediment with a down-drift retention structure (sill). However, the effects on neighboring down-drift beaches of retaining sediment at this site are unknown.

4.4 Overall conclusions on measuring project effectiveness

- Each site had distinct issues and conditions which contributed to the complexities of determining how best to measure the effectiveness of the installation.
- Interpreting the geologic and hydrologic conditions and processes of the site is key to evaluating the relative importance of perceived site concerns, establishing observed site issues, and evaluating the ultimate effectiveness of the installation.

- WDFW objectives applied as part of the Hydraulic Project Approval (HPA) for a given site and installation design were not always clear, nor was there necessarily much consistency in objectives between sites.
- Mitigation proposals and designs, particularly in the case of private property applications, evolved with repeated denial of and/or negotiation for permitting, even throughout the life of the project, and depending on its performance. Because of this, "as-built" information was rarely available. In other words, there was generally no documentation of the final above- and below-ground installation. Therefore, fully evaluating the impact and ultimate effectiveness of these projects was difficult.
- Most property owners interviewed were generally willing to try alternatives if the rationale for doing so was made clear early in the permitting process, and if the site risks were manageable. Those opposed, agreed to alternatives only because they would otherwise have been denied any shoreline modification permits.
- Property owners were generally overwhelmed by the permitting process unless contractors were hired to obtain the permits.
- Several site designs had recommended maintenance such as repeated "beach nourishment", but few if any property owners were carrying through with the recommendation, and some sites were showing early signs of beach lowering and erosion.
- Materials used at a site were more often those most readily available during project installation, rather than those outlined or recommended in the permit application site design. This affected our ability to evaluate the effectiveness of project components such as imported sediment size, gradation, and quantity, LWD anchor strengths and depths, or success of original plantings.

5.0 Homeowner satisfaction rating

The findings listed below are qualitative and focus on the attitudes and informal interview responses of the owners and residents of privately-owned property.

- Even with successful "alternative" projects, some homeowners still suffer from "bulkhead envy" and consider their beach and boat access undesirable. Others were happy with their beach access, and found that access remained reliable. Owner satisfaction generally relied on stable bank conditions, simpler access structures, or site conditions of no bank.
- Some high bank property owners continue to be concerned about bluff or slope retreat, even with more than adequate infrastructure/home set-back.
- A number of property owners who attempted to secure permitting themselves, found the process confounding and frustrating. Those who left permitting issues to the contractor were glad not to be involved in that process.
- A number of private property owners expressed concerns about maintaining their views; this was evident in the number of sites with pruned, topped, or thinned vegetation.

- The necessary willingness to acknowledge and commit to continued project maintenance varied among property owners and managers. This included, but was not limited to, adding sediment to the beach, removing exotic vegetation, and allowing for natural native-plant succession.
- Several property owners were pleased to have been involved in designing and constructing alternative solutions to managing shoreline erosion and willing to show-case their project.
- Several property owners commented that the cost of alternative mitigation was close to double the estimate received for the original conventional bulkhead proposal. This makes the action accessible to only a few from a cost perspective, unless there are creative funding solutions available, such as at site 12 where 16 adjacent landowners pooled resources.

Most reviewed sites classified under "Bulkhead Removal (or Relocation)" were publicly owned; city, county, or state. This is likely due to the relatively high cost and risks to upland infrastructure that can more easily be absorbed on public property than on private. However, discussions with monitoring scientists and local citizens following bulkhead removal on public lands indicate favorable response to such efforts of coastal restoration.

The two reviewed private sites where bulkheads were removed represent opposite ends of the spectrum in terms of project scale. Site 14, with elaborate landscaping contracted by the property owner, establishes a pocket beach between neighboring concrete bulkheads extending farther seaward. Site 16 creates a long (several thousand meters) beach where a log yard and vertical log bulkhead used to be. The latter site is used recreationally by local residents, but is still in the process of environmental clean up.

6.0 Institutional barriers

We separated the primary institutional barriers encountered by both property owners and contractors into two distinct components; regulatory (or permitting) and informational. Regulatory barriers are those that involve any and all permitting and supporting paperwork required to gain approval for a shoreline modification project. Informational barriers are those suggestive of the lack of information readily accessible (or even available) to property owners to explain permitting agencies' reluctance to allow bulkhead construction, and the agencies' rationalization for advocating alternatives. Here we present the feedback we received on each component of the institutional barriers in the context of; 1) acquiring the required project permits; 2) understanding regulatory agency objectives; and, 3) acquiring site-appropriate and stipulated material resources for the project.

6.1 Regulatory/permitting

Because of the daunting, and at times seemingly conflicting, regulatory requirements of the numerous necessary permits, most property owners chose to leave the permit acquisition process to the contractor. Those who did were relieved not to be involved. Those who took it on themselves seemed to enjoy the challenge. These are some of the

specific comments we received from either private property owners or project contractors regarding the permitting process:

- Reasons for initial project application denial are not always clear. Applicants would like a better explanation than "no".
- Agencies need to streamline regulations and permitting process. It is currently cumbersome, time-consuming, and often conflicting.
- Permitting process should develop a consistent sequence of evaluation, comment, and finally, record of decision (with permit conditions if necessary) to eliminate vacillation by agencies on project decisions.
- More support, guidance, and outreach for these projects are needed from county planners, since they are generally the hub in the permitting process.

These comments speak to the need for site visits, with both state and local permitting staff, which would occur prior to permits being filed. This would help determine the appropriate response to a real or perceived erosion or slope stability concern and assure that both state and local permitting considers the same proposal.

6.2 Agency objectives

Some of the reviewed projects transitioned from initial traditional bulkhead design to softened versions. This generally took place with negotiation and collaboration between the property owner, permitting agency staff, and the contractor. The exact process of the transition was not always clear, but generally required an innovative and persistent wildlife biologist and a willing property owner. In some cases, the biologist had to be the primary advocate for the alternative design. In one or two cases, the biologist was contacted by the property owner when the initial permit application was denied.

Most property owners we spoke with felt that the shoreline improvement objectives of regulating agencies are not well defined and that staff does not consistently implement any objectives. Contractors we spoke with felt similarly. Permitting agency staff feel there is little agency guidance and support for them to advocate and implement broad agency objectives. The end result then is well-intentioned project participants with little direction and much uncertainty on project goals, design and construction specifications, associated risks, cost commitments, and long-term project performance.

Geotechnical reports, with complete site characterization and description of site infrastructure at risk, could help clarify how responsibility for project success would be distributed among participants (regulating agency, property owner, designer, and contractor). Currently, it is difficult for a regulatory agency to require or suggest using an alternative if there is any suggestion of infrastructure being at risk.

6.3 Contractor Resources

All of the contractors we interviewed commented on the need for the following:

- Consistent regulation between agencies, and between staff of any single agency.
- Necessary support from county planning departments to force alternative techniques, rather than leaving it to the contractor to promote and develop them without guidance.

- Design specification guidance for LWD placed on site. If deemed necessary, establish recommendations or specifications for anchor capacities for anchoring of LWD. (Literature currently focuses on the use of anchored LWD in river restoration projects with little to none addressing coastal applications.)
- Information on the location and availability of project material resources that meet the recommended size and gradation specifications for gravel, rock, and LWD. Most desirable LWD would be large pieces of cedar that include root wad structure.
- Necessary commitment from all parties involved to carry out stated objectives of regulatory agencies for alternative shoreline projects. This should include cost-sharing measures.
- A system to ensure consistent and continued monitoring and maintenance of alternative projects, with built-in feedback for adaptive management and design specifications.

7.0 Study Conclusions

A number of complex and interrelated processes contribute to coastal slope instability, slope retreat, shoreline erosion, and beach degradation throughout Puget Sound. These processes include upland surface water runoff, local and regional groundwater movement, wave impacts from storms and high tides, wave effects from watercraft, vegetation removal, waste disposal, and other land use practices. Our findings suggest that project initiation, objectives, and design often reflect a perceived concern, rather than one accurately represented by existing geologic, hydrologic, or other contributing conditions (Table 1). In many cases it appears that careful characterization of local geologic, hydrologic, and geomorphic processes prior to construction might reveal triggers of slope instability that could be better addressed with appropriate upland management and reduced or minimal structural shoreline modification. At a large number of the sites, project cost and site disturbance might be reduced with this more comprehensive site characterization. To this end, we advocate that current county and state shoreline planning and permitting processes be evaluated and potentially revised to encourage a more thorough characterization of regional and local geology and hydrogeology affecting a site. Additionally, providing more public outreach education on these topics could give landowners a perspective of less concern regarding potential risks to their property, resulting in fewer shoreline modification permit requests.

Many “alternative” shoreline stabilization techniques currently in use appeared to be intrusive and disruptive to natural shoreline and nearshore processes. For example, where anchoring of LWD was an integral part of the mitigation design large (“2-3 man”) rocks or concrete blocks were buried in the beach as anchors. This required excavation of the beach from 5-10 ft below the beach surface along the length of the project, and the off-site removal of large amounts of beach sediment. Extensive damage to beach habitat can result. Continued application of these techniques would benefit from refinement of

designs, including testing of less intrusive and less structural solutions that support coastal processes and the maintenance or establishment of a natural marine riparian buffer.

We also note that project designs, if they specified vegetation at all, apparently did not restrict plantings to native vegetation, focusing instead on landowner esthetics and maintenance of viewsheds. This often resulted in limited survival success of the plantings, particularly those not tolerant of salt spray. Those sites maintaining the obvious existing native vegetation, or planting the most appropriate native plants for the site, had the healthiest and densest vegetation cover. However, since vegetation plans were commonly not included as part of the project design, we could not always be confident about which plants were growing on the site before construction, which were planted during project installation, and which were replacements for earlier unsuccessful plantings. Vegetation success could be increased with project design plans that consider local site conditions. And project success would be greatly improved if plantings were selected to contribute to the stability of the site, with the ultimate goal of building and maintaining healthy marine riparian buffers. Since none of the plans stated this ultimate goal as an objective of the project, we could not treat it as a measure of project effectiveness.

Several sites showed damage to project infrastructure attributed to the February 4th, 2006 storm accompanied by high winds, high tide, and in some areas a storm surge. Observed damage included erosion around bulkhead rocks, gullying of beach access trails, small-scale landsliding and minor slope retreat, and relocation of non-anchored LWD. For most of the sites this was probably the largest storm event during their period of record. None of the observed damage resulted in any upland damage to homes or out buildings, as far as we could tell. Good descriptions of site conditions immediately prior to the storm would be necessary to offer more detailed assessment of the storm damage at each site.

In general, it is difficult to ensure that detailed monitoring data are collected at sites where alternative stabilization techniques are used; this situation is not likely to change in the future, based upon the difficulty of systematically collecting these kinds of data at other types of restoration projects (e.g. wetland, stream, and upland). Additionally, while we were conducting this study, it became apparent that many “soft” or “alternative” projects have been implemented that we did not evaluate and that were unknown to the study steering committee. These two factors suggest that it would be far better to focus on extensive, rather than intensive monitoring as a way of tracking the effectiveness of alternative projects. A database should be kept of the ever-expanding list of sites fitting this description and efforts should be made to assess the measures of effectiveness identified in this report at regular intervals at most of these sites. This would require thorough “as-built” documentation. The data will be most valuable in revising and developing design guidelines for future projects. The data will also help determine through analysis of project successes and failures whether or not any shoreline

modification is necessary to address certain stability concerns, or whether other actions might be taken to improve natural ecosystem function even where there is no infrastructure risk or stability concern.

8.0 Recommendations

These recommendations are intended as general program ideas to advance information dissemination, streamline regulatory hurdles, develop cost-saving stabilization alternatives, and provide general project and program design guidelines. We are hopeful that the appropriate use of alternative shoreline stabilization techniques can reduce both ecological and economic impacts of traditional bulkheading practices. The following is a list of recommendations developed throughout this study to address the objective to discourage conventional concrete, rock, or log bulkhead construction, and to encourage the restoration of natural shoreline ecosystems.

- Expand local community workshops to better address coastal property owner concerns, provide more information on the detrimental effects of traditional bulkheading, and provide clear information on the rationale for seeking alternatives. This should include informational literature on coordinated agency objectives for restoring the health of Puget Sound.
- Provide public outreach education, specifically targeting shoreline property owners, on geology, hydrology, and coastal processes contributing to slope instability and shoreline erosion, and landscaping options to improve stability. Include information on maintaining or promoting native vegetation, site-appropriate planting, and root strength properties of different plants. Proaction and gained insight by property owners could result in fewer shoreline modification permit requests.
- Conduct training for WDFW and local permitting staff on these same topics.
- Develop and nurture relationships of trust and collaboration between permitting agency staff and shoreline residents interested in modifying their shoreline property. Search out opportunities for show-casing alternatives.
- Assure necessary commitment from all parties involved to carry out stated objectives of regulatory agencies for these alternative shoreline projects. This should include cost-sharing measures.
- Include in Shoreline Management Plans standards for geotechnical reports that include those for a geologic site assessment for shoreline modification projects that would consider both coastal and upland characteristics and processes.
- Encourage (require?) interdisciplinary site visits early in the permitting process by a team including state and local permitting staff, project designer/engineer, geologist with experience specific to these issues, contractor, and landowner to assure a coordinated project proposal and permit application.
- Develop a comprehensive cost analysis and comparison by project component (project materials, waste removal, excavation, and construction – per lineal foot or volume of material) of traditional and alternative shoreline armoring or stabilization.
- Provide guidance for accessing and acquiring preferred project resources (LWD, rock, native vegetation).

- Develop generalized design concepts to meet the stated objectives of regulating agencies. Incorporating native vegetation should become a condition of permitting.
- Conduct engineering analysis in coastal environments, or systematically evaluate existing applications of anchoring and burial systems in the coastal environment to establish design recommendations and avoid over-design and excessive cost.
- Research options and feasibility of "Incentive Programs" that, particularly in low risk situations, transfer the liability for infrastructure damage away from the landowner and the public agencies. One option could be to develop an insurance program of sorts; in situations where the risk of infrastructure damage is low, based on a careful assessment of the geologic and hydrologic conditions at the site, landowners who agree to try certain types of alternative approaches are provided with "insurance" against damages. The holder of such policies could be a non-profit organization or even, with some research into market forces, another type of institution.
- Consider developing a program or funding positions within local or state jurisdictions for locally-based individuals who can provide technical guidance to property owners and others regarding shoreline stabilization, erosion control, and related issues.
- Create lists, guidance documents, and curricula for required site-appropriate vegetation relating to site condition assessments, planting criteria, maintenance, root strength properties, etc.
- Investigate the disturbance effects of beach substrate excavation for anchor installations.
- Use public coastal lands as testing and demonstration areas for bulkhead removal and/or alternative stabilization and erosion control projects. Take advantage of these locations to test designs and techniques under a range of coastal and socio-political conditions.
- Develop more extensive, but not necessarily more detailed, monitoring programs to track the results, making sure that "as-built" information is well documented.
- Feed the results of monitoring into research proposed for measuring and evaluating bulkhead removal effects (D. Myers; email communication, June 30, 2005).
- Pursue funding for updating and expanding the Coastal Zone Atlas to include, but not be limited to, current large-scale geologic mapping, current landslide mapping, shoreline location maps, tsunami inundation mapping, shoreline modification maps, vegetation zone maps, forage fish spawning and habitat distribution maps, and predicted sea level rise inundation maps.

9.0 Implications of Sea Level Rise

The following discussion is by no means inclusive or extensive, but speculates on potential site- and landform-specific consequences of predicted future sea level rise. The extensive body of research and literature on climate change indicate that the effects of sea level rise should be incorporated into planning and policy for coastal development in the Puget Sound region (Canning, 2001, and references within). With the expected effects there will likely be an increase in the amount of infrastructure and number of homes at risk to coastal processes, and with that, an increase in the number of applications for shoreline stabilization structures. Accommodating these requests would set the Puget

Sound on a different trajectory than that currently planned for within the Puget Sound Management Plan and local implementation of the Shoreline Management Act, as well as that envisioned by the Governor's Puget Sound Partnership to improve the health of the Sound.

It would be reasonable to expect that low-lying coastal areas could see increased flooding, and exposed shoreline banks and slopes could experience increased erosion and associated slope retreat, particularly during extreme storm events coinciding with high tides. In the short term these effects would be localized to sites currently susceptible to such processes. However, in the long term, broader coastal geomorphic processes will affect regional changes, so the following discussion on possible site-specific changes can only be speculative.

The High Bank Stabilization sites 1, 8, and 9 evaluated for this study and located in high-energy wave environments, could be subject to overtopping of present stabilization installations, infrastructure failure, and accompanied increased rates of erosion and slope retreat. Other High Bank Stabilization sites located in lower wave energy environments, such as sites 2 and 5 of this study, would be less at risk because of their location. Low-No Bank Stabilization sites constructed on flood plains, deltas, or filled back beach embayments (particularly sites 3, 6, 7, 11, and15), and beach front Bulkhead Protection site 12, might be inundated by high tides and storm surges.

This winter's concurrent high tide storm surge and strong winds on February 4th, 2006 is blamed for the damage to project infrastructure observed at some of the study sites. Although preliminary analysis of the relative intensity of the storm and tides by National Oceanographic and Atmospheric Administration scientists suggests the intensity of this event has a recurrence interval of 10-20 years, it was probably the largest storm event to date experienced by most of the projects evaluated for this study. Keeping in mind that the growing body of climate and sea level change literature argues for a general trend of sea level rise throughout Puget Sound, anyone designing coastal mitigation projects should be considering potential short and long-term effects of strong storms, big waves, and more extreme high tides.

10.0 Report Limitations and Intended Use

The findings and recommendations presented in this report are based solely on the site conditions observed during our field reviews, review of limited design and construction documentation, and discussions with landowners and resource and regulatory agency staff. Detailed ecological, geologic, or engineering assessments and analyses of each site were not within the scope of this project, nor was it the intention to provide detailed documentation of as-built conditions.

This report is also not intended to be a critique of individual installations, but rather a comparative study of intended and actual performance of alternative mitigation measures employed under widely varying site conditions. It is understood that in many instances

the constructed mitigation evolved through necessary design modifications brought on by regulatory constraints and material availability limitations. It is also understood that constructed designs were often collaborative among interested parties – landowner, designer, contractor, and regulator, and that the designs were based on the best information available during design and construction.

The intended use of this report is principally for resource and regulatory agency staff to evaluate project design effectiveness, identify additional areas of needed study, and provide guidance for future projects and programs relating to the issues described herein.

11.0 Acknowledgements

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Appendix A: Glossary

The following terms are defined in the context of their application to this study and their common usage in shoreline modification work and coastal geologic studies.

Alternative (or soft) – Techniques of shoreline stabilization and erosion control other than traditional concrete, rock, and log bulkheads. Usually includes some sort of vegetation plantings to soften an engineered solution where vegetation may also contribute to soil and slope stabilization.

Anchoring – Securing large logs to the project beach area with cables or chains, often to buried rocks or concrete blocks.

Armoring – Any hard structure, usually rock, concrete, and sometimes wood, used to blanket a shoreline susceptible to erosion.

Backshore – The portion of the beach beyond most high tides and landward of the berm.

Beach nourishment – A process of artificially adding sediment to a beach with material from another location.

Bulkhead/Seawall – A wall, usually of concrete, rock, or wood, built parallel to the shoreline to protect the bank or slope from wave erosion and to retain soils.

Engineering Geology - A specialty of geology affecting the planning, design, operation, and maintenance of engineering works and other human activities where geological factors and conditions impact the public welfare or the safeguarding of life, health, property, and the environment.

Geology – The investigation and reporting of rock and or sediment characteristics (grainsize, strength properties, groundwater capacity, etc.) at a given location, and their positional relationship to each other.

Geomorphic Processes – Any natural or human-caused internal or external forces that affect the shape of the earth's surface, at scales anywhere from regional to site-specific.

Groin – A structure built perpendicular to the shoreline and designed to trap sand moved along the shore by long shore drift.

Hydrogeology - The study of the occurrence, circulation, distribution, or remediation, of water or its role as a natural agent that causes changes in the earth, including data regarding the interaction of water with sediments and rock units.

Mitigation – Alleviation of site concerns through some action usually involving engineering.

Modification – Any change made to the pre-existing site conditions. Pre-existing conditions may be either natural or previously altered (or modified).

Native [vegetation] – Plants that occur naturally in the region. More specifically for site design, these should be naturally occurring plants that grow in the surrounding area under similar conditions, including amount of sun, type of soil, amount of soil moisture, and types of neighboring plants.

Natural – Conditions, processes, or components of a site that would prevail without human intervention or effects.

Project Infrastructure – Any component of the slope or shoreline modification construction or installation evaluated for this study.

[Shoreline] protection – Generally used to imply techniques or structures applied to a site to reduce impacts from erosion, rather than in an ecological sense.

Sapping/Piping – Localized retrogressive erosion due to dispersed groundwater flow (from upland or marine source) along a contact. This can occur along a broad length of shoreline, resulting in a slope-toe cavity, or be confined to a few inches or less, resulting in the formation of 'soil pipes' or small tunnels.

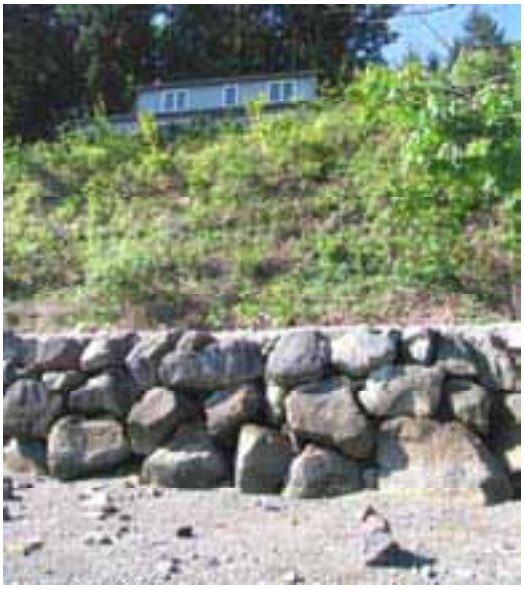
Sill – A groin built level with the beach surface and designed to allow bypassing of littoral sediment while maintaining a prescribed beach grade.

Upland infrastructure – Any homes, out buildings, fences, pipes, power lines, roads, driveways, etc. at a site. The implication for this study is that any of them might contribute to or be at risk from the slope instability and erosion occurring at a site.

Appendix B: Site Photographs

(All construction site photos taken prior to this study are credited to Jim Brennan, Dave Molenaar, Hugh Shipman and Doris Small.)

Site 1 is private property located in Kitsap County, north of Brownsville. The property faces east onto the Port Orchard canal in a med-high wave energy environment, and is classified in this study as a High Bank Stabilization project. Photo on the left shows the site during construction in August, 2000. Photo on the right shows the site during our review in June, 2006. Vegetation has established well, but less dense than on adjacent slopes. Effects of excavating the beach to bury rocks at the base of the stabilized slope are unknown.



Site 2 is private property located on Butler Cove near Olympia, Thurston County. It faces north onto Budd Inlet in a low-medium wave energy environment, and is classified in this study as both a High Bank Stabilization and Bulkhead Protection or Replacement project. Photo shows the site during our review in June, 2006. The rock bulkhead, soil nailed slope, and modified vegetation make it hard to compare this site to other High-Bank alternative designs.

Site 3 is private property in Kitsap County, south of Lofall. It faces west onto Hood Canal in a medium wave energy environment, and is classified in this study as a Low-No Bank Stabilization project. Photo on the left shows the site during construction in 1999. Photo on the right shows the site during our review in June, 2006. This and similarly situated sites (such as 6, 7, 12, and 15) could be at increased risk from tide and storm damage with predicted sea level rise.

Site 4 is Cormorant Cove City Park, a neighborhood park owned by the city of Seattle and located south of Alki Point, facing west onto Puget Sound in a high energy wave environment. This site is classified as both a Low-No Bank Stabilization and a Bulkhead Removal (or relocation) project (the former because of project objectives, the latter because it involved relocating a rock bulkhead landward approximately 50-60 ft, allowing for the creation of a pocket beach). Photo on the left shows the site shortly after construction in 2000. Photo on the right shows the site during our review in June, 2006. Sediment and wood appear to have been recruited within the pocket beach, however, storm waves and surface run-off have caused erosion of beach access pathways.

Site 5 is private property on Bainbridge Island, Kitsap Co. It faces west on an inlet of Manzanita Bay in a low wave energy environment. The site is classified as a High-Bank Stabilization project. Photo on the left shows the site shortly after construction in 1998. Photo on the right shows the site during our review in June, 2006. Logs were anchored in the beach to address a perceived problem of wave erosion at the toe of the slope. We interpreted the slope-toe cavity of concern to have been a result of sapping or piping. Additional mitigation of lining the cavity with geotextile and hand placed rock likely did more than the anchored logs to address this concern.

Site 6 is private property in Mason Co. a few miles southwest of Belfair. It faces south onto Hood Canal in a medium to high wave energy environment. The site is classified as a Low-No Bank Stabilization project and was constructed in 1999. Photo on the left shows the site shortly after construction in 1999. Photo on the right shows the site during our review in June, 2006. This installation held up well in the February, 2006 storm and protected the house in spite of its proximity to the storm tide inundation zone, however, it could see more wave and storm impacts to site infrastructure with predicted sea level rise. As with other similar project design applications of buried LWD anchors, effects on beach substrate and ecology of extensive excavation to bury LWD anchors is unknown.

Site 7 is private property on Case Inlet in Pierce Co. It faces west onto Rocky Bay and Case Inlet in a low to medium wave energy environment. The site is classified as a Low-No Bank Stabilization project and was constructed in 2005. The photo, taken from the homeowner's helicopter, shows the site during our review in June, 2006. Past modifications to the lawn area and adjacent tide flats are a long-time consequence of shellfish harvesting activities. The homeowner and project designer is now creating a more natural looking and functioning shoreline from one strongly influenced by human activities. Another positive aspect of this site is the large set-back of the home, significantly lowering the risks associated with storms, high tides, and predicted sea level rise. Note boat ramp (just left of the helicopter dials), underlain with gravel-filled geogrid fabric.

Site 8 is the Narrows County Park in Pierce Co. It is located on the west side of The Narrows waterway facing south in a medium to high wave energy environment, with a view to the northeast of the Tacoma Narrows Bridge construction. The site is classified as both a Bulkhead Removal and a Low-No Bank Stabilization project. Photo on the left shows the site shortly after construction in 2004. Photo on the right shows the site during our review in June, 2006. Small inset photo shows the monitoring conducted during our review of erosion occurring along anchored LWD. Erosion of the imported beach sand is occurring around the log anchor chains.

Site 9 is private property in Kitsap Co. north of Manzanita. It faces west onto Agate Passage in a medium to high wave energy environment. The site is classified as a High Bank Stabilization project. Photo on the left shows the site shortly after construction in 1998. Photo on the right shows the site during our review in June, 2006. There has been little apparent change in the processes or slope configuration of the photo-proximal portion of the project. However, erosion from the February 4, 2006 storm formed a small gully on the pathway leading to, and a cavity within in the pathway over, the rock bulkhead adjacent to the pier. The line of rocks, intended to attenuate wave energy reaching the base of the bluff might also be serving as a sill of sorts, helping maintain a relatively stable beach profile. The home at this site has a large set back and is not at risk of damage due to shoreline processes any time in the near future.

Site 10 is private property in Kitsap Co. west of Winslow on Bainbridge Island. It faces east onto Eagle Harbor in a low wave energy environment. The site is classified as a Low-No Bank Stabilization project. Photo on the left shows the site shortly after construction in 1996 (1997?). Photo on the right shows the site during our review in June, 2006. This site brings to light the need to evaluate the objectives and impacts of adding sediment that does not match that natural to the site. The added cobble gravel seen here steepens the beach and provides a different substrate habitat than along adjacent shoreline.

Site 11 is the Salisbury Point County Park in Kitsap Co. It faces north onto Hood Canal in a medium to high wave energy environment. The site is classified as both a Bulkhead Removal and Low-No Bank Stabilization project. Photo on the left shows the site shortly after construction in 1995. Photo on the right shows the site during our review in June, 2006. Bulkhead removal at this site had the positive effects of improving beach access, increasing beach width, and recruiting LWD, without incurring much risk to expensive upland infrastructure.

Site 12 consists of 16 adjoining private properties in Skagit Co. All face north onto Samish Bay in a high wave energy environment. The site is classified as a Bulkhead Protection project. Photo on the left shows the site shortly after construction in 1998. Photo on the right shows the site during our review in June, 2006. The sill at the down-drift end of the participating properties (behind the photographer) has preserved the added beach sediment and beach profile, reduced erosion of existing bulkheads, reduced the risks to waterfront homes, and helped to recruit LWD. Home-owners are very happy with the results. The adjacent beach down drift to the east (not shown in these photos) appears to be migrating landward.

Site 13 the Seahurst County Park in Burien, King Co. It faces west onto Puget Sound in a moderate to high wave energy environment. The site is classified as a Bulkhead Removal, High Bank, and Low-No Bank Stabilization project. Photo shows the site during its construction and our review in June, 2006. This site has had a healthy riparian zone, but it was somewhat separated from the beach by the bulkhead. With the bulkhead removal and regrading of the lower slope, it should be more effective at contributing LWD to the beach. The city of Burien is investigating removal of additional seawall and bulkheading to the north of the shoreline reach pictured here.

Site 14 is private property in Kitsap Co. near Seabeck. It faces north onto Hood Canal in a moderate to high wave energy environment. The site is classified as a Bulkhead Removal project. Photo shows the site during our review in June, 2006. This site illustrates the potential for successfully creating a pocket beach within a reach dominated by concrete bulkheads, and the possibility of restoring some beach habitat, even if not necessarily an adjacent riparian zone.

Site 15 is private property on Fox Island in Pierce Co. It faces southwest onto Carr Inlet in a moderate to high wave energy environment. The site is classified as a Low-No Bank Stabilization project. Construction date is uncertain. The photo shows the site during our review in June, 2006. We observed evidence of periodic overtopping of the berm onto the lawn by storm waves. The site is located on a filled backshore at the base of a steep slope prone to landsliding.

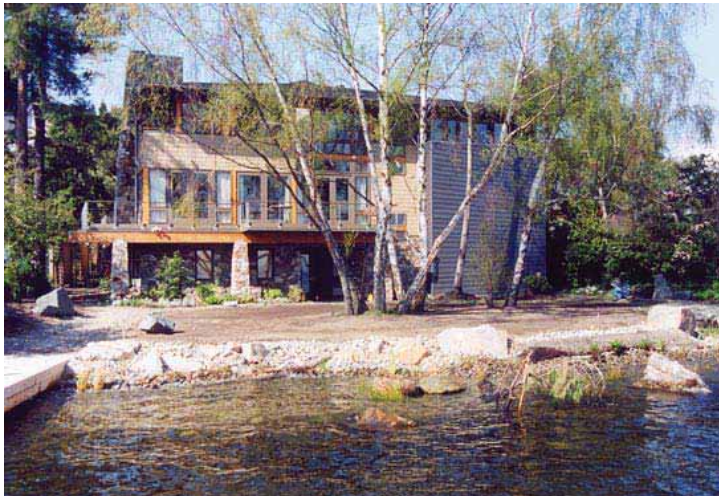
Site 16 is an EPA Superfund Site currently undergoing clean-up. It is located on Bainbridge Island, Kitsap Co., south of Winslow. It faces north onto Eagle Harbor in a relatively low wave energy environment, although it is exposed to ferry boat waves. The site is classified as a Bulkhead Removal project, with the initial removal of the log pile bulkhead occurring in 2001. Photo shows the site during our review in June, 2006. Some erosion of the berm in the foreground has occurred, but otherwise the beach appears to be relatively stable and recreational use of the site is apparently common.

Site 17 is a State-owned Natural Resources Conservation Area in Thurston Co. Being located on a small peninsula in Henderson Inlet, it has shoreline exposure to the north, east, and south in a low to medium wave energy environment. The site is classified as a Bulkhead Removal project. It was completed in 2005. Photo on the left shows the site during deconstruction in 2005. Photo o the right shows the site in March, 2006, shortly after the high-tide storm event of February 4th, 2006. Landslides of this type can be expected on recently-exposed unvegetated slopes, over-steepened following bulkhead removal. Slope retreat is an expected consequence in the short term, but rates of retreat should slow in the long term, under current climatic/sea level conditions.

Appendix C: Three-tab Spreadsheet of Report Tables (see separate Excel file accompanying this document)

Table 1. Site information, field observations, and project evaluation summary.
Table 2. Site classification and corresponding applied mitigation.
Table 3. Evaluation summary by site classification.

2001 - Before



2005 - After

2007 Shoreline Conditions

THE WATERSHED COMPANY

2004 - Before

2007 - After

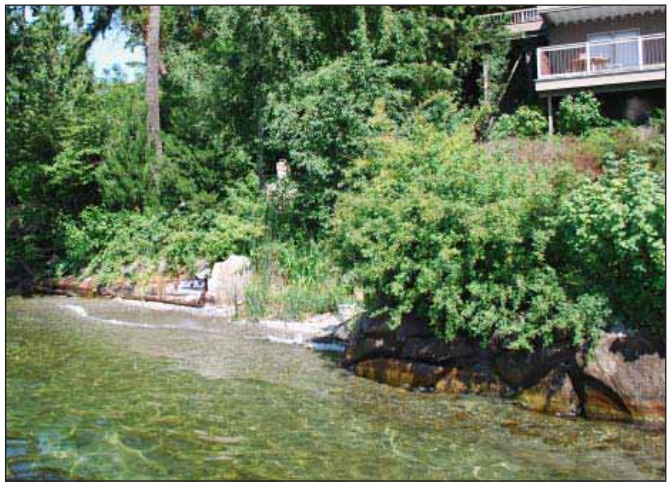
2009 Shoreline Conditions

THE WATERSHED COMPANY

2004 - Before

2006 - After

2006 Shoreline Conditions



2009 Shoreline Conditions

THE WATERSHED COMPANY

Teresa Swan

From: Burcar, Joe (ECY) [jobu461@ECY.WA.GOV]
Sent: Thursday, August 06, 2009 8:40 AM
To: Teresa Swan
Cc: Paul Stewart; CLAUSON Stacy A
Subject: RE: RCW 90.58.270 Nonapplication to certain strucutures, docks, developments placed in navigable waters

Hi Teresa,

In response to your question on RCW 90.58.270, Ecology offers the following interpretation:

This statute should be understood in the context of the enactment of the SMA. In Wilbour v. Gallagher, the court declared that the public had a right of navigation in state waters and that it violated that right to fill in such waters. The court declared in essence that it is prohibited to interfere with the right of navigation by placing structures or fill in the water. The intent of the statute is to say that, notwithstanding Wilbour, structures or fills placed before 1969 are okay – they are in essence grandfathered and do not have to be removed.

Basically, the statute declares pre 1969 structures (placed within navigable waters) to be lawful nonconforming structures. Ecology does not believe that the statute was intended to change the law generally applicable to such structures. I.e., they do not have to be removed, and can be maintained, but they cannot be enlarged or expanded. It is also important to acknowledge the statutes limited reference to *"structures...placed in navigable waters",* which would not include many bulkheads or other structures located upland or outside of navigable waters. Therefore, we would suggest that the local SMP's provisions regarding nonconforming structures would apply to future development proposals regarding such structures, just as they apply to any nonconforming structure built before enactment of the SMA.

Joe Burcar, Shoreline Planner
Department of Ecology - NW Regional Office
Shorelands & Environmental Assistance Program
ph 425.649.7145
fax 425.649.7098

From: Teresa Swan [mailto:TSwan@ci.kirkland.wa.us]
Sent: Friday, July 24, 2009 12:58 PM
To: Burcar, Joe (ECY)
Cc: Paul Stewart; CLAUSON Stacy A
Subject: RCW 90.58.270 Nonapplication to certain strucutures, docks, developments placed in navigable waters

Hi Joe:

Thank you for attending the public hearing last night.

Several months ago we requested Ecology's position on how RCW 90.58.279 applies to the SMA and the Guidelines, and thus to our SMP. We have not heard back on this question. Attached is hard to read but you are probably familiar with the section.

At our public hearing on July 23, 2009, we had public comment on this RCW provision asking if the City's SMP would apply to improvements constructed before Dec 4, 1969.

The Planning Commission then asked that staff respond to this question.

We would appreciate something in writing on how this RCW section should be applied to our SMP that we can pass onto the Planning Commission.

Right now we are scheduled to go to the Planning Commission on August 13, 2009 with our staff memo due to be completed by **end of day Monday August 3, 2009**. Paul is meeting with the chair on Tuesday and the PC meeting date may be moved to August 27, 2009, but right now we need to plan on the deadline date of end of day August 3rd.

Please forward Ecology's response to both Paul and myself since I will out of town the week of August 3rd.

Thank you!

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: e-Copy
Sent: Friday, July 24, 2009 12:27 PM
To: Teresa Swan
Subject: Attached Image

Teresa Swan

From: Paul Stewart
Sent: Friday, August 14, 2009 2:54 PM
To: 'Gaerda@comcast.net'
Cc: KirklandCouncil; Janet Jonson; David Ramsay; Eric Shields; Teresa Swan; 'CLAUSON Stacy A'
Subject: Support of Time Extension for Kirkland SMP Update

Gaerda,
Thank you for your e-mail message. The Planning Commission and Houghton Community Council have held public hearings and are keeping the record open for additional written comment. Once the Planning Commission and Community Council complete the hearing process they will transmit their recommendation to the City Council. Your e-mail comment on the SMP will be forwarded to both bodies and will also be included in the public hearing record on the SMP to be transmitted to the City Council for their consideration.

We met with Kevin Harrang and Brent Carson on Monday to review the detailed comments submitted on behalf of the Kirkland Lakeshore Association. I would say that the meeting was very productive and helpful and we will be suggesting changes to the draft regulations as a result of that meeting. Some items still need further discussion and we intend to do that.

Please do not hesitate to contact me (587-3227) or Teresa Swan (587-3258) if you have any questions or would like to discuss further.

Paul Stewart

From: Gaerda@comcast.net [mailto:Gaerda@comcast.net]
Sent: Thursday, July 23, 2009 8:37 PM
To: KirklandCouncil
Subject: Support of Time Extension for Kirkland SMP Update

To City of Kirkland Council Members:

Although I was unable to attend the council meeting this evening, I am writing to communicate my support of the Kirkland Lakeshore Association request for additional time to discuss and review the impacts on waterfront property owners. I am a waterfront owner and do not fully understand how the 120+ pages of information will affect my property. A short delay will allow waterfront owners an opportunity to better understand the impact of Kirkland's proposed regulations and to then provide meaningful and informed input to the Planning Department.

Sincerely-

Gaerda Zeiler
407 5th Ave West
Kirkland, WA 98033

Thielsen
ARCHITECTS

August 12, 2009

Kirkland Planning Commission
123 5th Avenue
Kirkland, WA 98033

Re: Shoreline Master Program Update

Dear Planning Commission Members,

Thielsen Architects commends the Kirkland Planning Commission and the City planning staff on the depth, breadth and detail of the work they have undertaken in updating the City's Shoreline Master Program. We have been following closely the progress you have been making and we have seen many positive steps coming from this deliberate process. We appreciate the opportunity to make comments to the Planning Commission on this complex and vitally important piece of work. Some of these recommendations were included in my comments at the public hearing and others were omitted due to the time limitation.

We recommend that the Planning Commission direct the planning staff to reconsider the opinion they have received that the lands west of Rose Point Lane are providing significant buffer functions and protection to the Juanita Bay wetland. As the attached photos show the majority of that land is paved parking with limited islands of ornamental landscaping and only a handful of mature trees. Extending the buffer over the road is an unreasonable encumbrance on these properties for which the environmental benefits are virtually nonexistent. The Planning Commission has done a commendable job of balancing ecological protection with the protection of private property owners throughout the SMP update process. This is an area where the impacts on the property owners are totally disproportionate to the ecological protection gained. It needs to be rectified.

We recommend that section b of special regulation 5 in the WDII (section 30.25) use zone chart be removed. This section requires the 15% upper floor area reduction to be taken only on the sides of the building facing the property lines. The reduction should be allowed to be taken on any side of the building. Requiring the placement of the area reduction along the side property lines will create more of the repetitious building forms that we see now in the WDII. Further, it doesn't offer any protection of the shoreline. It actually works against the protection of the shoreline. By not allowing credit for area reductions on the shoreline side it makes those reductions less likely to occur. This means that upper floors will be closer to the shoreline bringing light and noise impacts closer to the shoreline. These impacts would likely be reduced if credit were allowed for floor area reductions anywhere on the upper floor.

We recommend that for lots with less than 3000 sf of buildable area the garage step back in 115.43.3.a be reduced from 8 feet to 5 feet. This would be a minimum 15 feet from front property line in most cases. These properties are so constrained that requiring addition front yard does not seem justified. In reducing the front yard from 20 feet to 10 feet relief is being granted for the increased shoreline setback.

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Kirkland, Washington 98033
www.thielsenarchitects.com
Telephone: 425.828.0333
FAX: 425.828.9376

If the 8 foot requirement is maintained the buildable area is still greatly impinged and the relief previously offered can't be used.

We have seven comments on section 83.550 on non-conformances. Given that virtually every property will become non-conforming with respect to some section of this code, most commonly shoreline setback and shoreline vegetation, it is a vitally important section.

83.550.4.a – Allowing only twelve months from the date of the damage for submittal for building permit is not sufficient time. Twenty-four months is the shortest length of time that should be considered. Getting resolution from the insurance company, interviewing and retaining an architect, developing a design, getting cost estimates and preparing building permit plans is nearly impossible within twelve months.

83.550.5.b.4 – This section should be removed entirely. Legally constructed non-conforming detached accessory structures should not be regulated by work done on other structures on the property. No other non-conformances, building code, plumbing code, electrical code for example, are required to be brought into conformance when work is done on other buildings on a property. Additionally, according to chapter 162 of the zoning code non-conforming buildings not part of a building permit application are allowed to be retained.

83.550.5.b.5.c – We recommend that the area limitation on additions be removed from the code. The 10% increase limit is not required to protect ecological function. If the addition is no closer to the OHWM than the closest point of the existing structure and mitigation planting is done the area limitation does not serve any protective function. Further, if the limit is removed and an applicant chooses to do an addition of more than 10% of the existing structure they trigger the vegetation planting requirement meaning that they not only have to plant mitigation offsetting the area of the addition, but they also have to plant the 10 foot strip across 75% of the lake front. These two plantings will significantly improve the ecological function of the lake while the additional building area will have no adverse impact to the ecological function of the shoreline.

83.550.5.b.5.i – We recommend the elimination the five year window. With the removal of the area limitation recommended above the situation where successive 10% enlargements are used to gain additional area is no longer a concern. Projects which conform to the non-conformance provisions should be allowed at any interval.

83.550.5.b.6 – We recommend that section b of this section be eliminated. If the new structure is located no closer to the OHWM or edge of wetland than original structure it does not have a greater impact. That an original structure may have been L-shaped and a proposed structure has a U-shaped plan has no bearing on the ecological functions being protected. Additionally, we suggest that subsection c be amended to allow a greater footprint in the setback or the wetland buffer, but no closer to the OHWM or wetland edge than the closest point of the original structure. We suggest that native planting of one square foot of planting for every square foot of additional area in the buffer or setback be required as mitigation for this additional area. Allowing the increase in building area within the shoreline setback, provided it is not closer to the OHWM, is no different than if an addition was done as allowed under 83.550.5.b.5.

83.550.5.b.7 – Similar to our recommendation for 83.550.5.b.6 above we suggest that subsection b be eliminated and subsection c be revised to allow an increase in the footprint within the setback with mitigation plantings.

Thank you for your consideration of these recommendations. If any members of the Planning Commission or City staff would like to discuss our comments further please do not hesitate to call us at (425) 828-0333 or email robertc@thielsen.com.

Sincerely,

Robert Connor
Thielsen Architects

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

2011 Rose Point Lane Looking North – Note the preponderance of pavement and the lack of native vegetation west of the lane.

2047 Rose Point Lane Looking North – There are two significant trees in the proposed buffer area west of the lane. All other significant trees west of the lane in this photo are outside of the proposed buffer.

2075 Rose Point Lane Looking South – Note the preponderance of paving and ornamental plantings. The two trees in the center of this photo are the only two significant trees west of Rose Point Lane. They are surrounded by paving, buildings and non-native ornamental plantings.

Teresa Swan

From: Paul Stewart
Sent: Friday, August 14, 2009 3:12 PM
To: Teresa Swan
Subject: FW: City Council Meeting - August 4th 2009 - Shoreline Master Program

---
From: Pascal Stolz[SMTP:PASCAL@ALERTS.COM]
Sent: Friday, August 14, 2009 3:11:57 PM
To: Paul Stewart
Cc: KirklandCouncil; David Ramsay; Janet Jonson; Teresa Swan; Eric Shields; 'CLAUSON Stacy A'
Subject: RE: City Council Meeting - August 4th 2009 - Shoreline Master Program
Auto forwarded by a Rule

Many thanks Paul for the update, much appreciated.

My only question pertains to understanding if either the SMP team, the Planning Commission or the Houghton Community Council will provide answers to the questions raised either back to me or addressed/answered as part of their recommendation to the City Council or is the process just one way: submit questions and comments but there is no obligation on neither bodies to consider the questions meaning that it may require that submitters continue an active dialog with Members of Council.

Sincerely,

Pascal

From: Paul Stewart [mailto:PStewart@ci.kirkland.wa.us]
Sent: Friday, August 14, 2009 3:03 PM
To: pascal@alerts.com
Cc: KirklandCouncil; David Ramsay; Janet Jonson; Teresa Swan; Eric Shields; CLAUSON Stacy A
Subject: City Council Meeting - August 4th 2009 - Shoreline Master Program

Mr. Stolz,
Thank you for your e-mail comments to the City Council. I wanted to take the opportunity to let you know the status of the SMP process. Over the past several months the Planning Commission and Houghton Community Council have held a number of study sessions and public involvement events on the Shoreline Master Program.

Both bodies held have held public hearings and are keeping the record open for additional written comment. Once the Planning Commission and Community Council complete the hearing process they will transmit their recommendation to the City Council. Your e-mail comment on the SMP will be forwarded to both the Commission and Community Council and will also be included in the public hearing record on the SMP to be transmitted to the City Council for their consideration.

If you have any questions or would like to discuss further please contact me at 425-587-3227 or Teresa Swan at 577-3258.

Paul Stewart
Deputy Planning Director

----- Original Message -----
From: Pascal Stolz <pascal@alerts.com>
To: KirklandCouncil; James Lauinger; Joan McBride; Dave Asher; Bob Sternoff; Mary-Alyce Burleigh; Tom Hodgson; Jessica Greenway
Sent: Thu Aug 06 11:35:24 2009
Subject: City Council Meeting - August 4th 2009 - Shoreline Master Program

Dear Council Members,

Thank you for the opportunity to allow Kirkland residents to share with you their views on the many matters the city is dealing with. As requested by Mayor James Lauinger, I am sending you a copy of the 4 items I suggested the City Council reflect upon when evaluating staff's proposal of the City's implementation of the State mandated Shoreline Master Program. Thank you.

1 – If any, are the variance in the staff's recommendation and proposal compared to the state mandate justified and justifiable?

· The current document from the city is over 130 pages long and takes a long time to comprehend. It is unclear and difficult to understand where and why the City's proposal would differ from the State mandate unless we do a side by side comparison with the State document.

· As indicated by Council Member Mary-Alyce Burleigh during the City Council session of August 4th, I understand that our plan needs to meet the approval of the Ecology Department and that should definitely be done and I also understand that as a lakeshore resident I have to adhere to the State mandate. The question is really then how to justify variance from the mandate.

è In fairness to Kirkland residents and to vote on the program it seems logical that a side by side be provided not only to Council members but also to Kirkland residents.

2 – Do we have a clear understanding of exactly the measurable impact staff's recommendation will have on the habitat?

· There has been a number of well documented research (SCIENCE AND GREEN SHORELINES by Mr. Sandaas presented to Council Members on 2/28/2009) that indicate that the body of science and research is not complete, contains suppositions and hypotheses, is sometimes contradictory, and cannot be applied broadly to all shoreline locations on Lake Washington

· In the meantime, there are other real and serious issues that likely further impact the true threats to fish habitat and health of our shoreline:

o Stormwater runoff and non-point pollution (Juanita beach had to be closed this summer for many days. If the beach/bay was deemed unsafe for human it was likely unsafe for fish as well)

o Over the last seven years there has been an increasing growth of milfoil along the shore. It would be interesting to understand if milfoil is more or less of a predatory environment compared to the issue of light which the Shoreline Master program attempts to address.

3 - What are the true economics of the proposal and will a general rule be governing the diversity of lots?

· Mr. Tosti offered in a hearing a staggering statistic which seems to question the real economics of the program. There are 116 SF lots in the RES-L zone in Kirkland of which 113 of the 116 are developed. The total shoreline length is 25% of the total Kirkland shoreline under consideration in the SMP update. There has been (on average) 1.2 major development permits per year in this zone for the last 13 years base on the Final Analysis that Kirkland authored in 2006. If we take these stats and then look over the next 20 years, it means that there will be only 24 developments which then will only impact slightly more than 5% of the shoreline…

è Are the expenses we are incurring for this program justified compared to the likely outcome?

· Taking a closer look at each of these lots you can't but be stunned by their diversity. None are the same. Some are not even on the Shoreline such as the condos stretching over the lake… some have deeper setback such as north of Kiwanis park, some have no setback such as along Lake Street. While guidelines is the only way to have a ground rule it seems that in EVERY case the guidelines will have to be "negotiated" (and why is the burden of proof now placed on residents rather than how it has been to date, on the city?) hence the more rules the more "negotiation" and the more costs on the City…

è Are the expenses we will be incurring to monitor this program justified compared to the likely outcome?

4 - Who is ultimately benefiting under the program and hence who should carry the burden?

· I will offer that the to benefit will be the fish… If the fish benefit then who benefits <<image001.png>> next? I offer that every citizen of Kirkland will benefit, fisherman will benefit, shoreline resident will as citizens of Kirkland but not necessarily as shoreline residents…

è Why should 452 (113 lots with an average of 4 residents per lot) "already higher tax paying residents" since property value along the shoreline is significantly higher than away from the shoreline carry the burden of 45,000+ Kirkland citizens? Are similar rules imposed on "parkline" residents to maintain the health of the parks? If not, then why discriminate "water" vs. "park"? Should we ask for a contribution from revenues derived from License Applications by Washington Department of Fish and Wildlife to offset some costs since we will likely see an increase in activity from fisherman if we have more fish in Kirkland?

Many thanks for your continued attention to the matter.

Sincerely,

Pascal Stolz - CEO & Co-Founder

* pascal@alerts.com <mailto:pascal@alerts.com>

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MUCKLESHOOT INDIAN TRIBE
Fisheries Division

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Phone: (253) 939-3311 • Fax: (253) 931-0752

August 17, 2009

Ms. Teresa Swan
Senior Planner
City of Kirkland
Planning and Community Development
123 Fifth Avenue
Kirkland, WA 98033-6189

RE: City of Kirkland's Shoreline Master Program Update

Ms. Swan:

The Muckleshoot Indian Tribe Fisheries Division has reviewed the following documents as part of the City's Shoreline Master Program Update: Summary of Key Changes; Draft Shoreline Goals and Policies; Draft Shoreline Regulations; Restoration Plan; Cumulative Impact Analysis; Shoreline Use Analysis; and the Shoreline Inventory.

In general, we appreciate the City's commitment and ongoing efforts to protect and restore salmonid habitat. The Shoreline Master Program (SMP) is one tool that City can use for this purpose. There are several plan features that help protect fish habitat and should be retained as the SMP is finalized and adopted by the City Council. However, the Final SMP should be revised to acknowledge the importance of the Lake Washington for the Muckleshoot Tribe's ceremonial, commercial and substance fisheries and treaty reserved fishing rights. Tribal members' fish in the Lake Washington as provided for under federal law, including areas within the City of Kirkland. The City needs to ensure that the SMP and its implementation do not either degrade treaty protected fisheries resources or impact Tribal members' ability to access fisheries resources. Our attached comments note several areas within the relevant draft SMP documents that have a potential to have one or both impacts, and include recommendations to address the problem areas.

We appreciate the opportunity to review and comment on the SMP. We are available to meet to discuss these comments and answer any questions that the City may have. Please call me at 253-876-3116 to set up this meeting.

Sincerely,

Karen Walter
Watersheds and Land Use Team Leader

Cc: Joe Burcar, WDOE, NW Region

The following comments are linked to specific SMP documents that we reviewed. We have identified these comments by page number and specific sections where possible. If we did not comment on a particular document, then we had no comments to offer.

I. Draft Shoreline Goals and Policies

1. On page 10, Policy SMP-2.6 (d), this policy suggests that development in the aquatic environment be compatible with the adjoining upland development when it should be the other way around if the this policy is to protect, restore and manage unique characteristics and resources of area waterward of the Ordinary High Water Mark.

2. On pages 11-12, Policy SMP-2.6, scientific devices should be allowed and added to the list. These uses are allowed in Title 83.160.

3. On pages 12-13, Policy SMP-3.7, lighting should avoid spilling over onto and illuminating the water and creating hunting advantages for juvenile salmon predators.

4. On page 14, Policy SMP-6.1, accessory uses should avoid the regulated buffer areas of shorelines, not just the Ordinary High Water Mark.

5. On page 19, Policy SMP-10.5, it should be noted that dredging can eliminate shallow water habitat preferred by juvenile salmonids. While dredging Juanita Beach Park may improve some water quality conditions, dredging will likely result in a loss of shallow water habitat for juvenile salmonids if not mitigated sufficiently. The control of upland erosion and sedimentation should be implemented prior to dredging in order to avoid or decrease the need for dredging.

6. On page 23, Policy SMP-11.3, this policy should be revised such that pier lighting is required to avoid spilling light onto the water surface and creating hunting advantages for juvenile salmon predators.

7. On page 30, Policy SMP-15.4, the effects of pesticides on salmon include more than just interference with smell and homing to natal streams as noted. Other effects include impaired reproduction, skeletal deformities, decreased swimming ability, and toxicity to salmon food sources. Some sources of information include:
http://extension.wsu.edu/ce2002/secondary/pdfs/Facts%20About%20Pesticides,%20Salmon,%20and%20the%20Endangered%20Species%20Act.htm
http://www.fws.gov/westwafwo/fact_sheets/EnviroContamFinal.pdf
http://wa.water.usgs.gov/pubs/fs/fs.097-99/

8. On page 30, Policy SMP-16.2, trees that are at least 4 inches in diameter and within 200 feet of the shoreline of Lake Washington or streams draining into Lake Washington and are removed, should be placed back into the affected waterbodies or at least made available for City restoration projects. Otherwise, there will be an unmitigated temporal loss of future wood recruitment necessary to create and maintain salmon habitat.

9. On page 43, Policy SMP-25.2, the text should recognize that utility corridors may be revegetated; however, there are usually planting restrictions in these corridors due to concerns with tree roots. As a result, the utility corridor may not result in a fully functional buffer where they occur within wetland, stream, and lake riparian areas.

II. Draft Shoreline Regulations

A. Chapter141- Shoreline Administration

10. Please include a section in this Chapter that identifies how agencies will be notified about proposed shoreline permits. The Muckleshoot Indian Tribe Fisheries Division would like to receive copies of all shoreline applications for exemptions; substantial development permits; conditional use permits; and shoreline variances as all of these permit types may adversely affect the Tribe's treaty protected fisheries resources.

B. Chapter 83- Shoreline Management

11. On page 19, 83.160, Uses Table, please note that Muckleshoot Tribal fishing activities are protected by federal treaties and regulated by federal court decisions, i.e. U.S. *v* Washington. Neither the Department of Ecology nor the City of Kirkland has authority to regulate treaty fishing by the Muckleshoot Indian Tribe nor can they require shoreline permits that would result with the interference of the Tribe's ability to exercise its treaty fishing rights. See U.S. *v*. Washington. As a result, the requirement for Native American fishers to obtain a shoreline substantial development permit for fishing within all of Kirkland's shoreline designations should be removed from this table. We would like written confirmation that this has been done.

Furthermore, it should also be noted that many activities allowed under the Shoreline Management Act and the associated Shoreline Master Programs have the potential to interfere with tribal members accessing their treaty protected fisheries resources, which is not allowed under U.S. *v* Hall. If the City has any questions about these comments, we would be happy to meet and discuss these comments further.

12. On page 28, 83.160, Uses Table, dredging and filling within the Natural Environment designation should only be allowed with fisheries enhancement and restoration projects.

13. On page 30-31, 83.180.3, Shoreline Development Standards, this section will allow structures to be located as close as 15 feet within Ordinary High Water Mark (OHWM) in some areas, and 25 or 30 feet within the OHWM depending on the shoreline environment. The SMP regulations also do not require the remaining area to be fully revegetated. It is doubtful that this approach will result in a restored shoreline along Lake Washington and the associated wetlands designated as shoreline in the draft SMP. There is no technical basis for these setback numbers in any of the documents we reviewed. The analysis in the cumulative impacts suggests that the setback numbers in this table will result in a reduction of setback areas within the Shoreline Residential L and M/H designations, and a slight increase in the UM designation. The City should provide the technical basis to demonstrate that the 25 or 30 foot setback in combination with a 5' to 10' vegetated buffer will allow the protection and full restoration of riparian

functions necessary to support salmon, including juvenile chinook salmon, in Lake Washington.

14. On pages 32, 37, 40, 83.180.3, Shoreline Development Standards, please clarify why a structure 25' to 30' in height would be allowed within the 200 foot regulated shoreline zone of the Natural Environment Designation. No non-water dependent structures should be allowed in the Natural Environment Designation regardless of height. Water Dependent structures should be less than 25 feet in height and should be setback to allow natural vegetation to grow to provide a full suite of functions or be planted where necessary.

15. On page 41, 83.190.2.d.(2)(a), Lot Size or Density, Shoreline Setback, Lot Coverage and Height, walkways for private access within the shoreline setback should be the minimum necessary to accommodate the use and less than 15 feet. Other cities have recommended a 6 to 8' maximum width for walkways in their SMPs.

16. Page 42, 83.190.2.d.(9), Lot Size or Density, Shoreline Setback, Lot Coverage and Height, decks and patios should be outside of shoreline setbacks which could be as narrow as 15 feet from the Ordinary High Water Mark in some designations.

17. Page 42, 83.190.2.d.(10), Lot Size or Density, Shoreline Setback, Lot Coverage and Height, balconies should be outside of shoreline setbacks which could be as narrow as 15 feet from the Ordinary High Water Mark in some designations.

18. Page 42, 83.190.2.d.(11), Lot Size or Density, Shoreline Setback, Lot Coverage and Height, outdoor seating should be located outside of shoreline setbacks which could be as narrow as 15 feet from the Ordinary High Water Mark in some designations.

19. Page 42, 83.190.2.d.(12), Lot Size or Density, Shoreline Setback, Lot Coverage and Height, this regulation will allow retaining walls (non-water dependent uses) to be within setback areas and interfere with shoreline restoration opportunities. They should be located outside of the setback area.

20. Page 48, 83.220.7.c(2), change the word "local" to "affected" Indian Tribes.

21. Page 50, 83.230.5.c, Street expansions affecting streams and waterways should be required to follow WDFW's Fish Passage Manual and fully mitigated for project impacts due to the roadway crossing. Many of these impacts are listed in the WDFW Manual.

22. Page 55, 83.270.4.c(3), Mitigation, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that 75% of the nearshore riparian area be planted with native vegetation an average of 10 feet deep from the Ordinary High Water Mark or a minimum of 5 feet as mitigation for new piers and docks. Please provide the scientific basis to support this standard and describe whether it would provide sufficient habitat mitigation from an ecological perspective. More vegetation will likely be needed to fully restore the riparian functions necessary to support salmon, including juvenile chinook salmon, in Lake Washington.

23. Page 55, 83.270.4.c(4)(a), Mitigation, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that 3 trees per 100 linear feet of shoreline is sufficient mitigation for new piers and docks. Please provide the scientific analysis to support this standard. Three trees per 100 linear feet of shoreline is likely insufficient to restore riparian functions necessary to support juvenile salmon in Lake Washington and more trees should be required. There should also be a standard overhanging tree species have preference over non-overhanging species.

24. Page 57, 83.270.5.c, Mitigation, the replacement of existing piers of docks should be required to provide native plantings along the shoreline, emergent vegetation where appropriate, and enhancing shallow water habitat along with the other proposed mitigation measures in c(1) and c(2).

25. Page 57, 83.270.6.b, Mitigation, additions to existing piers or docks for detached dwelling units should be required to provide native plantings along the shoreline, emergent vegetation where appropriate, and enhancing shallow water habitat along with the other proposed mitigation measures in b(1) and b(2).

26. Page 63, 83.280.7.c, Mitigation, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that 75% of the nearshore riparian area be planted with native vegetation an average of 10 feet deep from the Ordinary High Water Mark or a minimum of 5 feet as mitigation for new piers and docks for detached, attached or stacked dwelling units. Please provide the scientific basis to support this standard and describe whether it would provide sufficient habitat mitigation from an ecological perspective. More vegetation will likely be needed to fully restore the riparian functions necessary to support salmon, including juvenile chinook salmon, in Lake Washington.

27. Page 63, 83.280.7.d(1), Mitigation, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that 3 trees per 100 linear feet of shoreline is sufficient mitigation for new piers and docks for detached, attached, or stacked dwelling units. Please provide the scientific analysis to support this standard. Three trees per 100 linear feet of shoreline is likely insufficient to restore riparian functions necessary to support juvenile salmon in Lake Washington and more trees should be required. There should also be a standard overhanging tree species have preference over non-overhanging species.

28. Page 72, 83.300.4.b(4) Major Repair of Structural Shoreline Stabilization, major repairs of structural shoreline stabilization using hard and soft measures should be required to mitigate for these structures by adding salmon friendly gravel mixes (1/8" to 2" size material) in front of the structure to create gently sloping areas used for juvenile salmon, particularly chinook. Flatter slopes of 7:1 are preferred.

29. Page 75, 83.300.9.e(2)(b), General Design Standards, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that the nearshore riparian area be planted with native vegetation an average of 10 feet deep from the Ordinary High Water Mark or a minimum of 5 feet as mitigation for shoreline stabilization projects. Please provide the scientific basis to

support this standard and describe whether it would provide sufficient habitat mitigation from an ecological perspective. More vegetation will likely be needed to fully restore the riparian functions necessary to support salmon, including juvenile chinook salmon, in Lake Washington.

30. Page 75, 83.300.9.e(2)(c), General Design Standards, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that 3 trees per 100 linear feet of shoreline is sufficient mitigation for shoreline stabilization projects. Please provide the scientific analysis to support this standard. Three trees per 100 linear feet of shoreline is likely insufficient to restore riparian functions necessary to support juvenile salmon in Lake Washington and more trees should be required. There should also be a standard overhanging tree species have preference over non-overhanging species.

31. Pages 76-77, 83.310, Breakwaters, Jetties, Groins, there should be mitigation required for impacts to fish habitat and littoral processes for breakwaters, jetties and groins.

32. Page 81, 83.370.2, change the word "local" to "affected" Indian Tribes.

33. Page 85, 83.400.1.a (1), this regulation could allow property owners to remove all significant trees from the regulated shoreline zone over time. There should be a maximum limit on the amount of significant trees that can be removed from the regulated shoreline zone.

34. Page 85, 83.400.1.a(2), significant trees that are removed from the shoreline setback should be placed back into the affected waterbody where feasible or made available to the City for restoration purposes at a minimum.

35. Page 83, 83.400.3.a.(2)(a), Planting Requirements, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that the nearshore riparian area be planted with native vegetation an average of 10 feet deep from the Ordinary High Water Mark or a minimum of 5 feet as mitigation for tree management and vegetation in the shoreline setback. Please provide the scientific basis to support this standard and describe whether it would provide sufficient habitat mitigation from an ecological perspective. More vegetation will likely be needed to fully restore the riparian functions necessary to support salmon, including juvenile chinook salmon, in Lake Washington.

36. Page 83, 83.400.3.a.(2)(d), Planting Requirements, while an improvement over existing conditions, there is no scientific analysis or basis provided to support this regulation that 3 trees per 100 linear feet of shoreline is sufficient mitigation for tree management and vegetation in the shoreline setback. Please provide the scientific analysis to support this standard. Three trees per 100 linear feet of shoreline is likely insufficient to restore riparian functions necessary to support juvenile salmon in Lake Washington and more trees should be required. There should also be a standard overhanging tree species have preference over non-overhanging species.

Teresa Swan

From: Daved [Daved@waterfrontconstruction.com]
Sent: Monday, August 17, 2009 11:39 AM
To: 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; george.steirer@mercergov.org; Teresa Swan; CLAUSON Stacy A; mhgreen@comcast.net; Frederick Stouder
Cc: becky@marinellc.com; eride@msn.com; Mark Nelson; donovan@donovantracy.com; vanskamok@verizon.net; kathymrichardson@yahoo.com; greg@shoreline-permitting.com; rlstyle@aol.com; dfiene@cityoflfp.com; Mike Collins; kharrang@hotmail.com; Kirkland Lakeshore Association; Bainbridge Shoreline Homeowners; Robert Grumbach; sammamishhomeowners
Subject: SCIENCE, BULKHEADS AND THE SMP UPDATES
Attachments: Kirkland SMP Regulation Comment Letter.doc

Dear SMP Points of Contact and Interested Parties,

I ran across an interesting article from the Bainbridge Shoreline Homeowners (http://bainbridgeshorelinehomeowners.wordpress.com/2009/08/14/does-science-justify-bulkhead-rules/) website discussing science and bulkheads. This is a very active, high-spirited and informed group of property owners who are concerned with balancing responsible regulating and stewardship of our state's shorelines. Regarding the article below, my supervisor attended a similar one day government sponsored workshop in Bremerton and said more information came out to question rather than confirm the impacts of bulkheads. I have removed all names (with the exception of the DOE geologist) but the information is taken from a public website that anyone can access.

Despite all the unanswered questions state agencies and other state funded groups are moving forward with a plan to essentially outlaw new bulkheads and make it difficult to repair or replace existing ones in both fresh and salt water (even though the dynamics are totally different) unless it can be proven that a primary structure is threatened within 3 years. Protecting the usefulness or value of property itself does not appear to be a concern or consideration of the state and this same position is being embraced by local governments despite property owner objections. Some of the reports come right out and say these drastic actions may not even make a difference.

I have also attached a letter from Dick Sandaas to the City of Kirkland. Dick has lived on the Kirkland waterfront for decades, weathered many storms and made many first hand observation. Dick has taken the time and effort to conduct research on the science behind the push to remove bulkheads along Lake Washington and Lake Sammamish and has drawn some practical conclusions and questions. This information should also generate interest and doubt among planners and others working on local SMP updates if they are investing time into researching these important matters. Although the letter is directed to the City of Kirkland with a few changes it could apply to any community on the lakes.

I urge every person involved in the SMP Update process to share this information with as many people as possible and if you are a planner currently working on your City or County SMP Update or soon to be starting the process, I encourage you to share this information with your Planning Commission, City Council, Planning Staff and citizens. Once we know information exists we are responsible to act accordingly, whether it aligns with our way of thinking or not.

A thorough, effective, responsible and honest SMP Update process should evaluate and investigate all information and not take things from anyone (private or government sources) for granted. Actions should be proportionate with proven impacts and not based on inconclusive information or guesswork.

Thank you,

David Douglas
Permit Coordinator
Waterfront Construction, Inc.

BAINBRIDGE SHORELINE HOMEWONERS NEWSLETTER ARTICLE

Does science justify bulkhead rules?

Published August 14, 2009 Best Available Science , Regional Planning 9 Comments

from an email to Puget Sound Shoreline Planners by Hugh Shipman, Coastal Geologist, WA Department of Ecology (**emphasis added**)

Shoreline armoring (seawalls, bulkheads, riprap) is one of the more challenging issues we all deal with on Puget Sound. In May, a group of us (Ecology, WDFW, UW, Corps, USGS) organized a three-day workshop intended to pull together the **limited amount of science** that has been done the effects of
armoring. Our focus was the applicability to Puget Sound, but we tapped experts from around the country.

The workshop confirmed 1) **the challenges of managing armoring** – not just here, but everywhere, 2) the **limited scientific research** that has been done on the impacts of armoring on either geologic or ecologic processes, and 3) the **difficulty of applying the science that has been done elsewhere** to Puget Sound given the unique aspects of our system.

The event was a big step forward, and will likely be significant at the national level as well as within our own region, but **it also showed just how difficult addressing this issue will be at both the scientific and political levels**.

A full description of the workshop and the presentation materials can be found on the U.S. Geological Survey website. A Proceedings document will be published by the USGS by early 2010. When they are, we will publish a link on this website.

Observations
One wonders why the workshop was focused on **managing shoreline armoring** given the **limited scientific research** that has been done on the impacts of armoring on either geologic or ecologic processes, and the **difficulty of applying the science that has been done elsewhere** to Puget Sound given the unique aspects of our system.

One can wonder, but that's exactly what local planners and the state Dept. of Ecology are doing throughout the Puget Sound region. They are focused on eliminating bulkheads that protect people's homes without scientifically valid proof of harm. Apparently "no net loss" doesn't apply to our shoreline homes.

When we talk to people who've been active in the *struggle to save Puget Sound* for many years, they tell us that they don't want to get involved with *dueling scientists* because they believe that *the science is settled*. Please go to the U.S. Geological Survey website referenced above and read the presentation materials. Read the words of Hugh Shipman, Coastal Geologist with the WA Department of Ecology, quoted above. Then, decide for yourself.

9 Responses to "Does science justify bulkhead rules?"

Feed for this Entry

August 14, 2009 at 8:47 pm
We are doomed to the fate of California for having turned over government power to the environmentalists. Now obligatory taxes are being used to create excuses and find science to justify taking property away from the highest paying segment of private property taxpayers. It's for a worthwhile cause, though — eelgrass, smelt and kelp beds!
Karl Duff

August 15, 2009 at 7:53 am
Are you going to send this to candidates? I think it's a good idea. I'm interested to know what shoreline homeowners on this blog thought about candidates' response to the question "What is the #1 change you would make to the update of the Shoreline Management Plan?" at the forum on Monday.

August 15, 2009 at 11:38 am
Shall we take down the bulkheads that protect Bremerton's Navy Yard? Or Everett's navy facility? How about the bulkheads at the Seattle waterfront?
Or the ferry terminal. or all the government bulkheaded bases and installations.

August 15, 2009 at 12:38 pm
I linked to the USGS website to read about this workshop. I see that 40 some people from a bunch of government agencies spent 4 days in deluxe accommodations at the Alderbrook Inn. I must assume this was on the taxpayer's

dime. To break the monotony, they spent one afternoon on a 130-person party boat tooling around Bainbridge. Amazing!

August 15, 2009 at 12:53 pm
I see that Peter Best was one of the speakers. How much did we pay to send this guy on this deluxe vacation?

August 15, 2009 at 1:47 pm
In WRIA9, the bible for the fish restoration on Puget Sound states that there is no scientific evidence that docks interfere with the migration of fish in Puget Sound. The same for bulkheads.

August 15, 2009 at 2:33 pm
People for Puget Sound says that, "Puget Sound's shorelines are in peril. More than one-third of Puget Sound shoreline habitat has been destroyed due to bulkheads, piers, docks, and other structures." They don't quote any sources for their claim, but they wouldn't lie would they?

August 15, 2009 at 10:44 pm
Instead of worrying about shoreline armoring I'd like to see our planners spend their time and effort on their favorite subject, which is global warming. After all, if Al Gore's predictions are correct, most of our bulkheads will be submerged in a few years, and all this debate will be for naught.

On the other hand, our planners might consider attacking the problem of invasive Spartina in Puget Sound. Spartina has been growing in the Sound since the 1960s, and has spread to Kitsap County; it destroys habitats necessary for shellfish, shorebirds and salmon; crowds out native vegetation and encourages flooding of uplands.

The most abundant of the four species is Spartina anglica; however, each of the four species poses a potential threat to our shorelines (it was introduced from Europe for dike stabilization and cattle feed). Spartina spreads rapidly and outcompetes native vegetation; it has two modes of reproduction, and can tolerate variable salinity, temperature and oxygen levels, and can infest multiple habitat types.
It grows in mud flats, salt marshes, sand or cobble beaches, and ideally in protected soft-bottom with some freshwater influence (sounds like Port Madison, Eagle Harbor, Manzanita and Fletcher Bays, doesn't it?).

This project could keep those pesky planners busy with something worthwhile, while we calculate how high Al Gore's sea level will reach on our properties.

August 16, 2009 at 8:25 pm
It comes as no surprise that ignored by the planners is the one scientifically conducted study in Puget Sound comparing bulkhead effects on side by side beaches (bulkheaded vs. non-bulkheaded) was completed in Thurston County. It emphatically showed bulkheads were in no way detrimental.

Teresa Swan

From: Mohaghegh, Michael [michael.mohaghegh@boeing.com]
Sent: Tuesday, August 18, 2009 7:49 AM
To: Teresa Swan
Subject: Kirkland Shorelines

Teresa,

Thanks for taking the time to talk with me again and explain the coming changes. As I stated, I have two properties on Yarrow Bay, one vacant lot and one with single dwelling (in WDIII). I have three comments for you to consider:

Waterfront Increased Setback

The properties in my area are just over a 100' deep and the required 25' set back would significantly further reduce the available building space. I would recommend that you reduce the front yard set back to 20'
(to compensate for this new change) for single dwellings which is the preferred usage for this area. The 20 feet front yard set back is the standard requirement in the city and other waterfront areas. The 30' set back is very high for these lots with a depth of about 100'.

North Property Setback

I also would strongly support the planning department's recommendation of removing the existing north property set back requirement and replacing it with a 5 feet set back. The property north of me has a 5'
setback which means the view corridor must be on the south side. With 15' south property setback and a large north setback there is no room left for construction on these 50' wide lots. People typically don't want to have windows on the south side for privacy. The view and light is on the backside of these properties. The existing requirement is an extremely unreasonable requirement for these small narrow lots.

View Corridor

I would recommend a 20% view corridor for single dwellings and 30% for multi family structures. This would further promote development of single family residences.

I think that these changes would promote new single family buildings on the waterfront. Without them people like myself would keep the non conforming existing buildings.

Thanks for inviting me to your public meeting on August 24th and I look forward to making my comments there.

Sincerely,

Mike Mohaghegh Ph.D., S.E.
Technical Fellow
Advanced Structures and Materials
Payloads and Structures Engineering
Boeing Commercial Airplanes
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