



MEMORANDUM

To: Planning Commission

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

Date: September 15, 2010

Subject: **Amendments to the Kirkland's Shoreline Master Program (SMP) and Zoning Code for the Annexation Area, File No. ZON06-00017**

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I. RECOMMENDATION

Staff recommends that the Planning Commission review the recommendations in this staff memo and provide staff with direction.

II. FOLLOW-UP FROM AUGUST 26, 2010 MEETING

The Planning Commission held a study session on August 26, 2010. At the meeting, the Planning Commission reviewed SMP components that need to be amended and those that do not need to be amended along with miscellaneous amendments to the Zoning Code. The Planning Commission wanted additional information and discussion on certain non-conformances, boathouses, extra piers and upland boat storage structures.

A. Summary of How Non-Conformances are Currently Regulated

The Planning Commission asked that staff provide a table outlining how the current shoreline provisions in Chapter 83 regulate non-conformances for certain situations. Below is a summary of the types of non-conformances or occurrences that the Planning Commission asked about. In addition, the staff recommendation is provided below along with King County's existing regulations prior to their SMP update which is still under review:

Non-Conformances and What Activities Require Conformance/Removal

Non-conformances	Existing SMP	Proposed Amendments (some revisions)	King County
Improvement damaged by fire, flood, earthquake, storm, etc.	May be replaced if building permit is commenced in 24 months from date of damage (Section 83.550).	No change to regulations	---
Boathouses on the lake	<p>-Remove structures within 30' of OHWM for replacement or major repair of pier (Section 83.270). <i>(Consistent with Army Corps' standards)</i></p> <p>-Remove structures at 1:1 ratio within 30' of OHWM for additions to pier (Section 83.270).</p> <p>-Change in roof or exterior wall must be brought into conformance for any structural alteration (Section 83.550.5.b.2).</p> <p>-Except may change or add windows and/or doors (Section 83.550.5.b). <i>(When written, this section did not contemplate boathouses but only upland structures)</i></p>	<p>-Remove structure beyond 30' of OHWM for addition to pier</p> <p><i>This is a revised recommendation. Prior preliminary recommendation included replacement and major repair of pier.</i></p> <p>-Not allow change or add windows and/or doors</p> <p><i>New recommendation. These are major non-conformances and should not be allowed to be upgraded, but only do maintenance and repair.</i></p>	Current SMP: Boathouses not allowed on lake
Boat storage structures in shoreline setback	-Remove when primary structure is being altered at the cost of which exceeds 50% of the replacement cost of the structure (Section 83.550.5.b.4)	<p>-Remove with addition to pier</p> <p><i>Revised recommendation. Prior preliminary recommendation included replacement and major repair of pier.</i></p>	Current SMP: Boat storage structures not allowed in shoreline setback
Extra piers	-Remove any part of structure within 30' of OHWM for replacement or major repair of	- Remove beyond 30' of OHWM with addition to pier	Current SMP: Strict limitation on new piers.

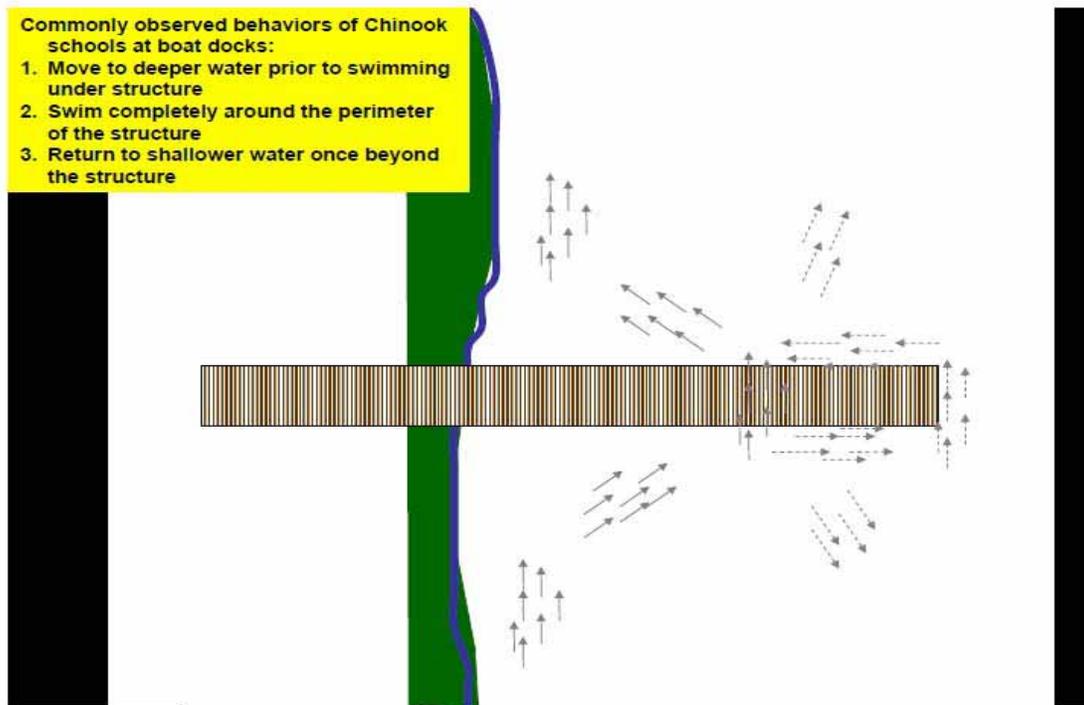
	pier (Section 83.270) -Remove at 1:1 ratio within 30' of OHWM for additions to pier (Section 83.270)	<i>Revised recommendation. Prior preliminary recommendation included replacement and major repair of pier.</i>	Must show need & that shared pier not an option
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B. Boathouses and Similar Improvements located 30' Beyond the OHWM (see Attachments 1 and 2)

The new shoreline regulations do not permit boathouses or similar structures. The structures must be removed if within 30' of the ordinary high water mark (OHWM) when an associated pier is replaced, enlarged or has major repair. Unlike the City, the annexation area appears to have several boathouses further out than 30' from the OHWM.

Overwater structures shade the lake forcing juvenile fish to go around the structures and out into deeper waters to avoid predatory fish that hide under the shaded structures. Yet deeper waters also contain predatory fish. The goal of the SMP is to first reduce overwater coverage within the first 30' of the OHWM so that juvenile fish will stay close to shore and then move further out where possible (see diagram below).

Commonly Observed Behaviors of Chinook schools at boat docks



Brown structure is the pier and green area is the near shore native plantings

At the August 26, 2010 meeting, staff's preliminary recommendation was to require removal of boathouses beyond 30' of the OHWM with replacement, major repair and enlargement of piers. After further discussions with Amy Summe of The Watershed Company, staff recommends that boathouses and similar structures beyond 30' of the OHWM be removed only with additions to piers (see Attachment 1). Amy is concerned that requiring boathouses to be removed with major repair and replacement would deter property owners from making any changes to the piers. Under the current regulations, the first 30' of a pier must have open grating and the pier deck would need to be narrowed to 4' in width with replacement and major repair which is most important to improving fish habitat.

If a property wants to **add more overwater coverage with an addition to a pier, the portion of the boathouse structure beyond 30' of the OHWM should be removed to offset the increase in overwater coverage.** These boathouse structures can be replaced with boat canopies that meet the standards in Section 83.270.

In addition to requiring that boathouses be removed for additions to pier, the text in the non-conformance Section 83.550.5.b.2 for allowing **new doors and windows installed on walls that are non-conforming for setbacks should be revised to exclude structures landward of the ordinary high water mark.** The prior code would not have allowed these changes to a home in the shoreline setback. This new provision was added so that someone could add a window and/or door to a home in the shoreline setback. At the time of discussion on this regulation, it was not contemplated to include boathouses waterward of the OHWM. As discussed above, boathouses are major non-conformances and changes to these structures should be limited to maintenance and repair and not upgrades (see Attachment 2).

Staff recommendations:

- **Boathouses and similar structures beyond 30' of the OHWM should be removed with additions to piers.**
- **Structures waterward of the OHWM should be excluded from Section 83.550.5.b.2 for adding windows and doors to walls that are non-conforming.**

C. Extra Pier located 30' Beyond the OHWM (see Attachment 1)

A few of the properties in the annexation area have additional piers. Current regulations would require removal of any portion of that extra pier within 30' of the OHWM for replacement, major repair or an addition to the main pier. For the same reasons discussed above for boathouses, portion of these extra piers beyond 30' of the OHWM should be removed with any addition to the main pier. As noted above, staff has changed its preliminary recommendation to removal of these extra piers for only pier additions so that replacement and major repair of piers are not discouraged.

Staff recommendation: The portions of extra piers beyond 30' of the OHWM should be removed with additions to the main piers.

D. Boat Storage Structures located in the Shoreline Setback (see Attachments 1 and 2)

Several properties appear to have boat storage structures in the shoreline setback. The current regulations would require removal of these structures if the associated home is rebuilt or has a major addition. However, these boat storage structures relate to and support the activities associated with piers. These structures use important near shore space where native vegetation could be planted to provide wildlife habitat that improves the ecology of the lake. If major additions to homes require removal of these structures, then the same should be the case for additions to piers. Sections 83.270 and 83.550 should be amended to reflect the new standard.

Staff recommendation: Boat storage structures in the shoreline setback should be removed with additions to piers.

III. SHORELINE SETBACK STANDARDS FOR THE ANNEXATION AREA

A. What DOE Considers in Approval of the Shoreline Setback Standard

In the staff memo for the August 26, 2010 meeting, staff provided background information on how the City derived its shoreline setback standards. The City's goal was to minimize the number of **non-conformances** resulting from the new shoreline setback standard while still meeting the State's provision of **No Net Loss of ecological function** both on a site by site basis and overall along the Kirkland shoreline over the next 20 years in order to receive DOE approval. In determining if **No Net Loss is met**, the following factors are calculated, analyzed in the Cumulative Impact Analysis and reviewed by DOE:

- Amount of open space is lost or gained: We must calculate the change in shoreline open space as homes can move forward, new homes are built, or homes are required to move away from the lake. If more open space is lost, then the setback option must be adjusted to reduce the amount of open space lost.
- Amount of new native plantings: We must calculate this with new development or redevelopment based on the SMP's standard of 10' deep along 75% of the linear frontage of property. The total area of new planting will help offset impacts from new homes and piers, and existing homes being relocated closer to the lake.
- Number of vacant lots or lots likely to redeveloped: We must calculate the number of vacant lots, and the number of lots that are likely to redevelop through the subdivision process or based on the age of the home and land value. The more lots likely to develop or redevelop mean more impacts to the lake. For the redevelopable lots, we look at how many existing homes could be moved towards the lake or new homes added along the shoreline.

In addition to No Net Loss, the new shoreline setback regulations for the SMP update had to

balance the following issues which are the same issues applicable to the annexation area:

- Receiving approval from DOE on the setback standard: DOE gave direction that generally, at least a **25' setback is needed** to provide adequate area for mitigating impacts to water quality and fish and wildlife and for native vegetation. In some unique areas, DOE may approve smaller setbacks.
- Considering Existing Conditions: The approximate existing primary structure setback and the average parcel depth and width of every lot were measured. We found a range in all factors and by area of the city. Due to the considerable range in lot depth, an **average parcel depth percentage** was used as part of the setback standard. A **minimum setback** was the other part of the setback standard.
- Number of Non-conformances vs. Meeting No Net Loss of Ecological Function: Many homes are located far back from the shoreline and will be able to move forward closer to the shoreline with the new setback standards while many homes are located very close to the shoreline. As homes move forward, impacts will occur and the **No Net Loss** standard would not be met. The challenge was finding a setback standard that allows some homes to move towards the lake and require some homes to move back while trying to minimize the number of homes that become **non-conforming** by being in the required setback area. Staff referred to this as finding the "sweet spot."
- Providing a Setback Reduction Option: The shoreline setback regulations include an option to **reduce the shoreline setback** when done in conjunction with shoreline mitigation. A list of specific options is provided and the amount of shoreline setback reduction allowed (Section 83.390). The greatest reduction is provided when a bulkhead is removed and the least reduction is when additional lawn area is removed for native plantings.

For the SMP update, the **Cumulative Impact Analysis (CIA)** considered the existing and proposed setbacks, including the setback reduction option, the number of lots likely to redevelop based on age and values of the home, the ability to subdivide, the number of vacant lots and the offset of requiring native vegetation, new lighting standards, porous pavement and other mitigation, and the City's Restoration Plan to see if No Net Loss would be met. The analysis did determine that No Net Loss would be met over the next 20 years given the setback standards done in conjunction with new vegetation, lighting and other standards.

As part of DOE's approval process, they reviewed the CIA to determine if the City would potentially meet No Net Loss over the next 20 years. The results of the CIA are a key factor in obtaining DOE approval of the City's SMP.

B. Recommended Setback Standards for the Annexation Area

As discussed at the August 26, 2010 meeting, staff initially divided the annexation shoreline area into 4 study areas based on general lot depths and setback characteristics. The RS

study area #1 is south of O.O. Denny Park while RS study areas #2-#4 are north of the park (see Attachment 3).

The annexation area has a much wider range of setbacks and lot depths than Kirkland which makes deriving a shoreline setback that meets the No Net Loss provision while minimizes the number of new nonconformance very challenging. Here is a description of some of those challenges:

1. **47 of the 217 lots are nonconforming** under the City's prior shoreline standard of 15% of the average parcel depth with a minimum of 15'. These are significant non-conformances because the prior setback standard is substantially less than the new shoreline setback standard needed to meet the No Net Loss provision and Ecology's position on an adequate urban setback. The homes on these lots are very close to the shoreline.
2. Many of the properties have **very deep lots but contain homes close to the lake**. The average parcel depth standard (i.e. setback based on 30% of the average parcel depth) for deep lots pushes the required setback far back on the lot which makes the existing home non-conforming.
3. Many of the properties have **very deep lots with homes far back from the lake**. Thus, if a setback standard is used that reduces the number of non-conformances for the circumstances describe in no. 2 above, then these homes can be relocated closer to the lake resulting in open space loss between the homes and the lake that does not meet No Net Loss.
4. Sections of the shoreline have **shallow lots with homes close to the lake**.

Staff's recommendation for each study area is described below. Following the recommendation is a table in Section III.C summarizing the outcome of the proposed setback standards: number of new non-conformances, the amount of open space lost and the amount of new native landscaped area obtained from meeting the shoreline vegetation standards.

1. RS STUDY AREA #1 (see Attachment 4)

Location: Large single family area with 144 lots between the multi-family area and O.O. Denny Park.

Analysis: The area has a very wide range of lot depths and setback of homes. For example, one home is on a deep lot and located very close to the lake while the lot next door is also deep but the home is far back from the lake. Currently 31 homes out of 144 in this area do not meet the City's prior setback standard of 15% of the average parcel depth and a minimum of 15' which is much less than the setback standard under the new shoreline regulations. This area has substantially more non-conforming homes than in the City.

1st analysis: Since the August 26 2010 meeting, staff studied the corrected lot depths provided by the City's GIS department and overlaid **2 preliminary setback options of 35% and 30% average parcel depth (APD) at 30' minimum and 60" maximum** for the entire RS #1 study area.

Result: With both options listed above, a high number of lots with homes close to the lake would become non-conforming while the existing homes further away from the lake on deeper lots could move forward with a high significant loss of open space area.

2nd and 3rd analysis: The RS study area #1 was divided into **6 sub areas** based on groupings of parcel depth and home setback. After running setback options for these subareas, staff still found many non-conformances and open space loss that does not meet No Net Loss.

Staff then ran a 3rd analysis by further dividing the RS #1 study area into **10 subareas** again based on similar lot depth and setback and applying the setback standards listed below. The setback standards were derived based on what produced the fewest number of non-conformances and the lowest amount of lost open space for each subarea. Some subareas have the same setback standard with RS #1A used for 4 subareas and RS #1B used for 2 subareas (see Attachments 4a-4d). This approach is complex, but allows the setback standard to be tailored based on existing conditions:

RS study area #1 Setback Categories	Setback standard
RS #1A	30% of average parcel depth with 30' minimum and 80' maximum
RS #1B	15% of average parcel depth with 15' minimum
RS #1C	20% of average parcel depth with 30' minimum and 60' maximum
RS #1D	25% of average parcel depth with 30' minimum and 80' maximum
RS #1E	15% of average parcel depth with 25' minimum and 80' maximum
RS #1F	25% of average parcel depth with 30' minimum and 60' maximum
RS #1G	20% of average parcel depth with 30' minimum and 60' maximum

Result: The number of new non-conformances is reduced considerably by dividing the RS study area #1 into 10 subareas, but still would be higher than preferred at 24 lots out of 144 lots. The amount of open space lost is considerable due to the number of deep lots with homes setback far back from the lake (some homes can be located closer to the lake). This is the best approach for this area given the variation in lot depth and existing setback.

See the table in Section III. C. below that summarizes the outcome of the staff recommendations for the 4 study areas to be used to determine if No Net Loss would be met overall given the setback recommendations.

Staff recommendation for RS study area #1: Apply the 7 setback standards listed above to the applicable subareas as shown in Attachment 4a-4d.

2. RS STUDY AREA #2 (see Attachment 5)

Location: Single family area immediately north of O.O. Denny Park containing 32 lots.

Analysis: This area has a moderate range in lot depths at 110' to 150' and in setback at 4.5' to 48.9'. These lots abut Holmes Point Drive directly to the east, similar to the Lake Ave West area. In terms of existing non-conformances, 10 of the 32 lots do not meet the City's prior setback standard of 15% of the average parcel depth and a minimum of 15' which is much less of a setback standard compared to the new shoreline standards. As with RS study area #1, this area has substantially more non-conformances than in the City.

Staff overlaid several options balancing the number of additional non-conformances with the amount of open space area loss between the lake and homes. The "sweet spot" is a setback standard of 20% average parcel depth with a 25' minimum and maximum 60'. A total of 5 more homes become non-conforming with the new standard, but the amount of open space stays about the same. As with all options for the annexation area, some increase in non-conformance will occur to meet No Net Loss standard.

Staff recommendation for RS study area #2: 20% average parcel depth with a 25' minimum and maximum 60'.

3. RS STUDY AREA #3 (see Attachment 6)

Location: Single family area north of the RS study area #2 containing 14 lots, 2 of which are private beaches associated with the lots directly to the east separated by a right-of-way. This area has very small, narrow lots ranging in approximate size from 3,760 sq. ft. to 5,490 sq. ft. and setbacks ranging from 11.10' to 27.7'. One lot in the middle of the group is larger at 9500 sq. ft. but has a setback of 26.7 sq. ft. The lots in this study area are smaller in size and width than the single family area directly north of Kirkland's downtown and south of the Lake Ave West Street Park that has a special setback standard of a 15' minimum due to the close proximity of the homes to the shoreline and the shallow configuration of the lots.

Analysis: Out of 12 lots, 6 lots are already non-conforming under the prior City setback standard of 15% of average parcel depth and 15' minimum. Staff studied 2 options for this area: minimum of 15' and average of adjacent setbacks. The average adjacent setback option created 2 more non-conformances and increased the open space loss considerably while the minimum 15' setback option did not cause any increase in non-conformance and resulted in a decrease in loss of open space.

As with the 19 lots along Lake Ave West in Kirkland with a minimum setback standard of 15', we assume that DOE will accept this standard rather than their preferred standard of a minimum of 25' due to the shallow lots and shoreline setbacks.

Staff recommendation for RS study area #3: 15' minimum setback.

4. RS STUDY AREA #4 (see Attachment 7)

Location: Most northerly shoreline area containing 33 lots that are generally deep in configuration. Most of the homes are set back far from the lake while a few homes are very close to the lake.

Analysis: Two of the lots in this area are non-conforming based on the prior City setback standard of 15' minimum and 15% of average parcel depth because the homes are very close to the lake. The other homes in the study area are much further from the lake. Staff studied four options for this area. The option of 30% average parcel depth with 30' minimum and 80' maximum resulted in the least number of increased non-conformances (6 lots) while minimizing the loss of open space area for habitat.

The 80' maximum setback rather than 60' is needed to reduce the amount of loss in open space which would be considerable in this area with a 60' minimum. This is because the average setback here is 92 feet. Several of the homes would be able to be moved closer to the lake with the new standards.

Staff recommendation for RS study area #4: 30% average parcel depth with 30' minimum and 80' maximum.

5. RM STUDY AREA (see Attachment 8)

Location: 3 multi-family lots west of Juanita Beach in the most southerly portion of the annexation area. All 3 lots contain residential structures.

Analysis: All three lots have similar parcel depths so using lot depth as part of the setback standard is not necessary. Two of the lots have setbacks of about 45' while the third lot is for sale, contains several older single-family homes that are vacant and will likely redevelop as multifamily. Continuing with existing conditions would meet No Net Loss.

Staff recommendation: 45' minimum setback.

C. The Setback Recommendations and Meeting No Net Loss

As staff developed each setback recommendation, the estimated loss in open space as some homes can move forward to the lake and addition of new native landscape area required for development or redevelopment was calculated. DOE realizes that as development occurs, there will be some loss in open space. Since most of this current open space along Kirkland's and the annexation's shoreline contains lawn, decks, patios, swimming pools, the native plantings required next to the lake for development and redevelopment along with new lighting and pervious standards help offset the impact of less open space between homes and the lake. With the SMP update, DOE accepted a **3:1 ratio of loss in open space to new native plantings** when considered in conjunction with the lighting and pervious surface standards. To receive approval from DOE for the annexation SMP amendments, the outcome of the new setback

standards for the annexation area added to the existing Cumulative Impact Analysis should achieve the **same ratio of open space loss to native vegetation gain**.

Below is a table that calculates the estimated **conversion of open space loss and addition of new native landscaped buffer** along with the number of non-conformances:

RS Zones

	# of Lots	Existing Non-Conformances	Total Non-Conformances	Conversion of Open Space	Conversion of Open Space (Acres)	New Landscape Buffer Area	Existing Median Setback	New Median Setback
RS1	58.0	12.0	23.0	118,507.0		21,250.0		
	7.0	4.0	4.0	0.0		0.0		
	29.0	8.0	13.0	28,103.0		11,050.0		
	13.0	1.0	3.0	12,649.0		6,800.0		
	10.0	3.0	4.0	7,848.0		5,100.0		
	16.0	1.0	3.0	30,695.0		12,750.0		
	11.0	2.0	5.0	22,759.0		5,950.0		
RS 1 sum	144.0	31.0	55.0	220,561.0		62,900.0		
RS2	33.0	8.0	13.0	9,720.0		18,700.0		
RS3	12.0	6.0	6.0	5,480.0		2,550.0		
RS4	28.0	2.0	8.0	59,315.0		11,050.0		
Annexation Area Sum	217.0	47.0	82.0	295,076.0	6.8	95,200.0	46.3	41.5
City sum	97.0			77,972.4	1.8	23,958.0	40.1	36.0
Total City + Annexation Area	314.0			373,048.4	8.6	119,158.0	45.2	37.9

Option: 5% Setback Reduction for Nonconforming Residences, with Additional Landscaping

	# of Lots	Existing Non-Conformances	Total Non-Conformances	Conversion of Open Space	Conversion of Open Space (Acres)	New Landscape Buffer Area	Existing Median Setback	New Median Setback
RS1	58.0	12.0	22.0	119,927.0	2.8	21,250.0		
	7.0	4.0	4.0	0.0	0.0	0.0		
	29.0	8.0	9.0	31,329.0	0.7	12,750.0		
	13.0	1.0	3.0	12,649.0	0.3	6,800.0		
	10.0	3.0	4.0	7,848.0	0.2	5,100.0		
	16.0	1.0	1.0	32,704.0	0.8	14,450.0		
	11.0	2.0	3.0	22,256.0	0.5	6,800.0		
RS 1 sum	144.0	31.0	46.0	226,713.0	5.2	67,150.0		
RS2	33.0	8.0	13.0	9,720.0	0.2	18,700.0		
RS3	12.0	6.0	6.0	5,480.0	0.1	2,550.0		
RS4	28.0	2.0	5.0	61,192.0	1.4	11,900.0		
Annexation Area Sum	217.0	47.0	70.0	303,105.0	7.0	100,300.0		
City sum	97.0			77,972.4	1.8	23,958.0	40.1	36.0
Total City + Annexation Area	314.0			381,077.4	8.7	124,258.0		

Concerned with the number of **new non-conformances overall** and in particular in the RS study areas #1 and #4 where the greatest variation in lot depth and existing setback are found, staff proposes an **optional setback alternative for those with non-conforming homes of a 5% reduction in the average parcel depth if 20' in depth of native landscaping** is provided instead of the current standard of 10' in depth. Staff believes that it can justify to DOE that the additional native planting area offsets the reduction in shoreline setback. In no case can the optional setback alternative reduce the required setback below the minimum setback standard required for each area. As shown above, the total number of new non-conformances is reduced by an estimate of 12 lots with this alternative option.

For example, a lot that is 175' deep in the RS#1A study area with a setback requirement of 30% of the average parcel depth and a 30' minimum and 80' maximum would have a required setback of **52.5'**. With the setback alternative option, their setback would be reduced to **43.75'** with 20 feet of native landscaping.

In looking at the information in the table above, staff has concluded that a case can be made in the revised Cumulative Impact Analysis that No Net Loss would be met given the proposed setback standards and the alternative setback options for the non-conforming homes.

IV. REVISED CUMULATIVE IMPACT ANALYSIS (see Attachment 9)

The Cumulative Impact Analysis (CIA) is a background document required by DOE to analyze the following topics to determine if No Net Loss of ecological function, a required directive of the state Guidelines, will be met over the next 20 years:

- Existing conditions
- Likely future development or functions/processes potentially impacted
- Effect of SMP regulation
- Effect of other regulatory program and non-regulatory restoration actions

Amy Summe of the Watershed Company prepared the CIA for the SMP update and is now revising the CIA for the annexation area with the proposed setback standards outlined in Section III above. Staff will email the document to the Planning Commission before the September 23, 2010 study session and will hand out paper copies at the meeting. Reviewing this document prior to the public hearing on October 14, 2010 will be sufficient.

V. MISCELLANEOUS AMENDMENTS TO CHAPTER 83 (see Attachments 2 and 10)

As discussed at the August 26, 2010 meeting, staff is now using the new shoreline regulations and is finding some needed minor changes to Chapter 83. Below is a list of changes in addition to those provided in the staff memo of August 26, 2010:

- Revise Section 83.80.85 for definition of "primary structure" to exclude decks and patio:
(Attachment 10)

The term is used in Chapter 83 for measuring the average adjacent shoreline setback for the 19 lots along Lake Ave West south of the Lake Ave West Street End Park. Decks and

patios are not allowed in the shoreline setback, but only as an exception so they are not to be used to determine the average setback on either side of the subject property where the new home will be built. The definition of primary structure needs to be revised.

• Revise Sections 83.170 and 180 (charts) for Permitted Uses and Shoreline Development Standards: (Attachment 10)

- In Section 83.170, the reference to NE Juanita Dr. should be added for the limited commercial uses permitted in multifamily zones similar to those allowed along Lake Washington Blvd.
- In Section 83.180.3, the adopted height and density standards for the annexation RSA and RMA zones need to be reflected in the development charts.
- Also in Section 83.180.3, the term used in the average setback standard for the Residential L area along Lake Ave. West needs to be changed from “dwelling unit” to “primary structure” to be consistent with the same term used for the subject property for consistency and to exclude decks and patios for determining the average setback.

• Revise Section 83.190 for shoreline setback: (Attachment 10)

Clarify in Section 83.190 how the average setback standard along Lake Ave West is measured. It is the closest portion of the primary structure to the OHWM. Also, state in Section 83.190 to clarify that that motorized boats and float planes cannot be stored or parked in the shoreline setback. This would allow canoes and kayaks which are not typically left moored in the lake.

• Revise Section 83.550.2 for *When Conformance is Required*: (see Attachment 2)

This section needs to be clarified that a non-conforming structure may be repaired or maintained but not replaced, except as specified in other sections of Section 83.500 for damaged improvements or on a lot with less than 3,000 square feet of developable area due to critical areas and shoreline setback. The Planning Department had an issue a few years ago when someone allowed a non-conforming structure next to Forbes Lake to completely erode over 30-40 years and then argued to replace the structure under the maintenance and repair provisions.

Staff Recommendation: The minor changes in Attachment 10 are recommended for the reasons noted above.

VI. **AMENDMENTS TO THE ZONING CODE’S USE ZONE CHARTS-RSA, RMA and WDII (Attachments 11-13)**

The SMP update included amendments to the existing Zoning Code to reduce the front property line setback to help offset the new shoreline setback requirements, to allow private beaches associated with adjacent residential developments, to make the existing code and the

new shoreline regulations internally consistent and to reference the new shoreline regulations in various sections of the code.

The RSA, RMA and WDII charts are not in Chapter 83 (the shoreline regulations) and thus area not subject to DOE approval.

Staff recommends similar minor code amendments to the annexation use zone charts as follows:

A. RSA and RMA Use Zone Charts (see Attachments 11 and 12)

As with the SMP update, some minor Zoning Code Amendments are needed to the annexation use zone charts of RSA (single family) and RMA (multifamily) to be **consistent with the new shoreline regulations**. The adopted RSA and RMA use zone charts that will be in effect next June 2011 with annexation do not reference the new shoreline regulations and/or do not reflect the new terminology for shoreline setback.

With the SMP update, the City reduced the **front yard setback** in the shoreline area for the single-family area from 20' to 10' provided that the required shoreline setback is provided. The front yard setback in the annexation area is 20' for both single family and multifamily. This yard setback should be able to be reduced to 10' if the shoreline setback is provided.

The RSA area has two properties that the City is aware of that have private beaches as part of the adjacent lots. Private beaches should be an allowed use when part of a residential lot.

Staff Recommendation: Changes to the RSA and RMA charts that include references to the new shoreline chapter, reduce the front yard if the required shoreline setback is provided and allow for private beaches when part of a residential lot.

B. Waterfront District II (WDII) Charts (see Attachment 13)

The WDII use zone charts provide regulations for the single family areas in Kirkland that are beyond the scope of DOE's concern, such as front and side yard setbacks. Changes were made to the WDII charts as part of the SMP update to reduce the front yard setback requirement and to replace the north property line setback with two options for side yards. Staff has identified the following needed minor redrafting of some of the special regulations for the WDII zone for clarification and ease of implementation:

- Minor edits are proposed to the **new provision for 15% reduction for the gross floor** area for the upper floor to simplify the description of the provision.
- The side yard setback option of a 5' setback on each side with a gross floor area reduction on the upper floors instead of a minimum 5' and 2 side yards equal 15' **should not reference the floor area ratio (FAR) requirements** in Section 115.42.1 as noted in Special Regulation 5.d because FAR excludes covered decks. Covered decks need to be included in the gross floor calculation because of the massing of the roof and support beams. This was not intended when the regulation was drafted.

VII. FUTURE REVIEW SCHEDULE

As outlined in the August 26, 2010 staff memo, the following is a list of the upcoming meetings:

- October 14, 2010 – public hearing and any follow-up from the September 23rd meeting.
- October 28, 2010 – final recommendation unless done after the October 14, 2010 hearing.
- November 18, 2010 – City Council Intent to Adopt. SMP amendments would then be transmitted to DOE for final approval.

VIII. ATTACHMENTS

1. Proposed amendments to Section 83.270-280 (piers/docks)
2. Proposed amendments to Section 83.550 (non-conformances)
3. Shoreline setback study areas
4. RS study area #1 setback options by subarea
5. RS study area #2 setback option
6. RS study area #3 setback option
7. RS study area #4 setback option
8. RM study area setback option
9. Revised Cumulative Impact Analysis (to be emailed closer to the meeting with copies circulated at the meeting)
10. Additional miscellaneous follow-up amendments to Chapter 83
11. Proposed amendments to the RSA use zone charts (annexation area)
12. Proposed amendments to the RMA use zone charts (annexation area)
13. Proposed amendments to the WDII use zone charts (city zone)

cc: File No. ZON06-00017, Sub-file #12

AMENDMENTS TO PIERS/DOCKS REGULATIONS

83.270 Piers, Docks, Moorage Buoys and Piles, Boatlifts and Boat Canopies Serving a Detached Dwelling Unit Use (Single-family)

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. [Only one \(1\) pier or dock may be located on a subject property.](#)

~~b.c.~~ In the following circumstances, a joint use pier shall be required:

- 1) On lots subdivided to create one or more additional lots with waterfront access rights.
- 2) New residential development of two or more dwelling units with waterfront access rights.

~~e.d.~~ Piers, docks, boatlifts and moorage piles shall be designed and located to meet KZC 83.360 for no net loss standard and mitigation sequencing.

~~d.e.~~ For proposed extension of structures proposed waterward of the inner harbor line, see KZC 83.370.

4. New Pier or Dock Dimensional Standards –

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

(Complete chart is not provided below but only portion to be amended)

New Pier, Dock or Moorage Piles for Detached Dwelling Unit (single-family)	Dimensional and Design Standards
Pilings and Moorage Piles	<p>Pilings or moorage piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds.</p> <p>First set of pilings for a pier or dock shall be located no closer than 18 ft from OHWM.</p> <p>Moorage piles shall be located no closer than 30 ft. from the OHWM or any farther waterward than the end of the pier or dock.</p> <p>Moorage buoys are not permitted when a pier or dock is located on a subject property.</p> <p>Maximum 2 moorage piles per detached dwelling unit, including existing piles</p> <p>Maximum 4 moorage piles for joint use piers or docks, including existing piles</p>

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 (single-family)	Requirements
Replacement of entire existing pier or dock, including piles OR more than 50 percent of the pier-support piles and more than 50 percent of the decking or decking substructure (e.g. stringers)	Must meet the dimensional decking and design standards for new piers as described in KZC 83.270.4.a, except the City may administratively approve an alternative design described in subsection b. below.
Mitigation	<p><u>The following improvements shall be removed:</u></p> <p><u>1.</u> Existing skirting shall be removed and may not be replaced.</p> <p><u>2.</u> Existing in-water and overwater structures located within 30 feet of the OHWM <u>other than the subject replacement pier. Existing in-water structures, such as boatlifts, may be shifted farther waterward to comply with this requirement.</u> Existing or authorized shoreline stabilization measures <u>may be retained, shall be removed.</u></p>

7. Additions to Pier or Dock –

Proposals involving the addition to or enlargement of existing piers or docks must comply with the requirements below. These provisions shall not be used in combination with the provisions for new or replacement piers contained in KZC 83.270.4 and 6.

Addition to Existing Pier or Dock for Detached Dwelling Unit (single-family)	Requirements
Addition or enlargement	<p>Must demonstrate that there is a need for the enlargement of an existing pier or dock</p> <p>Examples of need include, but are not limited to safety concerns or inadequate depth of water</p>
Dimensional standards	Enlarged portions must comply with the new pier or dock standards for length and width, height, water depth, location, decking and pilings and for materials as described in KZC 83.270.4.a
Decking for piers, docks walkways, ells and fingers	Must convert an area of decking within 30 ft. of the OHWM to grated decking equivalent in size to the additional surface coverage. Grated or other materials must allow a minimum of 40%

	light transmittance through the material
Mitigation	<p>Planting and other mitigation as described in KZC 83.270.5</p> <p><u>The following improvements shall be removed:</u></p> <p><u>1.</u> Existing skirting shall be removed and may not be replaced.</p> <p><u>2.</u> Existing in-water and overwater structures located within 30 ft. of the OHWM shall be removed at a 1:1 ratio to the area of the addition, except for existing or authorized shoreline stabilization measures and or ramp or the walkway of the pier or dock <u>being enlarged</u>.</p> <p><u>3. Covered boat moorage structures, except for boat canopies that comply with KZC 83.270.9.</u></p> <p><u>4. Boat storage structures in the required shoreline setback.</u></p>

83.280 Piers, Docks, Moorage Buoys, 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.

~~a.b.~~ Only one (1) pier or dock may be located on a subject property.

~~b.c.~~ Piers, docks, boatlifts and moorage piles shall be designed and located to meet KZC 83.360 Mitigation Sequencing.

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

a. Additions – Proposals involving the addition to 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)	<u>Requirements</u>
Addition or enlargement	Must demonstrate that there is a need for the

	enlargement of an existing pier or dock
Dimensional standards	Enlarged portions must comply with the new pier or dock dimensional standards for length, width, height, water depth, location, decking material and pilings and for materials as described in KZC 83.280.5
Decking for piers, docks walkways, ells and fingers	Must convert an area of existing decking within 30 ft. of the OHWM with grated decking equivalent in size to the additional surface coverage. Grated or other materials must allow a minimum of 40% light transmittance through the material
Mitigation	<p>Plantings and other mitigation as described in KZC 83.280.6 above</p> <p><u>The following improvements shall be removed:</u></p> <ol style="list-style-type: none"> <u>1.</u> Existing skirting shall be removed and may not be replaced. <u>2.</u> Existing in-water and overwater structures located within 30 ft. of the OHWM shall be removed at a 1:1 ratio to the area of the addition, except for existing or authorized shoreline stabilization measures and or pier or dock walkways or ramps, shall be removed at a 1:1 ratio to the area of the addition <u>3.</u> Existing covered boat moorage structures, except for boat canopies that comply with KZC 83.280.8. <u>4.</u> Boat storage structures in the shoreline setback.

AMENDMENTS TO NONCONFORMANCE REGULATIONS

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. The applicant needs 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 KZC 83.550 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 increases the extent of the nonconformity or replaced, except as specifically permitted under KZC 83.550.
3. *No change*
4. *No change*

5. Certain Nonconformances Specifically Regulated

a. 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, and for structures landward of the OHWM the alteration to existing windows and/or doors and the addition of new windows and/or doors or other similar features, provided that there is no increase in floor area or that the location of the exterior wall is not modified in a manner that increases the degree of nonconformance.
- 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 accessory structures are located within the shoreline setback, these existing nonconforming structures must be removed or otherwise 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) If accessory structures are located within the shoreline setback and are used to store boats or other type of watercraft, these existing nonconforming structures must be removed or otherwise brought into conformance if the applicant is proposing an addition to a pier, dock or marina under KZC 83.270.8, KZC 83.280.7 or KZC 83. 290.6.

Remaining subsections in KZC 83.550.5.a shall be renumbered as 6) through 8)



ATTACHMENT 3



4 80 160 320 640
Feet

NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.

Shoreline Setback Regulation for RS-1 Study Area - Variable Average Parcel Depth w/ Variable Minimum
Shoreline Master Program - Kirkland Association Area

20' Minimum Setback	20% Average Setback	Ordinary High Water Mark	Adjacent City Limits
30' Minimum Setback	30% Average Setback	Shoreline Management Area	Shoreline Association Area
15% Average Setback	60' Maximum Setback	Tide Gauge	Kirkland City Limits
20% Average Setback	80' Maximum Setback		

FIG-XXa



RS-1C
 20% Average Setback
 30' Minimum Setback
 60' Maximum Setback

RS-1A
 30% Average Setback
 30' Minimum Setback
 80' Maximum Setback



4 80 160 240 320 400
 Feet

NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply superseding the incorrect or outdated map.

Shoreline Setback Regulation for RS-1 Study Area - Variable Average Parcel Depth w/ Variable Minimum
 Shoreline Master Program - Kirkland Association Area

20' Minimum Setback	20% Average Setback	Ordinary High Water Mark	Adjacent City Limits
30' Minimum Setback	30% Average Setback	Shoreline Management Zone	Shoreline Association Area
15% Average Setback	60' Maximum Setback	Tier 1 Shoreland	
20% Average Setback	80' Maximum Setback	Kirkland City Limits	

FIG-XXb



4 80 160 240 320 400
 Feet

NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.

Shoreline Setback Regulation for RS-1 Study Area - Variable Average Parcel Depth w/ Variable Minimum
 Shoreline Master Program - Kirkland Association Area

20' Minimum Setback	20% Average Setback	Ordinary High Water Mark	Adjacent City Limits
30' Minimum Setback	30% Average Setback	Shoreline Management Area	Shoreline Association Area
15% Average Setback	60' Maximum Setback	Tide Fluctuation	Kirkland City Limits
20% Average Setback	80' Maximum Setback		

FIG-XXc



RS-1F
 25% Average Setback
 30' Minimum Setback
 60' Maximum Setback

RS-1E
 15% Average Setback
 25' Minimum Setback
 80' Maximum Setback

RS-1A
 30% Average Setback
 30' Minimum Setback
 80' Maximum Setback

RS-1B
 15% Average Setback
 15' Minimum Setback



NOTE: In the event of a mapping error or ambiguity the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply superseding the incorrect or outdated map.

Shoreline Setback Regulation for RS-1 Study Area - Variable Average Parcel Depth w/ Variable Minimum
 Shoreline Master Program - Kirkland Association Area

20' Minimum Setback	20% Average Setback	Ordinary High Water Mark	Adjacent City Limits
30' Minimum Setback	30% Average Setback	Shoreline Management Area	Shoreline Association Area
15% Average Setback	60' Maximum Setback	Tide Fluctuation	Kirkland City Limits
20% Average Setback	60' Maximum Setback		

FIG-XXd



4 80 160 240 320 400
Feet

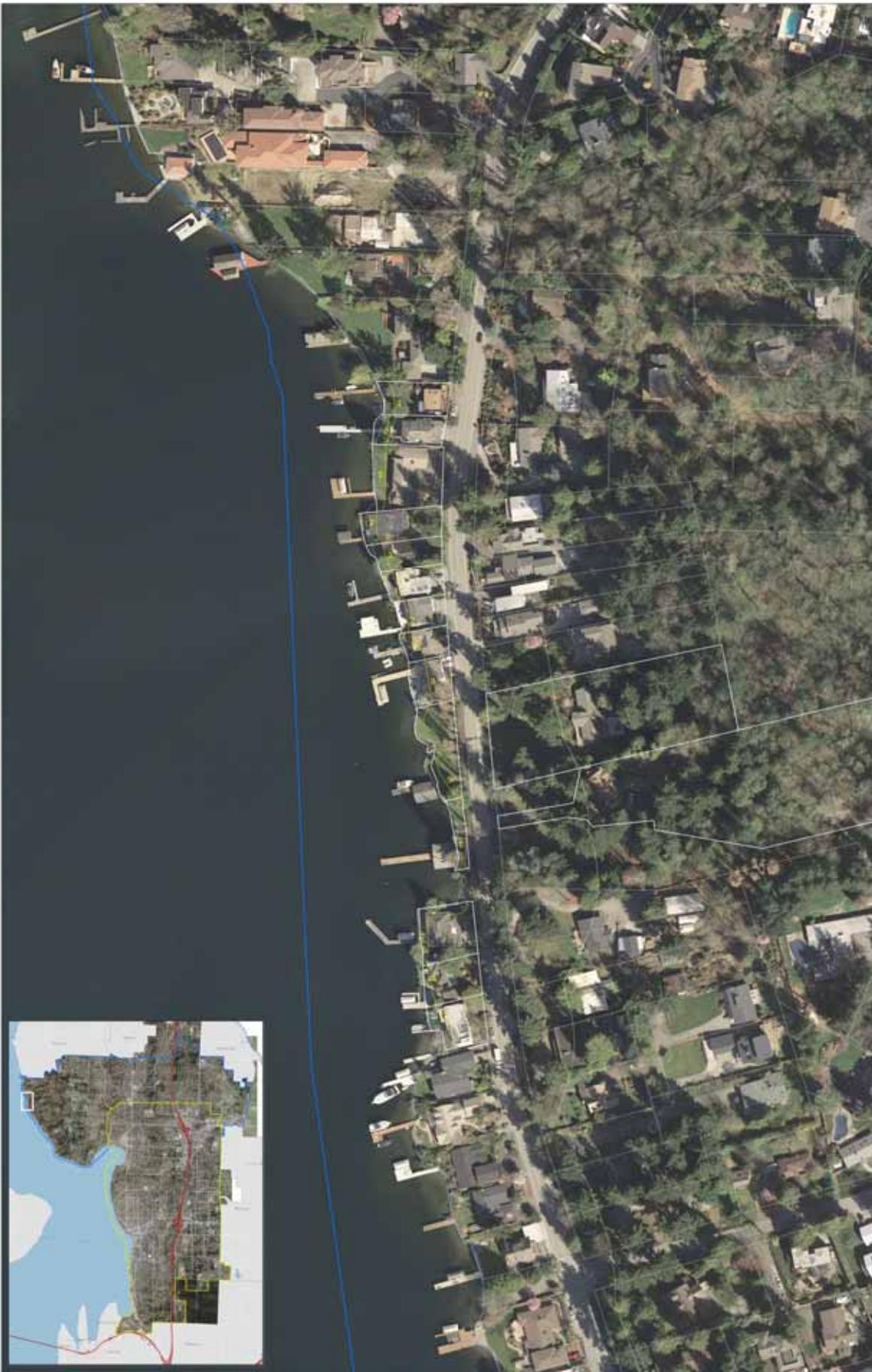
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply superseding the incorrect or outdated map.

Shoreline Setback Regulation for RS-2 Study Area - 20% Average Parcel Depth w/ 25' Minimum

Shoreline Master Program - Kirkland Association Area

<ul style="list-style-type: none"> — 25' Minimum Setback — 20% Average Lot Depth — Ordinary High Water Mark — Shoreline Management Area 	<ul style="list-style-type: none"> — No. Property — Kirkland City Limits — Puget Sound City Limits — kirkland.wa.gov/development/development-services
---	---

FIG-XX



0 50 100 200 300 Feet

NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply superseding the incorrect or outdated map.

Shoreline Setback Regulation for RS-3 Study Area - 15' Minimum (No Average Lot Depth)

Shoreline Master Program - Kirkland Association Area

- 15' Minimum Setback
- Ordinary High Water
- Shoreline Management Area
- No. Power
- Waterway CGO Limits
- Adjacent City Limits
- Shoreland Withdrawal Area

FIG-XX



4 50 100 200 300 400
Feet

N

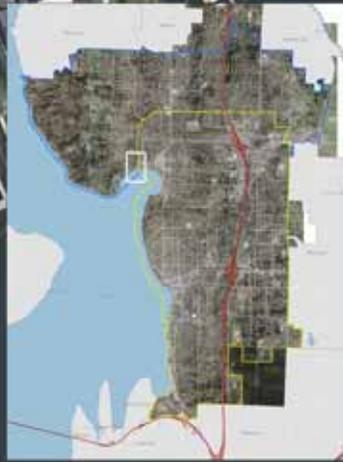
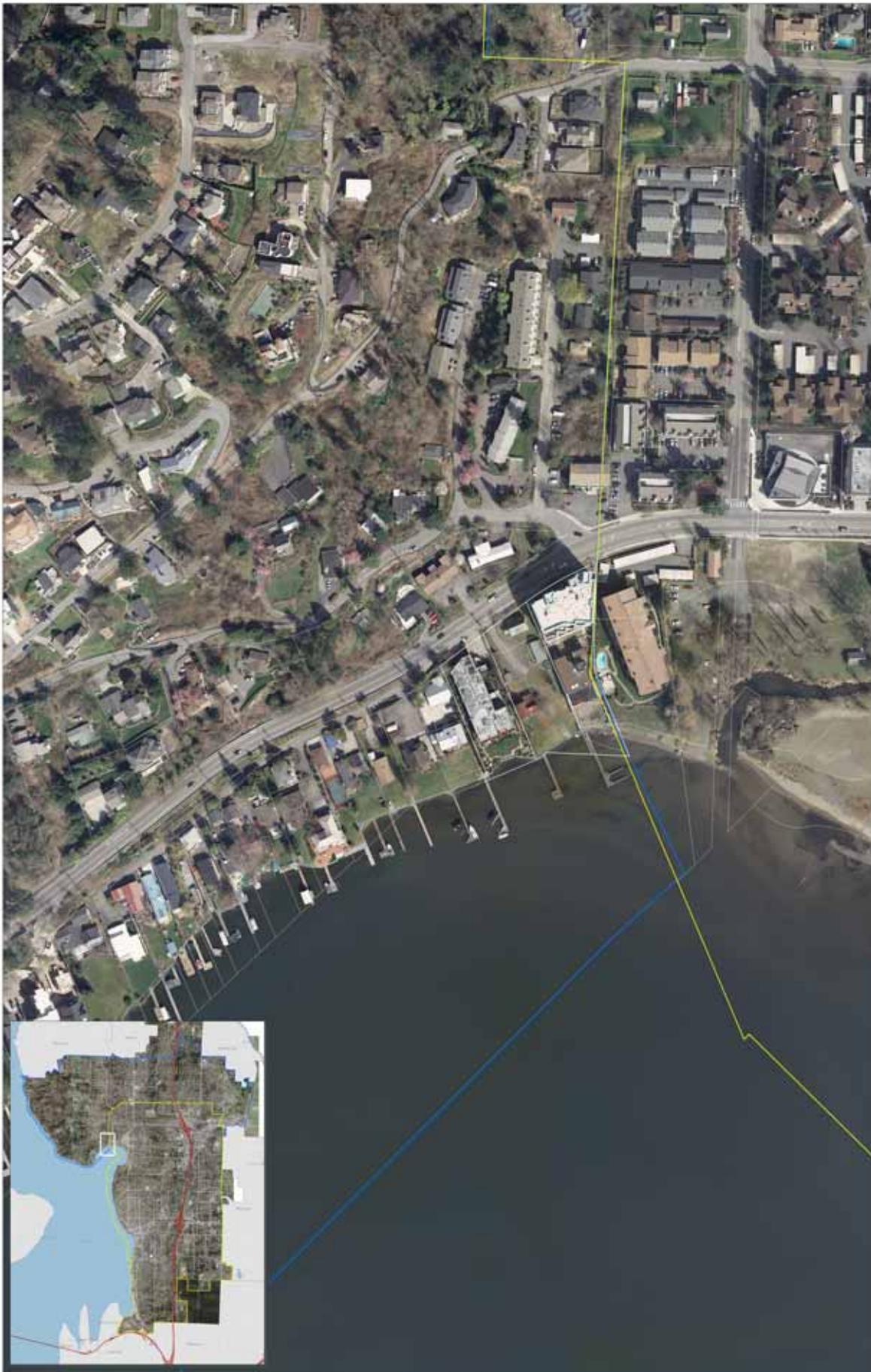
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.

**Shoreline Setback Regulation for RS-4 Study Area -
30% Average Parcel Depth w/ 30' Minimum and 80' Maximum**
Shoreline Master Program - Kirkland Annexation Area

- 30% Average Setback
- 30' Minimum Setback
- 80' Maximum Setback
- Ordinary High Water Mark
- Shoreline Management Area
- City Parcel
- Residential City Lot
- Proposed City Lot
- Future Development



FIG-XX



4 80 160 240 320 400 Feet

NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply superseding the incorrect or outdated map.

Shoreline Setback Regulation for RM Study Area - 45' Minimum (No Average Lot Depth)
 Shoreline Master Program - Kirkland Association Area

45' Minimum Setback	No. Poles
Ordinary High Water Mark	Wetland City Limits
Shoreline Management Area	Population City Limits
	Kirkland Association Area

FIG-XX

DRAFT
SHORELINE CUMULATIVE IMPACTS ANALYSIS

for the City of Kirkland
Shoreline Master Program

Prepared by:



City of Kirkland
Planning and Community Development
123 Fifth Avenue
Kirkland, WA 98033



750 Sixth Street South
Kirkland, WA 98033

June 2009 September 2010

The Watershed Company Reference Number:

051011

The Watershed Company Contact Person:

Amy Summe and Dan Nickel

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SHORELINE CUMULATIVE IMPACTS ANALYSIS

FOR CITY OF KIRKLAND
SHORELINE MASTER PROGRAM

1 INTRODUCTION

The Shoreline Management Act guidelines (Washington Administrative Code [WAC] 173-26, Part III) require local shoreline master programs (SMPs) to regulate new development to “achieve no net loss of ecological function.” The guidelines state that, “To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts” (WAC 173-26-186(8)(d)).

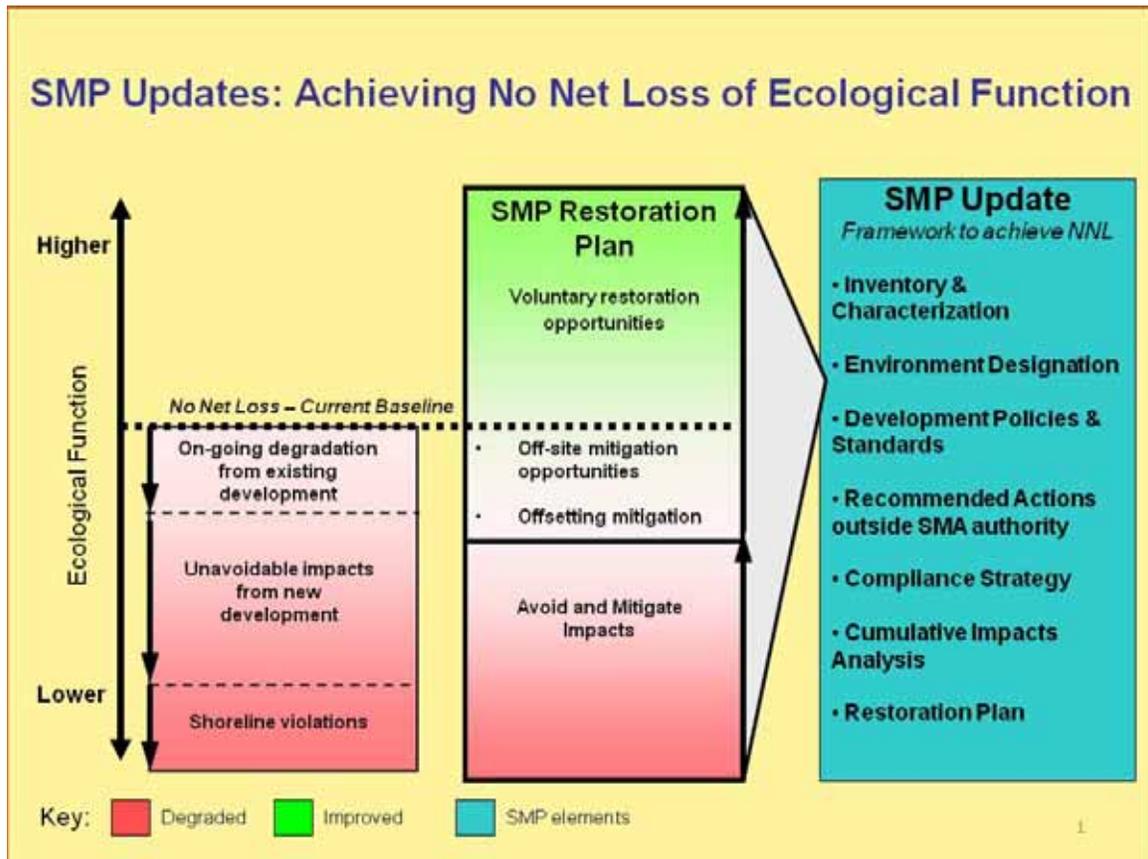
The guidelines further elaborate on the concept of net loss as follows:

“When based on the inventory and analysis requirements and completed consistent with the specific provisions of these guidelines, the master program should ensure that development will be protective of ecological functions necessary to sustain existing shoreline natural resources and meet the standard. The concept of “net” as used herein, recognizes that any development has potential or actual, short-term or long-term impacts and that through application of appropriate development standards and employment of mitigation measures in accordance with the mitigation sequence, those impacts will be addressed in a manner necessary to assure that the end result will not diminish the shoreline resources and values as they currently exist. Where uses or development that impact ecological functions are necessary to achieve other objectives of RCW 90.58.020, master program provisions shall, to the greatest extent feasible, protect existing ecological functions and avoid new impacts to habitat and ecological functions before implementing other measures designed to achieve no net loss of ecological functions.” [WAC 173-26-201(2)(c)]

In short, updated SMPs shall contain goals, policies and regulations that prevent degradation of ecological functions relative to the existing conditions as documented in that jurisdiction’s characterization and analysis report. For those projects that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the baseline. This is illustrated in Exhibit 1 below. The jurisdiction must be able to demonstrate that it has accomplished that goal through an

analysis of cumulative impacts that might occur through implementation of the updated SMP. Evaluation of such cumulative impacts should consider:

- (i) current circumstances affecting the shorelines and relevant natural processes;
- (ii) reasonably foreseeable future development and use of the shoreline; and
- (iii) beneficial effects of any established regulatory programs under other local, state, and federal laws.”



Source: Department of Ecology

Exhibit 1. Department of Ecology Illustration to Achieve “No Net Loss”

As outlined in the Shoreline Restoration Plan prepared as part of this SMP update, the SMA also seeks to restore ecological functions in degraded shorelines. This cannot be required by the SMP at a project level, but Section 173-26-201(2)(f) of the Guidelines says: “master programs shall include goals and policies that provide for restoration of such impaired ecological functions.” See the Shoreline Restoration Plan for additional discussion of SMP policies and other programs and activities in Kirkland that contribute to the long-term restoration of ecological functions relative to the baseline condition.

The following information and analysis provided in this report provides an overview by proposed environment designation of existing conditions, anticipated development, relevant Shoreline Master Program (SMP) and other regulatory provisions, and the expected net impact on ecological function.

2 EXISTING CONDITIONS

The following summary of existing conditions is based on the Final Shoreline Analysis Report (The Watershed Company 2006) and additional analysis needed to perform this assessment. This discussion has been divided by proposed shoreline environment designations. As shown in Figure 1 in Appendix A, these include Residential – L, Residential M/H, Urban Mixed, Urban Conservancy, Natural, and Aquatic designations. The Shoreline Analysis Report includes an in-depth discussion of the topics below, as well as information about transportation, stormwater and wastewater utilities, impervious surfaces, and historical/archaeological sites, among others.

As shown in Table 1, nearly 40-27 percent of the City’s shoreline frontage, including the annexation area, and over 60-50 percent of the City’s total shoreline area is designated Natural or Urban Conservancy, the designations assigned to those lands that have higher levels of ecological function and the lower levels of existing and allowed alteration. The majority of the City’s shoreline development is concentrated in the remaining 60-73 percent of the shoreline frontage and just under 40-50 percent of the shoreline area, in areas that generally have lower levels of ecological function as a result of that development.

Table 1. Length of Shoreline Frontage and Shoreline Area by Environment Designation

Environment Designation	Waterfront Length	Percent of Total Shoreline Frontage	Area in Shoreline Jurisdiction	Percent of Total Shoreline Area
Natural (N)	8,312 Feet (1.57 Miles)	<u>2616</u> %	143 acres	<u>5844</u> %
Urban Conservancy (UC)	<u>4,5145,782</u> Feet (<u>0.851.10</u> Miles)	<u>4411</u> %	<u>48-24</u> acres	7%
Residential – Low (R-L)	<u>8,42327,115</u> Feet (<u>1.545.14</u> Miles)	<u>2551</u> %	<u>34-102</u> acres	<u>4332</u> %
Residential – Medium/High (R-M/H)	<u>6,2046,477</u> Feet (<u>1.18-23</u> Miles)	<u>4912</u> %	<u>30-31</u> acres	<u>4210</u> %
Urban Mixed (UM)	5,043 Feet (0.96 Miles)	<u>4610</u> %	24 acres	<u>497</u> %
TOTAL	<u>32,19652,729</u> Feet (<u>6.110.0</u> Miles)	100%	<u>245323</u>	100%

It is important to note that overall Kirkland's shoreline zone is generally deficient in high-quality biological resources and critical areas, with the exception of the wetlands and shoreline areas within and adjacent to Yarrow Bay and Juanita Bay.

2.1 Residential – L Environment

Approximately ~~13~~32 percent of the City's upland shoreline jurisdiction is in the Residential – L environment. Results from Kirkland's Shoreline Analysis Report (The Watershed Company 2006) show that the majority of the Residential – L environment contains Medium functioning shoreline. Two small areas of Residential – L environment ~~are~~ located along Lake Washington Boulevard, ~~in an area~~ are rated as Low functioning. These shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.1.1 Existing Land Use

The shoreline within the Residential – L environment is exclusively single-family residential. In general, the land area designated as Residential – L is fully developed, containing approximately 35 percent impervious surface. Expansion, redevelopment or alteration to existing single-family units will occur over time (see Figures 1a-d in Appendix B). The Residential – L environment contains ~~117~~450 lots, ~~97~~324 of which abut the water. ~~Two~~Twenty-four lots are vacant, including ~~one~~13 waterfront lots (see Figure 2 in Appendix B).

The existing median residential structure setback in the Residential – L environment is approximately 43 ~~and 47~~ feet, ~~respectively~~, from the ordinary high water mark (OHWM) ~~of the City and annexation area~~ (see Figures 3a-f in Appendix B). However, the median distance from the OHWM to improvements (either paved surfaces or other accessory structures) is approximately 36 ~~and 31~~ feet, ~~respectively~~. Table 2 presents data on existing residential structure setbacks on parcels within the Residential – L environment. As Table 2 shows, ~~23~~53 (~~24~~22%) of the ~~97~~242 waterfront parcels have residential structures located less than 30 feet (non-conforming structures) from the OHWM. Of the remaining developed lots, ~~53~~107 (~~55~~44%) have residential structures between 30 and 60 feet from OHWM, and ~~22~~83 (~~23~~34%) have residential structures greater than 60 feet from the OHWM.

Table 2. Existing shoreline residential structure setback data for the Residential – L environment.

Measure of residential structure setback	Number of <u>Waterfront</u> <u>Parcels in the City with</u> <u>Waterfront Structures</u>	<u>Number of Parcels in the</u> <u>Annexation Area with</u> <u>Waterfront Primary</u> <u>Structures</u>
Total Waterfront Parcels	97	<u>145</u>
Structures < 30 ft from OHWM	23	<u>30</u>
Structures 30 - 60 ft. from OHWM	53	<u>54</u>

Measure of residential structure setback	Number of <u>Waterfront</u> <u>Parcels in the City with</u> <u>Waterfront Structures</u>	Number of <u>Parcels in the</u> <u>Annexation Area with</u> <u>Waterfront Primary</u> <u>Structures</u>
Structures > 60 ft. from OHWM	22	<u>61</u>

In general, setbacks ranged widely from essentially 0 feet to 232-406 feet. Setbacks at individual properties in the original City limits have seem to be based on several factors, including local topography, lot depth (see Exhibit 2a), and location of the sewer line. The relationship between lot depth and setback is relatively strong and generally consistent. A cluster of very shallow lots corresponding to very small existing structure setbacks is located south of the Heritage Park street end to just north of Marina Park. In the recently annexed area, however, while a relationship between parcel depth and existing setback exists, it is weaker and inconsistent (see Exhibit 2b). Similar to the original City area, the annexation area contains a cluster of very shallow lots corresponding to very small existing structure setbacks. This area is located north of O.O. Denny Park to a point mid-way between the Park and the new City limits.

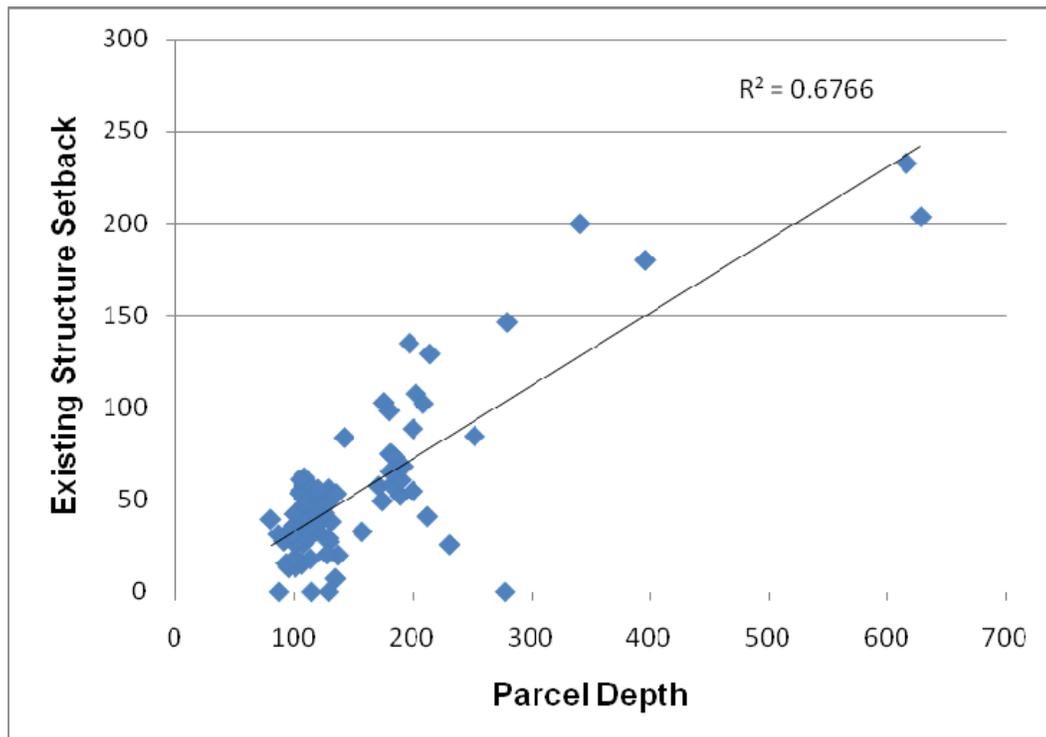


Exhibit 2a. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Low Shoreline Environment within the original City limits.

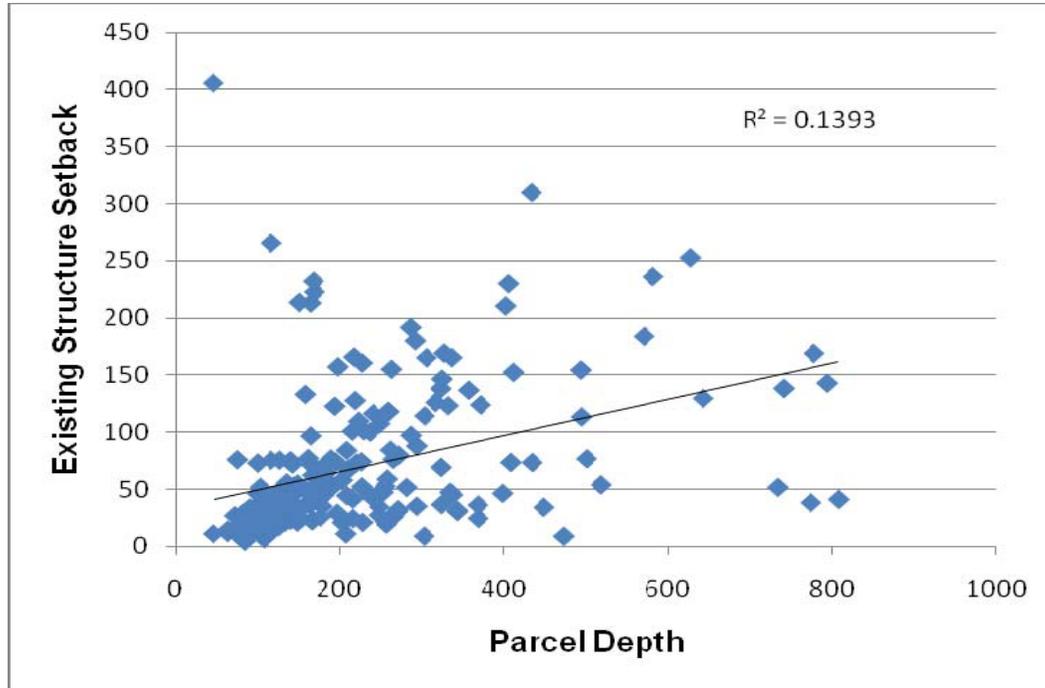


Exhibit 2b. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Low Shoreline Environment within the annexation area.

2.1.2 Parks and Open Space/Public Access

There are no formal public parks or open spaces within the Residential – L environment. However, there are several waterfront street ends, though these are presently not developed or used for public purposes.

2.1.3 Shoreline Modifications

The Residential – L environment is heavily modified with just over ~~88~~80 percent of the shoreline armored at or near the OHWM (Table 3) (see Figures 7a-7e in the Shoreline Analysis Report) and a pier density of approximately ~~56~~58 piers per mile (Table 4). This compares to 71 percent armored and 36 piers per mile for the entire Lake Washington shoreline (Toft 2001). Thus, for Kirkland’s Residential – L environment, pier density and shoreline armoring are much higher than the lake-wide figures.

Table 3. Shoreline armoring in the Residential – L environment.

Shoreline Condition (feet / % of shoreline)	
Armored ¹	Natural / Semi-Natural ²
7,148 <u>21,818</u> (88 <u>80</u> %)	975 <u>5,297</u> (12 <u>20</u> %)

- ¹ “Armored” shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.
- ² “Natural/Semi-Natural” shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 4. In-water structures in the Residential – L environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square feet)
90298	5658	73252,947877 ft² 5.81 acres

It is not uncommon around Lake Washington for some historic fills to be associated with the original bulkhead construction, usually to create a more level or larger yard. Most of these shoreline fills occurred at the time that the lake elevation was lowered during construction of the Hiram Chittenden Locks.

2.2 Residential – M/H Environment

Approximately ~~12-10~~ percent of the City’s upland shoreline jurisdiction is in the Residential – M/H environment. Results from Kirkland’s Shoreline Analysis Report (The Watershed Company 2006) show that the majority of the Residential – M/H environment contains ~~Poor~~/Low functioning shoreline. However, one small area of Residential – M/H environment ~~is~~ located just west of Juanita Beach Park, ~~in an is area~~ rated as High functioning. ~~A s~~Second ~~and third~~ areas of Residential – M/H environment ~~is~~ located just north of Marina Park ~~and west of Juanita Beach Park, in an are area~~ rated as Medium functioning. These shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.2.1 Existing Land Use

The shoreline within the Residential – M/H environment is comprised of both single- and multi-family residential uses. In general, the land area is fully developed, containing approximately 54 percent impervious surface. Expansion, redevelopment or alteration to existing multi-family units will occur over time (see Figures 1a-d in Appendix B). The Residential – M/H environment contains ~~92-95~~ lots, ~~57-60~~ of which abut the water. Five lots are vacant, including four waterfront lots (see Figure 2 in Appendix B).

The existing median residential structure setback in the Residential – M/H environment is approximately 24 ~~and 45~~ feet, ~~respectively~~, from the OHWM ~~of the City and annexation areas~~ (see Figures 3a-f in Appendix B). However, the median distance from the OHWM to improvements (either paved surfaces or other accessory structures) is

approximately 15 feet in the City; the median improvement setback in the annexation area is the same as the median primary structure setback – 45 feet. Table 5 presents data on existing residential structure setbacks on parcels within the Residential – M/H environment. As Table 5 shows, 28 (5047%) of the 56-59 waterfront parcels have residential structures located less than 25 feet from the OHWM. Of these, six residential condominium structures were built out over the water. Of the remaining developed lots, 15 (2725%) have residential structures between 25 and 40 feet from OHWM, and ~~13~~ 16 (2327%) have residential structures greater than 40 feet from OHWM.

Table 5. Existing shoreline residential structure setback data for the Residential – M/H environment.

Measure of primary structure setback	Number of <u>Waterfront</u> <u>Parcels in the City with</u> <u>Waterfront Structures</u>	<u>Number of Parcels in the Annexation Area with</u> <u>Waterfront Primary Structures</u>
Total Waterfront Parcels	56	<u>3</u>
Structures < 25 ft from OHWM	28	<u>0</u>
Structures 25 - 40 ft. from OHWM	15	<u>0</u>
Structures > 40 ft. from OHWM	13	<u>3</u>

In general, setbacks ranged widely from essentially 0 feet to 134 feet. This environment also contains several buildings constructed over the water and supported on pilings. Similar to the Residential – L environment, setbacks at individual properties seem to be based on several factors, including lot depth (see Exhibit 3) and location of the sewer line. However, the correlation is not as strong. This is likely because most of the existing multi-family developments attempt to maximize number of units on a given parcel, making it a higher priority to push the development closer to the water.

2.2.2 Parks and Open Space/Public Access

There are no formal public parks or open spaces within the Residential – M/H environment.

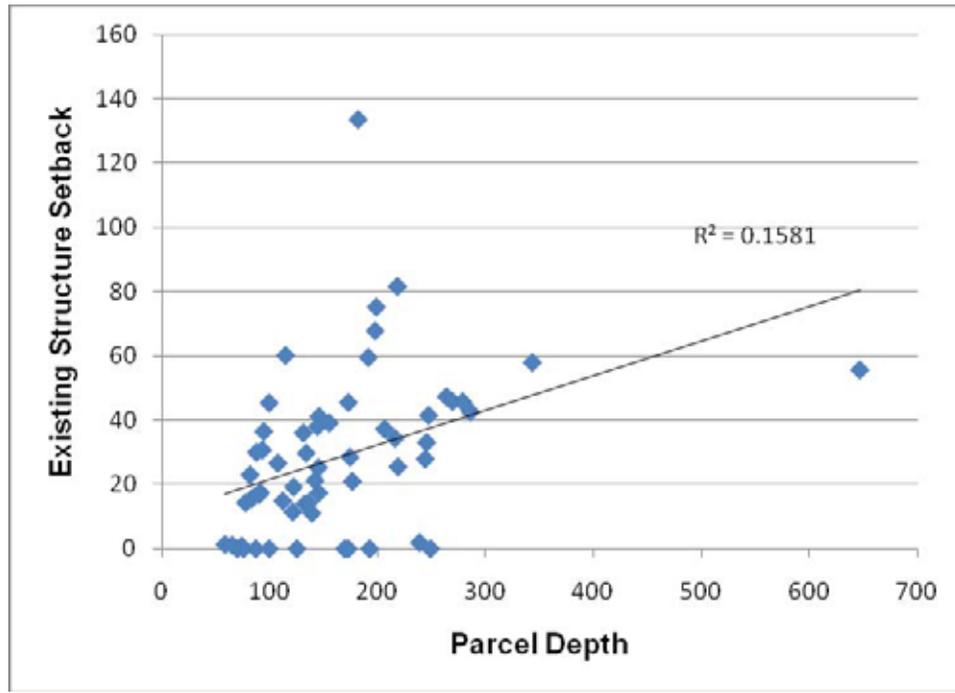


Exhibit 3. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Medium/High Shoreline Environment within the combined original City limits and annexation areas.

2.2.3 Shoreline Modifications

The Residential – M/H environment is heavily modified with just over 89 percent of the shoreline armored at or near the OHWM (Table 6) (see Figures 7a-7e in the Shoreline Analysis Report) and a pier density of approximately 42 piers per mile (Table 7). This compares to 71 percent armored and 36 piers per mile for the entire Lake Washington shoreline (Toft 2001). Thus, for Kirkland’s Residential – M/H environment, pier density and shoreline armoring are both higher than the lake-wide figures, although pier density is lower than the Residential –L environment.

Table 6. Shoreline armoring in the Residential – M/H environment.

Shoreline Condition (feet / % of shoreline)	
Armored ¹	Natural / Semi-Natural ²
5,522-737 (89%)	682-740 (11%)

¹ “Armored” shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.

² “Natural/Semi-Natural” shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 7. In-water structures in the Residential – M/H environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square-feet)
4952	42	145,571 148,365 ft ² 3.41 acres

2.3 Urban Conservancy

Approximately 7 percent of the City’s shoreline jurisdiction is in the Urban Conservancy environment. Results from Kirkland’s Shoreline Analysis Report (The Watershed Company 2006) show that the Urban Conservancy environment contains areas rated at all three levels of shoreline ecological function (Low, Medium, and High). The area just west of the Juanita Beach Park swimming beach is rated as High. Kiwanis Park, Waverly Park, ~~and the Lake Avenue West Street-end Park,~~ and O.O. Denny Park are each rated as Medium. Finally, the parks/open spaces located south of Marina Park and north of the Yarrow Bay Wetlands are rated as Poor/Low. These shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.3.1 Existing Land Use

The Urban Conservancy environment is comprised entirely of City-owned parks and street-ends designated as Park/Open Space per the City’s Comprehensive Plan, as well as O.O. Denny Park which is owned by the City of Seattle and managed by the Finn Hill Park and Recreation District. The land area contains approximately 23-19 percent impervious surface. The existing median primary structure setback in the Urban Conservancy environment in the City is 31 feet, and the mean is 37 feet (see Figures 3a-f in Appendix B). In the annexation area, O.O. Denny Park has its closest waterfront structure at 189 feet. There are 14-15 parcels in the Urban Conservancy environment, 10-11 of which abut the water. Nine lots are vacant (likely undeveloped street-ends or parks), including six waterfront lots (see Figure 2 in Appendix B).

2.3.2 Parks and Open Space/Public Access

The ~~City~~ parks listed below provide public access to Lake Washington, as well as provide opportunities for water-dependent, water-related, and water-enjoyment recreational uses.

- Houghton Beach Park
- Marsh Park

- Settler’s Landing
- David Brink Park
- Street-end Park
- Lake Avenue West Street-end Park
- Kiwanis Park
- Waverly Beach Park
- Juanita Beach Park
- O.O. Denny Park

The western portion of Juanita Beach Park, containing Juanita Creek and its associated stream buffer, is designated as Urban Conservancy. However, the heavily used beach area is designated as Urban Mixed (see below).

2.3.3 Shoreline Modifications

The Kirkland shoreline in the Urban Conservancy environment has been modified with approximately 60 percent of the shoreline armored (Table 8) (see Figures 7a -7e in the Shoreline Analysis Report) at or near the OHWM and a total of approximately ~~7-16~~ piers per mile (Table 9). As expected, pier density and shoreline armoring along Kirkland’s Urban Conservancy environment is significantly lower than the lake-wide figures.

Table 8. Shoreline armoring in the Urban Conservancy environment.

Shoreline Condition (feet / % of shoreline)	
Armored ¹	Natural / Semi-Natural ²
<u>2,7083,489</u> (60%)	<u>1,8062,293</u> (40%)

- ¹ “Armored” shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.
- ² “Natural/Semi-Natural” shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 9. In-water structures in the Urban Conservancy environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square feet)
18	<u>2416</u>	23,206

2.4 Urban Mixed

Approximately ~~10~~⁷ percent of the City's upland shoreline jurisdiction is in the Urban Mixed environment. Results from Kirkland's Shoreline Analysis Report (The Watershed Company 2006) show that the majority of the Urban Mixed environment contains ~~Poor~~ Low functioning shoreline. However, the majority of Juanita Beach Park and the adjoining multi-family uses to the east are included in an area rated as High functioning. These shoreline analysis results are based on a relative scale of shoreline conditions throughout Kirkland, including the information provided below.

2.4.1 Existing Land Use

The shoreline within the Urban Mixed environment is comprised of a variety of uses including higher-intensity park/open space (relative to Urban Conservancy or Natural parks), some multi-family residential, and commercial. In general, the land area is fully developed, containing approximately 56 percent impervious surface. The Urban Mixed environment contains 40 lots, 15 of which abut the water. Four lots are vacant, including two waterfront lots (see Figure 2 in Appendix B).

The existing median primary structure setback in the Urban Mixed environment is 28 feet from the ordinary high water mark (OHWM) (see Figures 3a-f in Appendix B). However, the median distance from the OHWM to improvements (either paved surfaces or other accessory structures) is approximately 11 feet. Table 10 presents data on existing residential structure setbacks on parcels within the Urban Mixed environment. As Table 10 shows, 4 (31%) of the 13 waterfront parcels have primary structures located less than 25 feet from the OHWM. Of the remaining developed lots, 5 (38%) have primary structures between 25 and 40 feet from OHWM, and 4 (31%) have primary structures greater than 40 feet from OHWM.

Table 10. Existing shoreline primary structure setback data for the Urban Mixed environment.

Measure of Primary Structure Setback	Number of Waterfront Parcels
Total Developed Waterfront Parcels	13
Structures < 25 ft from OHWM	4
Structures 25 - 40 ft. from OHWM	5
Structures > 40 ft from OHWM	4

2.4.2 Parks and Open Space/Public Access

Both Marina Park, located in downtown Kirkland, and the swimming beach at Juanita Beach Park are designated as Urban Mixed.

2.4.3 Shoreline Modifications

The Urban Mixed environment is heavily modified with just over 80 percent of the shoreline armored at or near the OHWM (Table 11) (see Figures 7a-7e in the Shoreline Analysis Report) and a pier density of approximately 14 piers per mile (Table 12). Thus, for Kirkland’s Urban Mixed environment, pier density is lower but shoreline armoring is higher than the lake-wide figures.

Table 11. Shoreline armoring in the Urban Mixed environment.

Shoreline Condition (feet / % of shoreline)	
Armored ¹	Natural / Semi-Natural ²
4,034 (80%)	1,009 (20%)

¹ “Armored” shorelines encompass angular or rounded granite or basalt boulder, concrete, and wood armoring types.

² “Natural/Semi-Natural” shorelines captures those areas that are not solidly armored at the ordinary high water line; they may include some scattered boulders or woody debris at or near the ordinary high water line.

Table 12. In-water structures in the Urban Mixed environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover (square feet)
13	14	157,824

2.5 Natural Environment

Approximately ~~58~~44 percent of the City’s upland shoreline jurisdiction is in the Natural environment. These areas all rate as High for existing shoreline ecological function (The Watershed Company 2006).

2.5.1 Existing Land Use

The shoreline within the Natural environment is predominately park/open space, though there are some privately held undeveloped properties located in both the Yarrow Bay and Juanita Bay wetland complexes. The Natural environment contains only 1 percent impervious surface. There are a number of existing, undeveloped lots located within this environment. The Natural environment contains all or portions of 73 lots, 16 of which abut the water. Forty-one lots are vacant, though many of these are in public ownership. Of those privately held, fourteen lots are vacant, including three waterfront lots (see Figure 2 in Appendix B). However, only one of these lots has the potential for development within shoreline jurisdiction due to critical area restrictions (see Figures 1a and 1d in Appendix B). The remaining lots are either owned by the City,

or are encumbered by associated wetlands but have upland area outside of shoreline jurisdiction that may accommodate new development.

2.5.2 Parks and Open Space/Public Access

Yarrow Bay Park, Juanita Bay Park and their associated wetlands are designated as Natural.

2.5.3 Shoreline Modifications

The Natural environment contains no shoreline armoring at or near the OHWM (see Figures 7a-7e in the Shoreline Analysis Report) and a very low pier density of approximately 1 pier per mile. Two piers are located within Juanita Bay Park. Thus, as expected, pier density and shoreline armoring within Kirkland's Natural environment are both extremely low compared to the lake-wide figures.

2.6 Aquatic Environment

The Aquatic environment encompasses all areas waterward of the ordinary high water mark of Lake Washington contained within the City limits. The purpose of this designation is to protect, restore, and manage the unique characteristics and resources of the areas waterward of the ordinary high water mark. Regulations and performance standards that apply to individual uses and developments are evaluated under the above designations and uses.

2.7 Biological Resources and Critical Areas

With the exception of the wetlands and shoreline areas within and adjacent to Yarrow Bay and Juanita Bay, Kirkland's shoreline zone itself is generally deficient in high-quality biological resources and critical areas, primarily because of the extensive residential and commercial development and their associated shoreline modifications. Outside of the shoreline associated wetlands, the highest functioning shoreline areas are primarily along city-owned parks and open spaces. Although not specifically separated as a distinct unit during the shoreline inventory, Kiwanis Park represents the highest quality City-owned shoreline, in terms of existing ecological functions, not including the Yarrow Bay and Juanita Bay wetland areas. Many of the parks in both the Urban Conservancy and Urban Mixed environment have the potential for the improvement of ecological functions.

There are a number of streams along the Kirkland shoreline that discharge into Lake Washington. Several, including Juanita Creek, Forbes Creek, Carillon Creek, ~~and Yarrow Creek, Denny Creek, and Champagne Creek,~~ are known to support fish usesalmonids. ~~Adult salmon have been documented in each of these creeks.~~ Many of the smaller tributaries to Lake Washington, including streams that flow seasonally or during periods of heavy rains, are piped at some point and discharge directly to Lake Washington via a closed system.

3 ANTICIPATED DEVELOPMENT AND POTENTIAL EFFECT ON FUNCTION

3.1 Patterns of Shoreline Activity

The City reviewed its shoreline permitting records for the 16 years between 1991 and 2006 (Table 13). Several projects had multiple components and obtained multiple permits; the available permit summary did not consistently indicate which permit type was granted so there are a number of “unknowns.” This summary underestimates shoreline activity, as not all shoreline exemptions were tracked. This summary does not include the annexation area.

Table 13. Shoreline Permit History in the Incorporated City of Kirkland Since 1991.

Year	# of Cases	Pier		Bulkhead Mod.	Upland Structure	Upland Park Mod.	Utilities	Permit Type			
		Extension/ Mod.	New/ Replacement					SDP	SCUP	Variance	Unknown
1991	1				1					1	
1992	5	2	1	1	1	1	1	4	1	1	1
1993	4		3		1			3		1	
1994	3	1	1	1	1			1	1		1
1995	9	1	1		4	1	2	4			5
1996	4		2	1	1		1	2		1	1
1997	4	2			1		1	4			
1998	5	1	1	1	4			3		3	1
1999	6	1	4		1			4		1	1
2000	4	1	1		1		1	2			2
2001	3				3					1	2
2002	2				1		1			1	1
2003	2				2						2
2004	5		2		2		1	3			2
2005	4	1	1	1		1		1			3
2006	3	3			1			1			
TOTAL	64	13	17	5	25	3	8	32	2	9	22

SDP = Shoreline Substantial Development, SCUP = Shoreline Conditional Use Permit

In addition, a number of shoreline exemptions, not included in the summary table above, have been issued for pier repairs, pier replacements, pier extensions, and

bulkhead construction or repair meeting the standards contained in WAC 173-27-040. Also, the numbers below do not include single-family residential development that met the exemption standard contained in WAC 173-27-040.

No trends in shoreline activity or permit type are apparent. Over the past 16 years, 26 percent of permitted shoreline projects included a new or replacement pier component, 20 percent a pier extension or modification component, 8 percent a bulkhead modification component, 39 percent an upland structure component (for new commercial or residential construction, setback variances, etc.), 13 percent a utilities component (sewer lines, sewer lift stations, storm drain outfall dredging, etc.), and 5 percent a parks component (trails, hard landscape elements, benches, etc.). Case notes indicate that pier proposals began to include impact minimization measures, such as deck grating and narrow walkways, prescribed by state and federal agencies in 2000. Although not indicated, it is likely that several of the 1999 pier proposals included minimization measures as well, consistent with the listing of chinook salmon and bull trout as Threatened under the federal Endangered Species Act in 1999.

As indicated by the data presented above, new or replacement piers were very infrequent. Pier extensions or modifications were even less common. Bulkhead modifications were also extremely low, with only five applications during the 16 year review period. However, it is expected that the number of these types of proposals, except for new piers, will exceed these rates in coming years as the existing structures and modifications reach their life expectancy.

3.2 Residential Development (Residential – L and Residential M/H)

With the possible exception of limited additional residential lands being acquired for public open space (in the Natural environment of Yarrow Bay wetland complex), residential uses are limited to the Residential –L and Residential – M/H environments. While the single-family nature of Residential – L is not expected to change over the next 20 years, the mix of single- and multi-family developments may change and new development will occur in the Residential – M/H environment. On the whole, a substantial amount of re-builds and remodels are anticipated in both environments.

Typically, development of vacant lots into residential uses would result in replacement of pervious, vegetated areas with impervious surfaces and a landscape management regime that often includes chemical treatments of lawn and landscaping along with increased exterior lighting. These actions can have multiple effects on shoreline ecological functions, including:

1. Increase in surface water runoff due to reduced infiltration area and increased impervious surfaces, which can lead to excessive soil erosion and subsequent in-lake sediment deposition. This can affect the following:

Hydrologic Functions

Storing water and sediment

2. Reduction in ability of site to improve quality of waters passing through the untreated vegetation and healthy soils. This can affect the following:

Hydrologic Functions

Removing excess nutrients and toxic compounds

Vegetation Functions

Water quality improvement

3. Potential contamination of surface water from chemical and nutrient applications. This can affect the following:

Vegetation Functions

Water quality improvement

4. Elimination of upland habitat occupied by wildlife that use riparian areas. This can affect the following:

Habitat Functions

Physical space and conditions for life history

Food production and delivery

5. Lighting is known to affect both fish and wildlife in nearshore areas. This can affect the following:

Habitat Functions

Physical space and conditions for life history

Expansions and remodels of existing residences are likely to occur relatively frequently during the future. Many of these activities would not change the baseline condition of ecological function, although expansions that increase impervious surfaces may occur. Runoff from most expanded residences is clean, however, and water quantity is not an issue in the Lake Washington environment. The significance of impervious surfaces on a lake environment where water quantity is not really a factor is very diminished given the residential uses. Single-family or multi-family homes generally have clean roof and sidewalk runoff, and driveways whether 50 square feet or 5,000 square feet are typically pollution-generating surfaces only to the extent that vehicle-related pollutants are deposited on them. Most single-family homes have between two and four vehicles, regardless of the driveway area and thus the correlation between driveway area and amount of pollution is not strong. However, improperly managed runoff during and post construction could increase erosion, and could cause sediments and pollutants to enter the lake.

As previously mentioned, ~~two-24~~ lots in Residential - L are vacant, including ~~one-13~~ waterfront lots (see Figure 2 in Appendix B). However, one of the waterfront lots is owned by a private utility company and the remaining "vacant" waterfront lots are in the middle stages of re-development (meaning that ecological impacts have already occurred as a result of residential development and the redevelopment is not likely to have additional impacts). ~~and the upland lot has no development potential.~~

In the Residential – L environment, there are ~~four~~eight lots that have capacity for further subdivision to create additional building lots, with a total capacity of approximately ~~17~~22 lots. In addition, in the Residential – L environment, approximately ~~54~~128 waterfront lots (roughly ~~56~~41 percent) are considered to have strong redevelopment potential (see Figures 1a-d in Appendix B). Redevelopment potential was based on assumptions made for each lot related to age of the home and the ratio of improvement value to land value. As mentioned above, the existing median primary structure setback in the Residential – L environment (original City limits and annexation area combined) is ~~43~~45 feet.

For the original City limits, ~~T~~the SMP proposes a residential setback of 30 percent of the proposed lot depth, with a 30-foot minimum and a 60-foot maximum (see Figures 6a-d in Appendix B), except for an area along Lake Avenue West south of the Lake Avenue West street end park. The latter area would have a setback based on the average of the adjacent properties, but no less than 15 feet (see Figure 4 in Appendix B). The recently annexed area has multiple setback schemes assigned to specific areas, listed below:

- 30% average parcel depth, 30-foot minimum and 80-foot maximum
- 25% average parcel depth, 30-foot minimum and 60-foot maximum
- 25% average parcel depth, 30-foot minimum and 80-foot maximum
- 20% average parcel depth, 30-foot minimum and 60-foot maximum
- 20% average parcel depth, 30-foot minimum and 80-foot maximum
- 20% average parcel depth, 25-foot minimum
- 15% average parcel depth, 15-foot minimum
- 15 feet

Even with the establishment of area-specific setback schemes designed to dually minimize non-conformity as well as environmental impacts, the degree of non-conformity that would result from these setback strategies is still slightly higher in the annexation area than in the original City limits area. Accordingly, non-conforming residences in the annexation area could obtain an additional 5 percent setback reduction when paired with an additional 5-foot-depth of shoreline buffer plantings. In no case could the setback be reduced below 15 percent of the average parcel depth or the absolute minimums.

Based on the City’s analysis of redevelopment potential, the resultant median setback in the Residential – L environment would be reduced from approximately 45 feet to approximately ~~36~~37 feet. This reduction in the median setback results in a conversion of a maximum of ~~1.7~~98.7 acres of space between the primary structure and the OHWM to a greater level of development.

In the Residential – M/H environment, approximately ~~20~~22 waterfront lots (roughly 35% percent, including the vacant lots) and approximately ~~25~~27 overall lots within the shoreline jurisdiction are considered to have strong redevelopment potential (see

Figures 1a-d in Appendix B). Redevelopment potential was based on assumptions made for each lot related to the allowed density permitted in the underlying zone and the ratio of improvement value to land value. Expansion (of structure size as well as number of multi-family dwelling units), redevelopment or alteration to existing developments will occur over time, but the majority of this environment will remain functionally unchanged.

As previously mentioned, five lots are vacant, including four waterfront lots (see Figure 2 in Appendix B). Each of these four lots has potential for new multi-family development. However, two of the lots are already altered. One lot has paved parking that appears to be used by the adjacent lot to the north, and a path to the water's edge with a bulkhead and a pier. The second lot has a substantial overwater structure paralleling the nearshore. All of the lots are narrow, between 25 and 50 feet wide; armored; and sandwiched between developments to the north and south and busy Lake Washington Boulevard/Lake Street South to the east. These lots are mostly well vegetated, with one or more trees each, but several also appear to include substantial patches of Himalayan blackberry. The small size of these low-functioning habitat areas and proximity to intensive development and roadways limits their value.

The existing median primary structure setback in the Residential – M/H environment is 24-25.3 feet. In the original City limits, ~~The~~ SMP proposes a residential setback of 15 percent of the proposed lot depth, with a 25-foot minimum (see Figures 5a-e in Appendix B). In the annexation area, the SMP proposes a residential setback of 25 percent of the proposed lot depth, with a 30-foot minimum and a 60-foot maximum. Based on the City's analysis of redevelopment potential, the resultant median setback in the Residential – M/H environment would be approximately 25.0 feet, ~~with the average dropping from 27 to 21 feet.~~ This minor (0.3 feet) reduction in the average setback results in a conversion of a maximum of 0.74-80 acre of space between the primary structure and the OHWM to a greater level of development.

These conversion numbers ~~are likely an overestimate,~~ both ~~in~~-area and assumed corresponding function, as primary structures are never as wide as the lot. ~~#-The numbers~~ also ~~does~~ not factor in that much of that "lost" space is already occupied by decks, paved surfaces, lawn or other improvements that have reduced or eliminated the function of that space (see Shoreline Vegetation Detail for the Residential – L Environment and Residential M/H in Appendix D). Finally, because of the staggered distribution of lot depths and primary structure locations, some of that space landward of a primary structure currently set back far from the water's edge may be greatly impacted by activities on shallower adjacent lots where the structure is located closer to the water's edge.

However, that space, while perhaps not providing direct habitat to fish and wildlife species, did provide attenuation of exterior and interior lighting with respect to illumination of the water and immediately adjacent shorelands (Rich and Longcore 2006;

Rich and Longcore 2004; Mazur and Beauchamp 2006). To offset the reduction in lighting attenuation, the SMP includes provisions in Section 83.470.4 regarding lighting shielding, direction, levels, height, and other standards.

To address the other less direct losses to shoreline function resulting from reduction in the space between primary structures and their attendant activities and the water's edge, the SMP contains a native landscape standard in SMP 83.400 (Tree Management and Vegetation in Shoreline Setback) that requires native plantings, including trees, in at least 75 percent of the nearshore riparian area located along the water's edge, an average of 10 feet wide in Residential – L and 15 feet wide in Residential – M/H. When a development proposal includes an increase of at least 10 percent in gross floor area of any structure located in shoreline jurisdiction or an alteration to any structure(s) in shoreline jurisdiction, the cost of which exceeds 50 percent of the replacement cost of the structure(s), the development must come into conformity with the landscape standard. Based on the anticipated level of redevelopment in the Residential – L and Residential – M/H environments (equating to loss of approximately 9.5 acres of space), approximately 0.853.76 acres of native vegetation, including trees, will be installed along the water's edge.

Although it is difficult to estimate how many property owners might take advantage of different buffer reduction options, those that do will be required to implement one or more additional ecological function improvements on the site. The amount of reduction allowed for a given improvement is at least proportional to the amount of function lost by allowing the reduction. Further, several of the improvements, such as shoreline armoring removal, would have positive effects on shoreline processes, not just improvements in function.

3.3 Higher Intensity Development (Urban Mixed)

Typically, development of vacant lots would result in replacement of pervious, vegetated areas with impervious surfaces and a landscape management regime that often includes chemical treatments of landscaping along with increased exterior lighting. These actions in the Urban Mixed environment would have identical impacts to those in the Residential – L and M/H environments as discussed above in Section 3.2.

In the Urban Mixed environment, approximately 11 lots in the Urban Mixed environment have additional capacity for development within the shoreline jurisdiction. Most of this potential redevelopment would occur in areas that are separated from the waterfront by major roads or intervening properties. Along the waterfront area, which contained 15 existing lots, only two (roughly 13% percent) are considered to have strong redevelopment potential (see Figures 1a-d in Appendix B). One of the properties has redeveloped since the inventory was completed (Yarrow Bay Marina). The redevelopment resulted in a net increase in shoreline functions, as buildings were

relocated back from the shoreline and native plantings were installed along a portion of the shoreline riparian area. Lighting was also shielded in order to limit impacts.

Redevelopment potential was based on assumptions made for each lot related to the allowed intensity of uses, the allowed density permitted in the underlying zone, and the ratio of improvement value to land value. The majority of this environment will functionally remain unchanged, particularly as a large portion of Urban Mixed is occupied by Carillon, which has already been fully developed consistent with its Master Plan. The other major Urban Mixed areas include the core downtown area, including the more intensely utilized Marina Park, and portions of Juanita Beach Park and some adjacent commercial or multi-family developments. Juanita Beach Park was not identified as having “redevelopment potential,” but it is actually the subject of a Master Plan that will effectively result in the next 20 years in ecological function improvements. Wetlands and their buffers will be enhanced, and other vegetation improvements will be made.

As mentioned above, the existing median setback in the Urban Mixed environment is 29 feet and the average setback is 38 feet. The SMP proposes a setback of 15 percent of the lot depth, with a 25-foot minimum, except for the Carillon Master Plan area which has a 20-foot setback (see Figures 1a-d in Appendix B). Based on the City’s analysis of redevelopment potential, the resultant median setback in the Urban Mixed environment would remain 29 feet, with a slight increase in the average setback to 40 feet. Maintenance of the median setback and a slight increase in the average results in maintenance of the acres of space between the primary structure and the OHWM. As previously mentioned, two waterfront lots in Urban Mixed are vacant; however, these lots are located entirely waterward of the OHWM, and as such have no development potential.

Ecological functions are not expected to change, except to improve, as a result of upland development. However, similar protective provisions that apply to residential development also apply to developments in the Urban Mixed environment. These include restrictions on lighting and a landscape standard, which may result in approximately 0.04 acres of native shoreline vegetation at the redevelopment lots. Further, developments in the Urban Mixed environment may also take advantage of setback reduction incentives that would yield function and process improvements.

3.4 Parks and Open Space Development (Natural and Urban Conservancy)

The Natural environment contains 73 lots (partially and full), 16 of which are waterfront lots. Forty-one of the lots are vacant (open space, parks, critical areas), and 13 of those abut the water’s edge. In the Urban Conservancy environment, there are only ~~14~~15 lots and ~~10~~11 of those abut the water. Six vacant lots abut the water, and three vacant lots are not contiguous with the water. Although the total number of vacant lots is high in

these environments, the actual potential for new and redevelopment in the Natural and Urban Conservancy environments is extremely limited (see Figures 1a-d in Appendix B). First, because most of these properties are public park lands, and second, because many of the remaining properties are completely or substantially encumbered by critical areas (primarily wetlands). The lots in the Urban Conservancy environment are entirely public park property (owned by City of Kirkland or City of Seattle), and no major developments are anticipated. In the Natural environment, the City does not anticipate any new development. On many of the parcels, the portions of the parcel in shoreline jurisdiction are wetland. However, most of these parcels are anticipated to have sufficient upland area (outside of shoreline jurisdiction) to accommodate a single-family house.

Most of the anticipated activities within the City's Natural and Urban Conservancy parks would include routine maintenance and upkeep of existing facilities or restoration elements – replacement of pier decking with grating, removal or enhancement of shoreline armoring, increases in native shoreline vegetation, and restoration of Juanita Creek within shoreline jurisdiction, for example.

In shoreline jurisdiction, ecological functions are not expected to change, except to improve, as a result of shoreland activities.

3.5 Overwater Structures

Piers can adversely affect ecological functions and habitat in the following ways:

1. Alter patterns of natural light transmission to the water column, affecting macrophyte growth and altering habitat for and behavior of aquatic organisms, including juvenile salmon. This can affect the following:
 - Habitat Functions**
 - Physical space and conditions for life history*
 - Food production and delivery*
2. Interfere with long-shore movement of sediments, altering substrate composition and development. This can affect the following:
 - Hydrologic Functions**
 - Attenuating wave energy*
3. Contribute to contamination of surface water from chemical treatments of structural materials. This can affect the following:
 - Hydrologic Functions**
 - Removing excess nutrients and toxic compounds*
4. Pier lighting is known to affect fish movement and predation. This can affect the following:
 - Habitat Functions**
 - Physical space and conditions for life*

Overwater structures encompass a variety of uses, from in-water structures, such as fixed-pile piers and floating docks, to moorage covers, such as canopies and boathouses with associated boatlifts. This discussion does not include overwater multi-family residential structures. It is difficult to determine exactly how many waterfront properties do not have a pier or pier access, particularly as many piers are located near property lines and thus it is possible that those may be shared with the adjacent property. However, Table 14 provides some indication of the potential for new piers based on existing conditions and trends.

Table 14. Anticipated Quantity of New Piers in the City of Kirkland by Environment Designation.

Shoreline Environment	# of Lots with Pier(s)	# of Lots without Pier(s)	Probable New Piers
Residential – L	90-204 (with approximately 2-11 existing joint piers)	9-32 (including three waterfront street ends)	6-16 (15 single-family and 1 joint-use)
Residential – M/H	45-48 (with approximately 3 existing joint piers)	44-12 (including one waterfront street end)	5-6 (assume community)
Urban Mixed	10 (includes public piers)	3	1
Urban Conservancy	5 (at park, rather than a single lot and includes public piers)	2 (including community-owned property near Juanita Beach)	0
			1222

Under the proposed SMP, new piers will be smaller and narrower than piers approved under the original SMP. New and replacement piers will also include light-transmitting decking material, which will reduce the impact of the overwater cover. Nevertheless, if new piers were the only pier-related activity, ecological function would still decline. The decline would be due to an unavoidable net increase in in-water structures and overwater cover that can be minimized but not entirely mitigated.

However, pier repair and pier maintenance activities are more common, and it is anticipated that pier replacement proposals may become even more common as existing piers degrade or do not meet the property owner’s needs in their current configuration or location. Under the proposed SMP, replacement piers are considered new moorage structures and must meet the dimensional criteria for new private piers or be otherwise approved by State and Federal agencies (Washington Department of Fish and Wildlife and the U.S. Army Corps of Engineers) (KZC 83.270.5). Any pier repair which involves the replacement of more than ~~60-50~~ percent of the pier support piles along with pier decking or sub-structure ~~over a five-year period~~ must also meet the dimensional criteria of new private piers. Pier repairs (KZC 83.270.7) would include decking and/or sub-

structure replacement and up to 50 percent pile replacement. Repairs which involve full deck replacement must install grated surfaces within the nearshore 30 feet.

A summary of the quantitative analysis is provided below (Table 15, full analysis provided in Appendix C), based on City trends and assumptions. Based on the trends and assumptions made regarding new piers, pier replacement, pier repairs, and pier additions, the total area of effective¹ overwater cover would decline by at least 4.25.4 percent over a 20-year time period. Additional reductions in overwater cover may be realized as several parcels appear to have more than one pier. If those parcels propose major repair or replacement of their existing primary pier, the secondary over-water structures will be removed.

Table 15. Summary of Pier Analysis

Existing Overwater Coverage	
Total existing overwater coverage - single-family	<u>272,31393,384</u>
Total existing overwater coverage - multi-family	<u>62,66159,867</u>
Total existing overwater coverage - commercial	<u>133,516433,546</u>
Total existing overwater coverage - public	<u>32,21832,248</u>
Total existing overwater coverage (square footage)	<u>500,708348,985</u>
Effective Overwater Coverage at Buildout	
Total overwater cover at buildout - single-family	<u>249,92585,908</u>
Total overwater cover at buildout - multi-family	<u>69,72765,747</u>
Total overwater cover at buildout - commercial	<u>133,199433,199</u>
Total overwater cover at buildout - public	<u>20,82020,820</u>
Total effective overwater coverage at buildout (square footage)	<u>473,671305,675</u>
Change in Effective Overwater Coverage at Buildout	
Net change in overwater cover - single-family	<u>-22,388-7,476</u>
Net change in overwater cover - multi-family	<u>7,0665,880</u>
Net change in overwater cover - commercial	<u>-317-347</u>
Net change in overwater cover - public	<u>-11,398-11,398</u>
TOTAL CHANGE IN EFFECTIVE OVERWATER COVER AT BUILDOUT	<u>-27,037-13,310</u>
PERCENTAGE DECREASE IN OVERWATER COVER AT BUILDOUT	<u>-5.4%-4.2%</u>

The proposed regulations (SMP 83.270 and 83.280) have specifically been crafted to avoid and minimize the following specific potential impacts as outlined below:

1. Growth of aquatic vegetation: Overwater cover is minimized through size and height restrictions for new piers (SMP 83.270(4) and 83.280(5)), restricting size of

¹ Note: "Effective" overwater cover is a measure of the actual solid footprint that shades the water, rather than the structure's total footprint. Use of grated decking with a minimum of 40% open space reduces the adverse impacts of the overwater structure, even though the traditional structure footprint may increase.

- replacement structures (SMP 83.270(5) and 83.280(8)), and requiring grated decking (SMP 83.270 and SMP 83.280).
2. Juvenile salmon migration: Impacts to juvenile salmon migration are mitigated via the same provisions listed under #1 above. Additionally, new piers must be mitigated through the addition of shoreline vegetation (SMP 83.270(4)(g) and SMP 83.280(7)).
 3. Sediment movement. Piles and floats are restricted in the nearshore area (SMP 83.270(4) and SMP 83.280(5)). The use of jetties or groins are prohibited in most environments, except they are allowed only with a Conditional Use Permit in the Urban Mixed and Aquatic environments unless they are part of a restoration project (SMP 83.170).
 4. Chemical contamination: Piers and other structures shall be constructed of materials that will not adversely affect water quality (SMP 83.270(5) and SMP 83.280(5)).
 5. External lighting impacts: Placement and direction of external lighting is restricted to minimize impacts (SMP 83.470).

3.6 Shoreline Stabilization

Bulkheads typically have the following effects on ecological functions:

1. Reduction in nearshore habitat quality for juvenile salmonids and other aquatic organisms. Specifically, shoreline complexity and emergent vegetation that provides forage and cover may be reduced or eliminated. Elimination of shallow-water habitat may also increase vulnerability of juvenile salmonids to aquatic predators. This can affect the following:
 - Habitat Functions**
 - Physical space and conditions for life history*
 - Food production and delivery*
2. Reduction of natural sediment recruitment from the shoreline. This recruitment is necessary to replenish substrate and preserve shallow water conditions. This can affect the following:
 - Habitat Functions**
 - Physical space and conditions for life history*
3. Increase in wave energy at the shoreline if shallow water is eliminated, resulting in increased nearshore turbulence that can be disruptive to juvenile fish and other organisms. This can affect the following:
 - Hydrologic Functions**
 - Attenuating wave energy*
 - Habitat Functions**

Physical space and conditions for life history

Repairs and replacements of existing bulkheads perpetuate those conditions. There have been no new bulkhead permit applications, and only five bulkhead modification permits issued in the last 16 years. Future proposals are likely to be bulkhead repairs and replacements rather than new bulkheads.

The updated SMP states that new shoreline stabilization would only be allowed when “conclusive evidence, documented by a geotechnical analysis, is provided that the structure is in danger from shoreline erosion caused by waves...” It must be demonstrated in a study prepared by a qualified professional that the proposed stabilization is the least harmful method to the environment. Replacement bulkheads must be installed in the same location as the existing bulkhead, or farther landward, and must also demonstrate some level of need for a hardened shoreline stabilization measure. Under no circumstances would a replacement bulkhead be allowed to encroach farther waterward. Finally, all shoreline stabilization and modification proposals must avoid impacts to the maximum extent practicable; use the “softest” stabilization approach feasible; and, when impacts are unavoidable, mitigate those impacts to achieve no net loss of ecological functions. Independent of regulations by other regulatory agencies, the proposed SMP ensures that shoreline stabilization projects will not degrade the baseline condition. Further, the proposed SMP includes incentives for the removal or function enhancement of existing bulkheads in exchange for buffer reduction.

1. The proposed regulations (**SMP 83.400**), as an incentive option in exchange for a shoreline setback reduction (**SMP 83.380**), as well as new pier proposals (**SMP 83.270(4) and SMP 83.280(7)**). Implementation of soft shoreline stabilization techniques (defined in **SMP 83.80**) will also improve shoreline complexity (**SMP 83.300**).
2. Lack of wave attenuation: Wave attenuation should be improved through the implementation of soft shoreline stabilization techniques as identified in #1 above. Some fill waterward of OHWM may occur to enhance nearshore functions (**SMP 83.300**).

Over time, the combined effects of the City’s proposed SMP will likely result in a reduction over time of the net amount of hardened shoreline at the ordinary high water mark and an increase in shallow-water habitat.

4 PROTECTIVE SMP PROVISIONS

4.1 Environment Designations

The first line of protection of the City's shorelines is the environment designation assignments. The Natural environment, which comprises ~~nearly approximately 60~~ 44 percent of the total shoreline area, is the most restrictive, but closely followed by the Urban Conservancy environments. In some respects, the Residential – L, Residential – M/H and Urban Mixed environments are as, or more, restrictive than the other two environments.

Table 16 below identifies the prohibited and allowed uses and modifications in each of the shoreline environments, and clearly shows a hierarchy of higher-impacting uses and modifications being allowed in the already highly altered shoreline environments. This strategy helps to minimize cumulative impacts by concentrating development activity in lower functioning areas that are not likely to experience function degradation with incremental increases in new development.

Table 16. Shoreline Use and Activities Matrix

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
SHORELINE USE						
Resource Land Uses						
Agriculture	X	X	X	X	X	X
Aquaculture	X	X	X	X	X	X
Forest practices	X	X	X	X	X	X
Mining	X	X	X	X	X	X
Commercial Uses						
Water-dependent uses						
Float plane landing and mooring facilities ²	X	X	X	X	CU	See adjacent upland environments
Water-related, water-enjoyment commercial uses						
Any water-oriented Retail Establishment other than those specifically listed in this chart, selling goods or providing services.	X	SD ³	X	X	SD	X
Retail Establishment providing new or used Boat Sales or Rental	X	SD ³	X	CU ^{4,6}	SD ⁵	See adjacent upland environments

² Limited to water-based aircraft facilities for air charter operations.

³ Permitted as an accessory use to a Public Park.

⁴ 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.

⁵ Permitted in the Juanita Business District or as an accessory use to a marina.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	Natural	Urban Conservancy	Residential - L	Residential - M/H	Urban Mixed	Aquatic
Retail establishment providing gas and oil sale for boats	X	X	X	CU ^{4,6}	CU ⁶	See adjacent upland environments
Retail establishment providing boat and motor repair and service	X	X	X	CU ^{4,6}	CU ⁶	X
Restaurant or Tavern ⁷	X	X	X	CU ⁴	SD	X
Concession Stand	X	SD ³	X	X	SD ³	X
Entertainment or cultural facility	X	CU ⁸	X	X	SD	X
Hotel or Motel	X	X	X	CU ⁹ /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 ¹⁰	X
Office Uses	X	X	X	X	SD ¹⁰	X
Neighborhood-oriented Retail Establishment	X	X	X	CU ¹¹	SD ¹⁰	X
Private Lodge or Club	X	X	X	X	SD ¹⁰	X
Vehicle Service Station	X	X	X	X	X	X

⁶ Accessory to a marina only.

⁷ Drive-in or drive-through facilities are prohibited.

⁸ Use must be open to the general public.

⁹ Permitted in Planned Area 3B established in the Lakeview Neighborhood Plan only.

¹⁰ 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.

¹¹ 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	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
CU = Conditional Use						
X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit						
Automotive Service Center	X	X	X	X	X	X
Dry land boat storage	X	X	X	X	X	X
Industrial Uses						
Water-dependent uses	X	X	X	X	X	See adjacent upland environments
Water-related uses	X	X	X	X	X	X
Nonwater-oriented uses	X	X	X	X	X	X
Recreational Uses						
Water-dependent uses						
Marina ¹²	X	CU	X	SD	SD	See adjacent upland environments
Piers, docks, boat lifts and canopies serving Detached Dwelling Unit ¹²	X	X	SD	SD	SD ¹⁶	
Piers, docks, boat lifts and canopies serving Detached, Attached or Stacked Dwelling Units ¹²	X	X	X	SD	SD	
Float	X	SD ³	X	X	SD ³	
Tour Boat Facility	X	X	X	X	SD ¹³	
Moorage buoy ¹²	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	

¹² No boat moored in or off the shoreline of Kirkland shall be used as a place of habitation.

¹³ Permitted as an accessory use to a Marina or Public Park only.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
Boat houses or other covered moorage not specifically listed	X	X	X	X	X	
Water-related, water-enjoyment uses						
Any water-oriented recreational development other than those specifically listed in this chart	X	CU	CU	CU	SD	X
Other Public Park Improvements ¹⁴	CU	SD	SD	SD	SD	X
Public Access Facility	SD ¹⁵	SD	SD	SD	SD	See adjacent upland environments
Nonwater-oriented uses						
Nonwater-oriented recreational development.	X	X	X	X	SD ¹⁰	X
Residential Uses						
Detached dwelling unit	CU	CU	SD	SD	SD ¹⁶	X
Accessory dwelling unit ¹⁷	X	X	SD	SD	SD ¹⁶	X
Detached, Attached or Stacked Dwelling Units	X	X	X	SD	SD	X
Houseboats	X	X	X	X	X	X
Assisted Living Facility ¹⁸	X	X	X	CU	SD	X

¹⁴ This use does not include other public recreational uses or facilities specifically listed in this chart

¹⁵ Limited to trails, viewpoints, interpretative signage and similar passive and low-impact facilities.

¹⁶ Permitted if located south of NE 60th Street only.

¹⁷ One accessory dwelling unit (ADU) is permitted as subordinate to a single-family dwelling

¹⁸ A nursing home use may be permitted as part of an assisted living facility use.

The chart is coded according to the following legend.						
SD = Substantial Development	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
CU = Conditional Use						
X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit						
Convalescent Center or Nursing Home	X	X	X	CU ¹⁹	SD ²⁰	X
Land division	SD ²¹	SD ²¹	SD	SD	SD	X
Institutional Uses						
Float plane landing and mooring facilities (public)	X	X	X	X	CU	See adjacent upland environments
Government Facility	X	SD	SD	SD	SD	X
Community Facility	X	X	X	X	SD	X
Church	X	X	X	CU ¹⁹	SD ²⁰	X
School or Day-Care Center	X	X	X	CU ¹⁹	SD ¹⁰	X
Mini-School or Mini-Day-Care Center	X	X	X	SD ¹⁹	SD ¹⁰	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 ²²	SD ²²	SD ²²	SD ²²	

¹⁹ Permitted if located on the east side of Lake Washington Blvd NE/Lake St S, or the east side of 98th Avenue NE.

²⁰ 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.

²¹ May not create any new lot that would be wholly contained within shoreland area in this shoreline environment.

²² Permitted as an accessory use to a marina or a public park.

The chart is coded according to the following legend.						
SD = Substantial Development	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
CU = Conditional Use						
X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit						
Nonwater-oriented						
Arterials, Collectors, and neighborhood access streets	CU	SD ²³ /CU	SD	SD	SD	X
Helipad	X	X	X	X	X	X
Utilities						
Utility production and processing facilities	X	CU ²⁴	CU ²⁴	CU ²⁴	CU ²⁴	X
Utility transmission facilities	CU ²⁴	SD ²⁴	SD ²⁴	SD ²⁴	SD ²⁴	CU ²⁴
Personal Wireless Service Facilities ²⁵	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 ²⁶ /CU	SD ²⁶ /CU	See adjacent upland environments
Dredging and dredge materials disposal	SD ²⁶ /CU	SD ²⁶ /CU	SD ²⁶ /CU	SD ²⁶ /CU	SD ²⁶ /CU	
Fill waterward of the ordinary high water mark	SD ²⁶ /CU	SD ²⁶ /CU	SD ²⁶ /CU	SD ²⁶ /CU	SD ²⁶ /CU	
Land surface modification	SD ²⁶ /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	

²³ Construction of pedestrian and bicycle facilities only.

²⁴ This use may be allowed provided there is no other feasible route or location.

²⁵ New towers are not permitted.

²⁶ Permitted under a substantial development permit when associated with a restoration or enhancement project.

4.2 General Goals, Policies and Regulations

The SMP contains numerous general policies, with supporting regulations (see SMP), intended to protect the ecological functions of the shoreline, prevent adverse cumulative impacts, and encourage restoration. Some key policies substantially contributing to prevention of adverse cumulative impacts are summarized below.

- **Policy SMP-1.2:** Preserve and enhance the natural and aesthetic quality of important shoreline areas while allowing for reasonable development to meet the needs of the city and its residents.
- **Policy SMP-3.1:** Establish development regulations that avoid, minimize and mitigate impacts to the ecological functions associated with the shoreline zone.
- **Policy SMP-3.2:** Provide adequate setbacks and buffers from the water and ample open space and pervious areas to protect natural features and minimize use conflicts.
- **Policy SMP-3.3:** Require new development or redevelopment to include establishment or preservation of appropriate shoreline vegetation to contribute to the ecological functions of the shoreline area.
- **Policy SMP-3.4:** Incorporate low-impact development practices, where feasible, to reduce the amount of impervious surface area.
- **Policy SMP-3.6:** Limit outdoor lighting levels in the shoreline to the minimum necessary for safe and effective use
- **Policy SMP-3.8:** Encourage the development of joint-use overwater structures, such as joint use piers, to reduce impacts to the shoreline environment
- **Policy SMP-3.9:** Allow variations to development standards that are compatible with surrounding development in order to facilitate restoration opportunities along the shoreline
- **Policy SMP-6.4:** Evaluate new single-family development within areas impacted by critical areas to protect ecological functions and ensure some reasonable economic use for all property within Kirkland's shoreline
- **Policy SMP-10.1:** Assure that shoreline modifications individually and cumulatively do not result in a net loss of ecological functions
- **Policy SMP-10.2:** Limit fill waterward of the ordinary high water mark to support ecological restoration or to facilitate water-dependent or public access uses
- **Policy SMP-10.6:** Limit use of hard structural stabilization measures to reduce shoreline damage
- **Policy SMP-10.7:** Design, locate, size and construct new or replacement structural shoreline protection structures to minimize and mitigate the impact of these activities on the Lake Washington shoreline.
- **Policy SMP-10.9:** Encourage salmon friendly shoreline design during new construction and redevelopment by offering incentives and regulatory flexibility to improve the design of shoreline protective structures and revegetate shorelines.

- **Policy SMP-11.2:** Design and construct new or expanded piers and their accessory components, such as boatlifts and canopies, to minimize impacts on native fish and wildlife and their habitat.
- **Policy SMP-12.1:** Include provisions for shoreline vegetation restoration, fish and wildlife habitat enhancement, and low impact development techniques in projects located within the shoreline, where feasible.
- **Policy SMP-13.1:** Conserve and protect critical areas within the shoreline area from loss or degradation.
- **Policy SMP-15.2:** Prevent impacts to water quality.
- **Policy SMP-16.1:** Plan and design new development or substantial reconstruction to retain or provide shoreline vegetation.
- **Policy SMP-19.1:** Manage natural areas within the shoreline parks to protect and restore ecological functions, values and features.
- **Policy SMP-19.2:** Promote habitat and natural resource conservation through acquisition, preservation, and rehabilitation of important natural areas, and continuing development of interpretive education programs.

5 EFFECT OF OTHER PROGRAMS

5.1 Washington Department of Fish and Wildlife

The Washington Department of Fish and Wildlife (WDFW) has jurisdiction over in- and over-water activities up to and including the ordinary high water mark, as well as any other activities that could “use, divert, obstruct, or change the bed or flow of state waters” (<http://www.wdfw.wa.gov/hab/hpapage.htm>). Practically speaking, these activities in the City of Kirkland include, but are not limited to, installation or modification of shoreline stabilization measures, piers and accessory structures such as boatlifts, culverts, and bridges and footbridges. These types of projects must obtain a Hydraulic Project Approval from WDFW, which will contain conditions intended to prevent damage to fish and other aquatic life, and their habitats. In some cases, the project may be denied if significant impacts would occur that could not be adequately mitigated.

5.2 Washington Department of Ecology

The Washington Department of Ecology may review and condition a variety of project types in Kirkland, including any project that needs a permit from the U.S. Army Corps of Engineers (see below), any project that requires a shoreline Conditional Use Permit or Shoreline Variance, and any project that disturbs more than 1 acre of land. Project types that may trigger Ecology involvement include pier and shoreline modification proposals and wetland or stream modification proposals, among others. Ecology’s three primary goals are to: 1) prevent pollution, 2) clean up pollution, and 3) support sustainable

communities and natural resources (<http://www.ecy.wa.gov/about.html>). Their authority comes from the State Shoreline Management Act, Section 401 of the Federal Clean Water Act, the Federal Water Pollution Control Act, the Federal Coastal Zone Management Act of 1972, the State Environmental Policy Act, the Growth Management Act, and various RCWs and WACs of the State of Washington.

5.3 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers has jurisdiction over any work in or over navigable waters (including Lake Washington) under Section 10 of the Federal Rivers and Harbors Act of 1899, and discharges of dredged or fill material into waters of the United States (including Lake Washington, streams, and non-isolated wetlands) under Section 404 of the Federal Clean Water Act.

As a federal agency, any activity within Corps jurisdiction that could affect species listed under the Federal Endangered Species Act must be consulted on with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. These agencies ensure that the project includes impact minimization and compensation measures for protection of listed species and their habitats. Since salmon were first listed in Puget Sound, the Corps and the other federal agencies have been working closely to streamline the permitting process, particularly for new pier and pier modification projects. The result of those efforts for Lake Washington has culminated in Regional General Permit (RGP) 3 and a Programmatic Biological Evaluation for Bank Stabilization in Lake Washington. As mentioned above, RGP 3 ~~has been~~was the partial basis for the pier dimensional standards included in the proposed Kirkland SMP. [Recent expiration of RGP 3 has led to additional analysis of pier regulation and patterns on Lakes Washington and Lake Sammamish by the U.S. Army Corps of Engineers and National Marine Fisheries Service. As a result, those agencies reviewed Kirkland’s proposed pier regulations and will be using them as a basis for a future programmatic Biological Evaluation, thus streamlining the pier permitting review process for Kirkland residents and other jurisdictions on Lakes Washington or Sammamish that develop similar SMP regulations.](#)

6 RESTORATION OPPORTUNITIES

As discussed above, one of the key objectives that the SMP must address is “no net loss of ecological shoreline functions necessary to sustain shoreline natural resources” (Ecology 2004). However, SMP updates seek not only to maintain conditions, but to improve them:

“...[shoreline master programs] include planning elements that when implemented, serve to improve the overall condition of habitat and resources

within the shoreline area of each city and county (WAC 173-26-201(c)).”

The guidelines state that “master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program” (WAC 173-26-201(2)(f)). Pursuant to that direction, the City has prepared a Shoreline Restoration Plan.

Practically, it is not always feasible for shoreline developments and redevelopments to achieve no net loss at the site scale, particularly for those developments on currently undeveloped properties or a new pier or bulkhead. The Restoration Plan, therefore, can be an important component in making up that difference in ecological function that would otherwise result just from implementation of the SMP. The Restoration Plan represents a long-term vision for restoration that will be implemented over time, resulting in incremental improvement over the existing conditions.

The Shoreline Restoration Plan identifies a number of project-specific opportunities for restoration on both public and private properties inside and outside of shoreline jurisdiction (see Figure 15 in the Final Shoreline Analysis Report), and also identifies ongoing City programs and activities, non-governmental organization programs and activities, and other recommended actions consistent with the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*.

7 ASSESSMENT OF CUMULATIVE IMPACTS

The following table (Table 17) summarizes for each environment designation the existing conditions (Chapter 2 above), anticipated development (Chapter 3 above), relevant Shoreline Master Program (SMP) and other regulatory provisions, and the expected net impact on ecological function. The complete assessment of overwater structure impacts is presented in Section 3.5, organized by pier type rather than environment designation. The discussion of existing conditions is based on the *Final Shoreline Analysis Report* (The Watershed Company 2006), and additional analysis conducted to perform this assessment. The Analysis Report includes a more in-depth discussion of the topics below, as well as information about transportation, stormwater and wastewater utilities, impervious surfaces, and historical/archaeological sites, *among others*.

A distinct discussion of the Aquatic environment designation is not included, as any developments waterward of the OHWM are associated with and discussed under either Section 3.5 above or in the corresponding upland environment designation section.

Table 17. Qualitative Assessment of Cumulative Impacts

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
Residential – L			
<p>This segment is dominated by single-family homes and is almost entirely built out. Nearly the entire shoreline has been altered with a variety of armoring and alteration types, including piers, boatlifts, boathouses, and moorage covers. Approximately 93 percent of all residences already have a pier and the shoreline is approximately 88 percent armored.</p>	<p>FUTURE DEVELOPMENT in the Residential – L environment will likely be restricted to consist of new development (on subdividable lots), completion of new residences on formerly developed "vacant" lots, and remodeled or expanded existing residences, since only two twenty-four vacant lots (2 just under 4% of all shoreline parcels) exist in shoreline jurisdiction, and both have no development potential. 13 of which are waterfront lots. Based on a ratio of land value to structure value and age of existing structure (35+ years old), the City anticipates that approximately 54-128 (56-41 percent) of existing developed lots will likely redevelop.</p> <p>No change in uses is anticipated.</p> <p>FUNCTIONS/PROCESSES IMPACTED: As described in Section 3.2, new and re-development may be accompanied by:</p> <ol style="list-style-type: none"> 1. Impervious surface increases 2. Vegetation removal 3. Chemical contaminant increases 4. External lighting impacts <p>Additional impacts could occur with associated new pier development and shoreline modification; these are cumulatively discussed in Sections 3.5 and 3.6. These impacts may affect:</p> <ol style="list-style-type: none"> 5. Growth of aquatic vegetation 6. Juvenile salmon migration and behavior 7. Sediment movement 8. Chemical contamination 9. External lighting impacts on 	<p>Several facets of the SMP development standards for the Residential – L environment are aimed at minimizing potential impacts to shoreline ecological functions that are discussed in Sections 3.2, 3.5, and 3.6. Residential setbacks are one of the key components to assess overall impacts to ecological function as they relate to many of the items listed below. Structure setbacks are regulated under SMP 83.180 and SMP 83.380. Under these scenarios and an anticipated redevelopment of up to 54-128 lots, the median residential setback would change from 43-45 feet to 36-37 feet.</p> <ol style="list-style-type: none"> 1. <i>Impervious surface increases</i> No change in impervious surface requirements is proposed under the new SMP. However, with the anticipated level of redevelopment, expansion of impervious surfaces is anticipated. Based on the 54-128 lot redevelopment potential mentioned above, approximately 4.798.7 acres of land area between existing primary structures and the water's edge would become impervious while 0.552.9 acres of nearshore area would be revegetated with native plants. [See Section 3.2 for discussion of why 8.7 acres is an overestimate]. The proposed SMP requires that all new and redeveloped lots include provisions to control stormwater runoff which will minimize erosion and sediment and pollutant delivery (SMP 83.480). Additional restrictions may be chosen by applicants reducing their setbacks, such as inclusion of biofiltration/infiltration mechanisms and use of pervious material (SMP 83.380). 2. <i>Vegetation Removal</i> Retention of existing vegetation is regulated by SMP 83.400 which requires applicants to plant at least 75 percent of the nearshore area with native vegetation. Removal of 	<p>Other Regulatory Programs: Any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW, the U.S. Army Corps of Engineers (Corps), and/or Ecology. Each of these agencies is charged with regulating and/or protecting streams, lakes, and wetlands, and would impose certain design or mitigation requirements on applicants. Due to Endangered Species Act consultation requirements with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, the Corps has developed recommendations to minimize project impacts. These include Regional General Permit 3 (RGP-3) for overwater structures (which will soon be replaced by a Programmatic Biological Evaluation that covers overwater structures consistent with Kirkland's SMP regulations) and a Programmatic Biological Evaluation for shoreline stabilization. WDFW also follows similar design standards as the Corps and the City of Kirkland has included many of these standards within the proposed SMP. These agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts.</p> <p>Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline.</p> <p>Non-Regulatory Restoration Actions Although no specific restoration projects have been identified in the Residential – L environment, the City's Shoreline Restoration Plan does include goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. Examples of specific items include:</p> <ul style="list-style-type: none"> • Encourage salmon friendly shoreline design during new construction or redevelopment • Offer incentives for voluntary removal of bulkheads, beach improvement, riparian revegetation • Encourage low impact development through regulations, incentives, education/training, and demonstration projects • Through grant funding sources, restoration opportunities may be available to multiple contiguous shoreline properties, including residential lots that are interested in improving shoreline function.

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
	<p><i>overwater structures</i> 10. <i>Shoreline complexity</i> 11. <i>Wave attenuation</i></p>	<p>significant trees within the shoreline setback shall be mitigated at a 3:1 <u>varying ratios depending on tree size and type.</u></p> <p>3. <i>Chemical contaminant increases</i> No new development is anticipated, and potential redevelopment is unlikely to result in an increased level of chemical contaminants (pesticides/herbicides etc). Reductions in existing chemical usage may occur with redevelopment if applicants chose to utilize shoreline setback reduction alternatives (SMP 83.380) which implement landscape best management practices and may limit lawn area. Further, under SMP 83.480, developments will need to follow the City's adopted surface water design manual with respect to treatment and stormwater conveyance.</p> <p>4. <i>External lighting impacts</i> Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (SMP 83.470)</p> <p>(Note: items 5-11 addressed in Sections 3.5 and 3.6)</p>	
Residential – M/H			
<p>This segment is almost entirely built out and dominated by multi-family housing with some single-family uses spread throughout. Nearly the entire shoreline has been altered with a variety of armoring and alteration types, including piers, boatlifts, boathouses, and moorage covers. 81 percent of all lots already have a pier and the shoreline is approximately 89 percent armored.</p>	<p>FUTURE DEVELOPMENT in the Residential – M/H environment will likely be restricted to remodeled or expanded single- and multi-family residences since only 4 <u>four</u> vacant lots (7-0.6% <u>percent of total shoreline parcels</u>) exist in shoreline jurisdiction. Based on residential development capacity and a ratio of land value to structure value, the City anticipates that approximately 29-22 <u>(36 percent)</u> of existing waterfront developed lots will likely redevelop.</p> <p>Although some change in use may occur from property to property, no net change in functional uses are anticipated throughout the Residential –</p>	<p>Several facets of the SMP development standards for the Residential – M/H environment are aimed at minimizing potential impacts to shoreline ecological functions that are discussed in sections 3.2, 3.5, and 3.6. Structure setbacks are one of the key components to assess overall impacts to ecological function as they relate to many of the items listed below. Structure setbacks are regulated under SMP 83.180 and SMP 83.380. Under these scenarios and an anticipated redevelopment of up to 29-22 lots, the median setback would increase <u>be reduced</u> from 24-25.3 feet to <u>25.0</u> feet.</p> <p>See discussion above under Residential – L environment for expanded details as to how the SMP Provisions address the following impacts.</p>	<p>Other Regulatory Programs: As described above under the Residential – L environment, any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW, the U.S. Army Corps of Engineers (Corps), and/or Ecology. The Corps would use RGP-3 <u>the upcoming Programmatic (designed to be consistent with Kirkland's regulations)</u> to review small residential pier projects or joint-use proposals involving no more than three residences. Projects which involve larger overwater structures would likely require a Biological Assessment for consultation with the federal Services. The programmatic Biological Evaluation for shoreline stabilization would likely apply to both single- and multi-family property within the City. As mentioned above, these agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts.</p> <p>Stormwater management, as described above under Residential – L environment, would likely minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline.</p> <p>Non-Regulatory Restoration Actions Although no specific restoration projects have been identified in the Residential – M/H environment, the City's Shoreline Restoration Plan does include goals and objectives with an emphasis on public education</p>

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
	<p>M/H environment.</p> <p>FUNCTIONS/PROCESSES IMPACTED: The functions and processes affected by future development within the Residential – M/H environment are very similar to those described above for the Residential – L environment. However, given the existing built out condition (impervious surfaces already total over 54 percent of the total shoreline jurisdiction for Residential –M/H) impacts on ecological functions from future expansion are anticipated to be less. Regardless, development impacts may include:</p> <ol style="list-style-type: none"> 1. <i>Impervious surface increases</i> 2. <i>Vegetation removal</i> 3. <i>Chemical contaminant increases</i> 4. <i>External lighting impacts</i> 5. <i>Growth of aquatic vegetation</i> 6. <i>Juvenile salmon migration and behavior</i> 7. <i>Sediment movement</i> 8. <i>Chemical contamination</i> 9. <i>External lighting impacts on overwater structures</i> 10. <i>Shoreline complexity</i> 11. <i>Wave attenuation</i> 	<ol style="list-style-type: none"> 1. <i>Impervious surface increases</i> No change in impervious surface requirements are proposed under the new SMP. Based on the redevelopment potential mentioned above, approximately 0.74 80 acres of land area between existing primary structures and the water's edge would become impervious while 0.3 acre of nearshore area would be revegetated with native plants. Stormwater provisions are included in SMP 83.480. Additional impact reductions are listed in SMP 83.380. 2. <i>Vegetation Removal</i> Retention of existing vegetation is regulated by SMP 83.400. For the Residential – M/H environment, this also requires an average of 15 feet of riparian vegetation planted from the OHWM (SMP 83.4001(d)(1)). Removal of significant trees in the setback shall be mitigated at a 3:1-varying ratios depending on tree size and type. 3. <i>Chemical contaminant increases</i> Shoreline setback reduction alternatives (SMP 83.380) include landscape best management practices and may limit lawn area. 4. <i>External lighting impacts</i> Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (SMP 83.470). However, several exemptions from the lighting standards are included, such as emergency lighting, public rights-of-way (i.e. trails), and seasonal lighting (SMP 83.470(2)(a)). <p>(Note: items 5-11 addressed in Sections 3.5 and 3.6)</p>	<p>and involvement intended to promote voluntary shoreline enhancement and restoration on private land. See the Residential – L discussion above for examples.</p>
Urban Conservancy			
<p>This segment contains land areas in shoreline jurisdiction generally dominated by City-public parks and open spaces. These areas include: the western portion of Juanita Beach Park, Kiwanis Park,</p>	<p>FUTURE DEVELOPMENT in the Urban Conservancy environment will be very limited. As discussed above in Section 3.4, the "vacant" lots are all public property managed for parks and open space. There will be a number of park</p>	<p>Several facets of the SMP development standards for the Urban Conservancy environment are aimed at minimizing potential impacts to shoreline ecological functions that are discussed in sections 3.4, 3.5, and 3.6. Structure setbacks are one of the key components to</p>	<p>Other Regulatory Programs: Any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW, the U.S. Army Corps of Engineers (Corps), and/or Ecology. Each of these agencies is charged with regulating and/or protecting streams, lakes, and wetlands, and would impose certain design or mitigation requirements on applicants. Due to Endangered Species Act consultation requirements with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, the Corps has developed recommendations to minimize project impacts.</p>

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
<p>Waverly Park, Lake Ave West Street-end Park, Street-end Park, David Brink Park, Settler's Landing, Marsh Park, and Houghton Beach Park, and O.O. Denny Park.</p>	<p>improvements, including implementation of the Juanita Beach Park Master Plan (which includes stream and wetland restoration), repairs to overwater structures (including conversions to grated decking), and enhancements to armored shorelines.</p> <p>No change in uses is anticipated.</p> <p>FUNCTIONS/PROCESSES IMPACTED: The anticipated alterations to parks are expected to alter, in most cases beneficially, the following upland functions.</p> <ol style="list-style-type: none"> 1. Impervious surface 2. Vegetation/habitat <p>Additional impacts could occur with associated overwater structure development and shoreline modification; these are cumulatively discussed in Sections 3.5 and 3.6. These impacts may affect:</p> <ol style="list-style-type: none"> 3. Growth of aquatic vegetation 4. Juvenile salmon migration and behavior 5. Sediment movement 6. Chemical contamination 7. External lighting impacts on overwater structures 8. Shoreline complexity 9. Wave attenuation 	<p>assess overall impacts to ecological function as they relate the items listed below. Structure setbacks are regulated under SMP 83.180 and SMP 83.380. In the Urban Conservancy environment, the SMP establishes that structures and developments should be located outside of shoreline jurisdiction if possible, and otherwise be no less than 60 feet (SMP 83.180.3). As already mentioned, new developments within the parks are not anticipated and redevelopment is not likely to result in structures being located closer to the water's edge than the current condition, so the existing average setback would not change.</p> <p>Several of the parks have streams and wetlands, which have additional protections under SMP 83.500 and SMP 83.510.</p> <ol style="list-style-type: none"> 1. Impervious surface No change in impervious surface requirements are proposed under the new SMP. Based on the redevelopment potential mentioned above, impervious surface areas are not expected to change. 2. Vegetation/Habitat As previously mentioned, many of the activities in the parks are intended to improve ecological functions, and would be conducted voluntarily beyond the SMP requirements for mitigation tied to any development. <p>(Note: items 3-9 addressed in Sections 3.5 and 3.6)</p>	<p>These include Regional General Permit 3 (RGP-3) for overwater structures and a Programmatic Biological Evaluation for shoreline stabilization. WDFW also follows similar design standards as the Corps and the City of Kirkland has included many of these standards within the proposed SMP. These agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts.</p> <p>Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline.</p> <p>Non-Regulatory Restoration Actions The <i>Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan</i> (WRIA 8 Steering Committee 2005) includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet as Project C296 on the "Lake Washington - Tier 1 - Initial Habitat Project List." It is identified as a low-priority project, however, because of its limited benefit to chinook salmon and perceived low feasibility. Nevertheless, the City is currently planning to implement this project, including riparian wetland enhancement, as part of its Juanita Beach Park Master Plan. This activity is described in the Shoreline Restoration Plan.</p> <p><u>Project C300 in the Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan (WRIA 8 Steering Committee 2005) addresses opportunities to reduce shoreline armoring, enhance vegetation, and restore the mouth of Denny Creek in O.O. Denny Park. The Finn Hill Park and Recreation District has been engaged in efforts to implement portions of C300.</u></p> <p>The City's Shoreline Restoration Plan includes goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. See the Residential – L discussion above for examples. In addition, Projects 2, 6-11, and 15-28 in the Shoreline Restoration Plan (see Table 3) are located in and just waterward of the City's Urban Conservancy-designated parks. Invasive vegetation species management, reductions in overwater cover and inwater structure, reductions in shoreline armoring, and improvements in stormwater discharges would improve shoreline processes and ecological functions for fish and wildlife. (note: effects of pier modifications in the Aquatic environment are more fully evaluated in Section 3.5).</p> <p>The City is also planning to resurface all of its public piers with grated decking, not just because of requirements to do so in SMP 83.290(3), but because of other maintenance and public safety benefits.</p> <p>The City's parks are also maintained using Integrated Pest Management (IPM) techniques, which dramatically minimize the amount of chemical treatments that lawn and landscaping require.</p> <p>Other enhancements to the shoreline parks are possible through Capital Improvement Program funds, which help complete shoreline or stream restoration, install new landscaping, and to implement Low Impact Development (LID) practices. Open Space and Park Land Acquisition Grant Match Program, which assists with or provides funding for acquisition of key sites as they become available.</p> <p>The City's Parks Department also has a number of other partnerships or efforts that will likely result in additional improvements to parks that improve ecological function, including Juanita Bay Park Rangers, Eagle Scout/Capstone Projects, and the Youth Tree Education Program.</p>

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
Urban Mixed			
<p>The shoreline within the Urban Mixed environment is comprised of a variety of uses including park/open space, residential, and commercial. In general, the land area is fully developed.</p>	<p>FUTURE DEVELOPMENT in the Urban Mixed environment will likely be restricted to redevelopment of two waterfront properties, and implementation of the Urban Mixed portion of Juanita Beach Park Master Plan. Although some change in use may occur from property to property, no net change in functional uses are anticipated throughout the Urban Mixed environment.</p> <p>FUNCTIONS/PROCESSES IMPACTED: The functions and processes potentially affected by future development within the Urban Mixed environment are very similar to those described above for the Residential – L environment. However, given the existing built out condition (impervious surfaces already total over 56 percent of the total shoreline jurisdiction for Urban Mixed) and the maintenance of the existing setback, impacts on ecological functions from future expansion are anticipated to be less. Regardless, development impacts may include:</p> <ol style="list-style-type: none"> 1. <i>Impervious surface alterations</i> 2. <i>Vegetation alteration</i> 3. <i>Chemical contaminant alterations</i> 4. <i>External lighting impacts</i> 5. <i>Growth of aquatic vegetation</i> 6. <i>Juvenile salmon migration and behavior</i> 7. <i>Sediment movement</i> 8. <i>Chemical contamination</i> 9. <i>External lighting impacts on overwater structures</i> 10. <i>Shoreline complexity</i> 11. <i>Wave attenuation</i> 	<p>Several facets of the SMP development standards for the Urban Mixed environment are aimed at minimizing potential impacts to shoreline ecological functions that are discussed in Sections 3.3, 3.5, and 3.6. Structure setbacks are one of the key components to assess overall impacts to ecological function as they relate to many of the items listed below. Structure setbacks are regulated under SMP 83.180 and SMP 83.380. Under these scenarios and an anticipated redevelopment of up to 2 lots, the median setback would remain the same (~29 feet) and the average setback would actually increase from approximately 38 to approximately 40 feet.</p> <p>See discussion above under Residential – L environment for expanded details as to how the SMP Provisions address the following impacts.</p> <ol style="list-style-type: none"> 1. <i>Impervious surface alterations</i> In the Urban Mixed environment, allowed impervious surface has been slightly decreased for waterfront lots in order to recognize the area devoted to the shoreline riparian planting required under SMP 83.400. Based on the redevelopment potential mentioned above, approximately 0 acres of land area between existing primary structures and the water's edge would become impervious while 0.04 acre of nearshore area would be revegetated with native plants. Stormwater provisions are included in SMP 83.480. Additional impact reductions are listed in SMP 83.380. 2. <i>Vegetation alteration</i> Retention of existing vegetation is regulated by SMP 83.400. For the Urban Mixed environment, this also requires an average of 10 feet of riparian vegetation planted from the OHWM (SMP 83.400(1)(d)(1)). Removal of significant trees in the setback shall be mitigated at a 3:1 ratio. 	<p>Other Regulatory Programs: Any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW, the U.S. Army Corps of Engineers (Corps), and/or Ecology. Each of these agencies is charged with regulating and/or protecting streams, lakes, and wetlands, and would impose certain design or mitigation requirements on applicants. Due to Endangered Species Act consultation requirements with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, the Corps has developed recommendations to minimize project impacts. These include Regional General Permit 3 (RGP-3) for overwater structures and a Programmatic Biological Evaluation for shoreline stabilization. WDFW also follows similar design standards as the Corps and the City of Kirkland has included many of these standards within the proposed SMP. These agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts.</p> <p>Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline.</p> <p>Non-Regulatory Restoration Actions The City's Shoreline Restoration Plan includes goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. See the Residential – L discussion above for examples. In addition, Projects 1 and 12-14 in the Shoreline Restoration Plan (see Table 3) are located in and just waterward of Juanita Beach Park or Marina Park. Reductions in overwater cover and inwater structure and reductions in shoreline armoring would improve shoreline processes and ecological functions for fish and wildlife. (note: effects of pier modifications in the Aquatic environment are more fully evaluated in Section 3.5). The City is also planning to resurface all of its public piers with grated decking, not just because of requirements to do so in SMP 83.290(3), but because of other maintenance and public safety benefits.</p> <p>The City's parks are also maintained using Integrated Pest Management (IPM) techniques, which dramatically minimize the amount of chemical treatments that lawn and landscaping require.</p> <p>Other enhancements to the shoreline parks are possible through Capital Improvement Program funds, which help complete shoreline or stream restoration, install new landscaping, and to implement Low Impact Development (LID) practices.</p>

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
		<p>3. <i>Chemical contaminant increases</i> Shoreline setback reduction alternatives (SMP 83.380) include landscape best management practices and may limit lawn area.</p> <p>4. <i>External lighting impacts</i> Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (SMP 83.470). However, several exemptions from the lighting standards are included, such as emergency lighting, public rights-of-way (i.e. trails), and seasonal lighting (SMP 83.470(2)(a)).</p> <p>(Note: items 5-11 addressed in Sections 3.5 and 3.6)</p>	
Natural			
<p>The shoreline within the Natural environment is entirely park/open space with no existing development, containing only 1 percent impervious surface. It is comprised entirely of the Yarrow Bay wetlands and Juanita Bay Park and Forbes Creek wetland corridors.</p>	<p>FUTURE DEVELOPMENT in the Natural environment will be very limited. As discussed above in Section 3.4, the "vacant" lots are all either public property managed for parks and open space, or are lots highly encumbered (in several cases completely) by wetlands. No change in uses is anticipated.</p> <p>FUNCTIONS/PROCESSES IMPACTED: Activities anticipated to occur within the Natural environment are almost exclusively related to management of invasive vegetation, installation of native plantings, and perhaps some improvements to public trails.</p> <p>1. <i>Vegetation/habitat</i></p>	<p>Several facets of the SMP development standards for the Natural environment are aimed at minimizing potential impacts to shoreline ecological functions that are discussed in Sections 3.4, 3.5, and 3.6 above. Setbacks are not a relevant issue in the Natural environment, as no new structures, other than potentially public trails, will ever be proposed. Most of the Natural environment consists of streams and wetlands, which have additional protections under SMP 83.500 and SMP 83.510.</p> <p>1. <i>Vegetation/Habitat</i> As previously mentioned, many of the activities in the parks are intended to improve ecological functions, and would be conducted voluntarily beyond the SMP requirements for mitigation tied to development.</p>	<p>Other Regulatory Programs: Any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW, the U.S. Army Corps of Engineers (Corps), and/or Ecology. Each of these agencies is charged with regulating and/or protecting streams, lakes, and wetlands, and would impose certain design or mitigation requirements on applicants. Due to Endangered Species Act consultation requirements with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, the Corps has developed recommendations to minimize project impacts. These include Regional General Permit 3 (RGP-3) the upcoming Programmatic Biological Evaluation for overwater structures (based on Kirkland's regulations), and a Programmatic Biological Evaluation for shoreline stabilization. WDFW also follows similar design standards as the Corps and the City of Kirkland has included many of these standards within the proposed SMP. These agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts.</p> <p>Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline.</p> <p>Non-Regulatory Restoration Actions The City's Shoreline Restoration Plan includes goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. See the Residential – L discussion above for examples. In addition, Projects 3-5 and 29 in the Shoreline Restoration Plan (see Table 3) are located in and just waterward of Juanita Bay Park or Yarrow Bay Wetlands. Invasive vegetation species management and possible reductions in overwater cover and inwater structure would improve ecological functions for fish and wildlife. (note: effects of pier modifications in the Aquatic environment are more fully evaluated in Section 3.5).</p> <p>The City's parks are also maintained using Integrated Pest Management (IPM) techniques, which dramatically minimize the amount of chemical treatments that lawn and landscaping require.</p>

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
			<p>Other enhancements to the shoreline parks are possible through Capital Improvement Program funds, which help complete shoreline or stream restoration, install new landscaping, and to implement Low Impact Development (LID) practices. The Open Space and Park Land Acquisition Grant Match Program, which assists with or provides funding for acquisition of key sites as they become available, may be used to purchase additional private parcels located in wetlands associated with Yarrow Bay Park.</p> <p>The City's Parks Department also has a number of other partnerships or efforts that will likely result in additional improvements to parks that improve ecological function, including Juanita Bay Park Rangers, Eagle Scout/Capstone Projects, and the Youth Tree Education Program.</p>

8 NET EFFECT ON ECOLOGICAL FUNCTION

Table 17 above examines development and redevelopment potential by environment designation, except for piers and shoreline armoring which are addressed collectively in Section 3.5 and 3.6. It is clear from Table 17 that the City is already highly developed, and has limited potential for new development on just a few vacant lots. A large number of other vacant lots are encumbered by wetlands and are not expected to be developed, or are actually only noted in the data as currently vacant because they are in the middle of a process of home removal to be followed by home reconstruction. The true vacant (previously undeveloped) lots with potential for new development are vegetated, and even contain a few trees, but much of the vegetation is invasive and the lots are so narrow that their habitat value is quite limited by the proximity of roads and other developments.

Collectively, the redevelopment potential may shift development closer to the water's edge, but the condition of the remaining space will be improved overall by installations of native landscaping and compliance with lighting standards. Further, the allowances for non-structural developments in the setbacks are more limited than the existing condition. In the long term, impervious surfaces currently located in the existing and proposed setbacks may be removed.

The effective overwater coverage (but not the actual footprints) should also decrease over the next 20 years, even with installation of new piers and pier additions. Because of the increased requirements to demonstrate need for new shoreline armoring and the requirements to consider soft solutions for new and replacement shoreline armoring, the City's overall shoreline hardening condition will at worst remain the same, and realistically will improve over time.

Potential for improvement of shoreline ecological functions is currently greatest on City park properties, with substantial conversions of solid to grated decking, installation of native vegetation and removal of invasive vegetation, restoration of wetlands and a stream, and enhancement of currently armored shoreline.

Even without implementation of the Restoration Plan, the proposed Shoreline Master Program should result in maintenance of the current level of ecological function, and possibly even improvements over time. However, when paired with the Restoration Plan, ecological function of the City's Lake Washington shoreline is certain to improve.

Therefore, **no net loss of shoreline ecological functions is anticipated.**

9 REFERENCES

Longcore, T. and C. Rich. 2004. Ecological Light Pollution. *Frontiers in Ecology and the Environment*. 2(4):191-198

Mazur, M. and D. Beauchamp. 2006. Linking piscivory to spatial-temporal distributions of pelagic prey fishes with a visual foraging model. *Journal of Fish Biology*.

Rich, C. and T. Longcore. 2006. *Ecological Consequences of Artificial Night Lighting*. Island Press. Washington.

The Watershed Company. 2006. *Final Shoreline Analysis Report Including Shoreline Inventory and Characterization for the City of Kirkland's Lake Washington Shoreline*. Prepared for City of Kirkland.

[WRIA 8 Steering Committee. 2005. Final Lake Washington/Cedar/Sammamish Watershed \(WRIA 8\) Chinook Salmon Conservation Plan. July 2005.](#)

10 LIST OF ACRONYMS AND ABBREVIATIONS

- Corps U.S. Army Corps of Engineers
- Ecology Washington Department of Ecology
- OHWM..... ordinary high water mark
- SMP Shoreline Master Program
- WDFW..... Washington Department of Fish and Wildlife

APPENDIX A – ENVIRONMENT DESIGNATION MAPS

APPENDIX B – FIGURES

APPENDIX C – PIER ANALYSIS

New Single-Family Overwater Structures

Total # of new single-family piers possible (15 SF at 480 and 1 joint-use at 700)	16
Total square footage estimated for new single-family pier (fully grated)	480
Total square footage estimated for new joint-use pier (fully grated)	700
Total new square footage for new piers	7,900
Total new effective overwater square footage (40% open space)	4,740
Total effective square footage of overwater cover for new single-family piers	4,740

Replacement of Single-Family Overwater Structures

Total # of existing single-family piers	319
Percentage of piers to be replaced	20%
Total # of piers to be replaced	64
Average replacement pier size (assumes piers to be rebuilt at same size as existing, but fully grated)	853
Total square footage fully grated	853
Total square footage of replacement piers (same as existing footage)	54,421
Total replacement square footage with grating	54,421
Effective overwater coverage of replacement piers (40% open space)	32,653
Effective reduction in overwater coverage as result of replacement	21,769

Repair of Single-Family Overwater Structures

Total # of existing single-family structures	319
Percentage of existing piers to be replaced with grated decking in nearshore 30 feet (240 sf/pier)	30%
Total square footage of decking to be replaced with grating	22,968
Effective overwater coverage of replaced decking (40% open space)	13,781
Effective reduction in overwater coverage as result of repair	9,187

Additions to Single-Family Overwater Structures

Percent of existing piers expected to propose additions	10%
Total square footage estimated for new additions (50'x4' for each addition)	6,380
Total square footage fully grated	6,380
Total new effective overwater cover (40% open space)	3,828
Effective increase in overwater coverage for additions	3,828

Total square footage of existing pier	272,313
Reduction of effective overwater cover based on repairs	-9,187
Increase in effective overwater cover based on new piers	4,740
Increase in effective overwater cover based on pier additions	3,828
Reduction in effective overwater cover based on replacements	-21,769

TOTAL FINAL EFFECTIVE OVERWATER COVER 249,925
NET CHANGE IN EFFECTIVE OVERWATER COVER -22,388

Repair of Multi-Family Overwater Structures

Total # of existing multi-family structures	28
Total square footage of structures	62,661
Average square footage of multi-family structures	

	2,238
<u>Percentage of existing piers to be replaced with grated decking in nearshore 30 feet (240 sf/pier)</u>	5%
<u>Total square footage of decking to be replaced with grating</u>	336
<u>Effective overwater coverage of replaced decking (40% open space)</u>	202
<u>Effective reduction in overwater coverage as result of repair</u>	134
<u>New Multi-Family Overwater Structures</u>	
<u>Total # of new multi-family piers possible</u>	6
<u>Total square footage estimated for new community pier</u>	2,000
<u>Total square footage fully grated</u>	2,000
<u>Total new square footage for new piers</u>	12,000
<u>Total new effective overwater square footage (40% open space)</u>	7,200
<u>Total square footage of non-grated section</u>	4,800
<u>Total effective square footage of overwater cover for new multi-family piers</u>	7,200
<u>Total square footage of existing multi-family piers</u>	62,661
<u>Reduction of effective overwater cover based on repairs</u>	-134
<u>Increase in effective overwater cover based on new piers</u>	7,200
<u>TOTAL FINAL EFFECTIVE OVERWATER COVER</u>	69,727
<u>NET CHANGE IN EFFECTIVE OVERWATER COVER</u>	7,066
<u>Repair of Commercial Overwater Structures</u>	
<u>Total # of existing commercial structures</u>	11
<u>Total square footage of structures</u>	133,516
<u>Average square footage of commercial structures</u>	12,138
<u>Percentage of existing piers to be replaced with grated decking in nearshore 30 feet (240 sf/pier)</u>	30%
<u>Total square footage of decking to be replaced with grating</u>	792
<u>Effective overwater coverage of replaced decking (40% open space)</u>	475
<u>Effective reduction in overwater coverage as result of repair</u>	317
<u>Total square footage of existing commercial piers</u>	133,516
<u>Reduction of effective overwater cover based on repairs</u>	-317
<u>TOTAL FINAL EFFECTIVE OVERWATER COVER</u>	133,199
<u>NET CHANGE IN EFFECTIVE OVERWATER COVER</u>	-317
<u>Repair of Public Overwater Structures</u>	
<u>Total # of existing public structures</u>	9
<u>Total square footage of structures</u>	32,218
<u>Average square footage of public structures</u>	3,580
<u>Percentage of existing decking to be replaced with grated decking</u>	100%
<u>Total square footage of decking to be replaced</u>	32,218
<u>Effective overwater coverage of replaced decking (40% open space)</u>	19,331
<u>Effective reduction in overwater coverage as result of repair</u>	12,887

Additions to Public Overwater Structures

Total # of additions to piers possible	2
Total square footage estimated for new additions	2,482
Total square footage fully grated	2,482
Total new effective overwater cover (40% open space)	1,489
<u>Effective increase in overwater coverage for additions</u>	<u>1,489</u>

Total square footage of existing public piers	32,218
Reduction of effective overwater cover based on repairs	-12,887
Increase in effective overwater cover based on additions	1,489
<u>TOTAL FINAL EFFECTIVE OVERWATER COVER</u>	<u>20,820</u>
<u>NET CHANGE IN EFFECTIVE OVERWATER COVER</u>	<u>-11,398</u>

Existing Overwater Coverage

Total existing overwater coverage - single-family	272,313
Total existing overwater coverage - multi-family	62,661
Total existing overwater coverage - commercial	133,516
Total existing overwater coverage - public	32,218
<u>Total existing overwater coverage (square footage)</u>	<u>500,708</u>

Effective Overwater Coverage at Buildout

Total overwater cover at buildout - single-family	249,925
Total overwater cover at buildout - multi-family	69,727
Total overwater cover at buildout - commercial	133,199
Total overwater cover at buildout - public	20,820
<u>Total effective overwater coverage at buildout (square footage)</u>	<u>473,671</u>

Change in Effective Overwater Coverage at Buildout

Net change in overwater cover - single-family	-22,388
Net change in overwater cover - multi-family	7,066
Net change in overwater cover - commercial	-317
Net change in overwater cover - public	-11,398
<u>TOTAL CHANGE IN EFFECTIVE OVERWATER COVER AT BUILDOUT</u>	<u>-27,037</u>
<u>PERCENTAGE DECREASE IN OVERWATER COVER AT BUILDOUT</u>	<u>-5.4%</u>

APPENDIX D – VEGETATION DETAILS

ADDITIONAL MINOR AMENDMENTS TO CHAPTER 83

83.80 Definitions

86. 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 decks, patios or similar improvements, and accessory uses, structures or activities as defined in Chapter 5 KZC.

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

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 41).
 - 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 action or enhancement project.
 - 3) For those properties located along Lake Ave West south of the Lake Ave W Street End Park in the Residential – L environment, the average shoreline setback of the subject the property shall be calculated by measuring the closest point of the primary structure to the OHWM on the adjacent property on each side of the subject property and averaging the two shoreline setbacks. The setback measurement shall exclude those features allowed to extend into the shoreline setback as identified in Section 83.190.2.d.8 KZC. See 83.180.3 KZC if there is no primary structure on one side of the primary structure on the subject property. Also see 83.190.4) KZC below.
 - 3)4) For those properties located along Lake Ave West south of the Lake Ave W Street End Park in the Residential – L environment, in instances where the shoreline setback of adjacent dwelling units has been reduced through a shoreline reduction authorized under KZC 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.
 - 4)5) In those instances where there is an intervening property that is 60 feet in depth between the OHWM and an upland property, a shoreline setback shall be provided on the upland property based on the average parcel depth of the upland property. The setback on the upland property shall be measured from the OHWM across the intervening property and the upland property.
- c. *No change*
- d. Structures and Improvements – The following improvements or structures may be located in the shoreline setback, except within the Natural shoreline 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) through 16) *No change*

17) Motorized watercraft, floatplanes, RVs, and similar items shall not be stored or parked in the shoreline setback.

<p>The chart is coded according to the following legend.</p> <p>SD = Substantial Development¹</p> <p>CU = Conditional Use</p> <p>X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit</p>	<p>Natural</p>	<p>Urban Conservancy</p>	<p>Residential - L</p>	<p>Residential – M/H</p>	<p>Urban Mixed</p>	<p>Aquatic</p>
<p>Retail Establishment providing new or used Boat Sales or Rental</p>	<p>X</p>	<p>SD³</p>	<p>X</p>	<p>CU^{4,6}</p>	<p>SD⁵</p>	<p>See adjacent upland environments</p>
<p>Retail establishment providing gas and oil sale for boats</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>CU^{4,6}</p>	<p>CU⁶</p>	<p>See adjacent upland environments</p>
<p>Retail establishment providing boat and motor repair and service</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>CU^{4,6}</p>	<p>CU⁶</p>	<p>X</p>
<p>Restaurant or Tavern⁷</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>CU⁴</p>	<p>SD</p>	<p>X</p>
<p>Concession Stand</p>	<p>X</p>	<p>SD³</p>	<p>X</p>	<p>X</p>	<p>SD³</p>	<p>X</p>
<p>Entertainment or cultural facility</p>	<p>X</p>	<p>CU⁸</p>	<p>X</p>	<p>X</p>	<p>SD</p>	<p>X</p>
<p>Hotel or Motel</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>CU⁹/X</p>	<p>SD</p>	<p>X</p>

¹ A development activity may also be exempt from the requirement to obtain a substantial development permit. See Chapter 141 KZC addressing exemption. If a development activity is determined to be exempt, it must otherwise comply with applicable provisions of the Act and this Chapter.

³ Permitted as an accessory use to a Public Park.

⁴ 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, and south of NE Juanita Drive.

⁵ Permitted in the Juanita Business District or as an accessory use to a marina.

⁶ Accessory to a marina only.

⁷ Drive-in or drive-through facilities are prohibited.

⁸ Use must be open to the general public.

¹ A development activity may also be exempt from the requirement to obtain a substantial development permit. See Chapter 141 KZC addressing exemption. If a development activity is determined to be exempt, it must otherwise comply with applicable provisions of the Act and this Chapter.

⁹ Permitted in Planned Area 3B if allowed through the Lakeview Neighborhood Plan.

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
Houseboats	X	X	X	X	X	X
Assisted Living Facility ¹⁸	X	X	X	CU	SD	X
Convalescent Center or Nursing Home	X	X	X	CU ¹⁹	SD ²⁰	X
Land division	SD ²¹	SD ²¹	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 ¹⁹	SD ²⁰	X
School or Day-Care Center	X	X	X	CU ¹⁹	SD ¹⁰	X
Mini-School or Mini-Day-Care Center	X	X	X	SD ¹⁹	SD ¹⁰	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 ²²	SD ²²	SD ²²	SD ²²	

¹⁸ A nursing home use may be permitted as part of an assisted living facility use.

¹⁹ Permitted if located on the east side of Lake Washington Blvd NE/Lake St S, or the east side of 98th Avenue NE or north of NE Juanita Drive.

²⁰ 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.

²¹ May not create any new lot that would be wholly contained within shoreland area in this shoreline environment.

²² Permitted as an accessory use to a marina or a public park.

SHORELINE DEVELOPMENT STANDARDS

83.180. 3

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
Residential Uses						
Detached Dwelling Units and Accessory Dwelling Units						
Minimum Lot Size	n/a	12,500 sq. ft.	12,500 sq. ft.	12,500 sq. ft. except for the following: <ul style="list-style-type: none"> • 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.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
Shoreline Setback ¹	n/a	Thirty (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.	Outside of shorelines 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. For those properties located along Lake Ave W south of the Lake Ave W Street End Park, the following standard shall apply: <u>If dwelling units primary structures exist immediately</u>	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.

¹ Critical area buffer and buffer setback requirements may impose a larger setback requirement. Please see KZC 83.500 and 83.510.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				<p>adjacent to both sides 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 <u>two adjacent primary structures</u> dwelling units, but at a minimum width of 15 feet. If a <u>primary structure</u> dwelling unit is not adjacent to the subject property, then the setback of the property without a dwelling unit for the purposes of determining an average setback shall be based upon 30% of the average</p>		

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				parcel depth. Also see KZC 83.190.2.b.3.		
Maximum Lot Coverage	n/a	50%	50%	50%	80%	80%, except in CBD zone 100% less area for shoreline vegetation if required.
Maximum Height of Structure ²	n/a	25' above ABE ³	35' above ABE	30' above ABE	35' above ABE	35' above ABE
Other Residential Uses (Attached, Stacked, and Detached Dwelling Units/multifamily; Assisted Living Facility; Convalescent Center or Nursing Home)						
Maximum Density ⁴	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 or BN zones; otherwise 1,800 sq. ft./unit
Shoreline Setback ¹	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.

¹ Critical area buffer and buffer setback requirements may impose a larger setback requirement. Please see KZC 83.500 and 83.510.

² 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.

³ Structure height may be increased to 30' above ABE in the Natural shoreline environment. See KZC83.190.4.c.1

⁴ For density purposes 2 assisted living units shall be constitute one dwelling unit.

SHORELINE DEVELOPMENT STANDARDS

83.180.3

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential - M/H	Urban Mixed
Residential Uses						
Detached Dwelling Units and Accessory Dwelling Units						
Minimum Lot Size	n/a	12,500 sq. ft.	12,500 sq. ft.	12,500 sq. ft. except for the following: <ul style="list-style-type: none"> 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. <u>except 1,800 sq. ft. in RMA zone</u>	3,600 sq. ft.

- RS4 is maximum of four dwelling units per acre
- RS6 is maximum of six dwelling units per acre
- RS8 is maximum of 8 dwelling units per acre.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential - M/H	Urban Mixed
						vegetation if required.
Maximum Height of Structure ²	n/a	25' above ABE ³	35' above ABE	30' above ABE	35' above ABE	35' above ABE
Other Residential Uses (Attached, Stacked, and Detached Dwelling Units/multifamily, Assisted Living Facility, Convalescent Center or Nursing Home)						
Maximum Density ⁴	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 ¹	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 52 nd Street, a mixed-use development approved under a master plan shall comply with the Master Plan provisions.

¹ Critical area buffer and buffer setback requirements may impose a larger setback requirement. Please see KZC 83.500 and 83.510.

² 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.

³ Structure height may be increased to 30' above ABE in the Natural shoreline environment. See KZC 83.190.4.c.1

⁴ For density purposes 2 assisted living units shall be constitute one dwelling unit.

✗ FOR RMA ZONES: 1,800 sq. ft./unit.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential - M/H	Urban Mixed
Maximum Lot Coverage	n/a	n/a	n/a	n/a	80%	80%, except in CBD zone 100% less area for shoreline vegetation if required.
Maximum Height of Structure ²	n/a	n/a	n/a	n/a	30' above ABE ⁵ , <u>except 35' above ABE for RMA zone</u>	41' above ABE, except for the following: <ul style="list-style-type: none"> 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.⁶

² 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

⁵ Structure height may be increased to 35' above ABE. See KZC 83.190.4

⁶ See KZC 83.190.4 for height in Master Plan.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential - M/H	Urban Mixed
Maximum Height of Structure ²	n/a	n/a	If adjoining the Residential-L shoreline environment, then 25' above ABE. Otherwise, 30' above ABE. ³	n/a	30' above ABE ⁵ , <u>except 35' above ABE for RMA ZONE</u>	41' above ABE, except for: <ul style="list-style-type: none"> 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.⁶
Recreational Uses						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a
Shoreline Setback ¹	n/a	Water-dependent	Water-dependent uses: 0', Water-	30% of the average parcel depth,	The greater of:	The greater of:

⁶ See KZC 83.190.4 for height in the Master Plan.

¹ Critical area buffer and buffer setback requirements may impose a larger setback requirement. Please see KZC 83.500 and 83.510.

² 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

³ Structure height may be increased to 30' above ABE in the Natural shoreline environment. See KZC83.190.4.

⁵ Structure height may be increased to 35' above ABE. See KZC 83.190.4

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential - M/H	Urban Mixed
				specifically allowed through this Chapter.		
Maximum Lot Coverage	n/a	n/a	50%	50%	80%	80%, except in CBD zone 100% less area for shoreline vegetation if required.
Maximum Height of Structure ²	n/a	n/a	If adjoining the Residential-L shoreline environment, then 25' above ABE. Otherwise, 30' above ABE ³	25' above ABE	30' above ABE ⁵ , <u>except 35' above ABE for RMA zone</u>	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
Shoreline Setback ¹	n/a	n/a	Outside of shorelines jurisdictional, if feasible, otherwise 50'.	30% of the average parcel depth, except in no case is the shoreline setback permitted to be	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.

¹ Critical area buffer and buffer setback requirements may impose a larger setback requirement. Please see KZC 83.500 and 83.510.

² 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

³ Structure height may be increased to 30' above ABE in the Natural shoreline environment. See KZC 83.190.4.

⁵ Structure height may be increased to 35' above ABE. See KZC 83.190.4

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential - L	Residential - M/H	Urban Mixed
				otherwise specifically allowed through this Chapter.		
Maximum Lot Coverage	n/a	5%	30%	50%	80%	80%, except in CBD zone 100% less area for shoreline vegetation if required.
Maximum Height of Structure ²	n/a	25' above ABE	If adjoining the Residential-L shoreline environment, then 25' above ABE. Otherwise, 30' above ABE ³	25' above ABE	30' above ABE ⁵ , <u>except 35' above ABE for RMA zone</u>	41' above ABE, except: <ul style="list-style-type: none"> 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

² 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

³ Structure height may be increased to 30' above ABE in the Natural shoreline environment. See KZC83.190.4.

⁵ Structure height may be increased to 35' above ABE. See KZC 83.190.4

CHAPTER 18 – SINGLE-FAMILY RESIDENTIAL A (RSA) ZONES

18.05 User Guide.

The charts in KZC 18.10 contain the basic zoning regulations that apply in each RSA 1, RSA 4, RSA 6 and RSA 8 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 18.08

**Zone
RSA**

Section 18.08 – 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. 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 further details.
(Does not apply to Detached Dwelling Unit and Mini-School or Mini-Day-Care Center uses).
3. All subdivisions and short subdivisions in the RSA-1 zone shall be clustered such that development is located away from critical areas. The open space resulting from such clustering shall be placed in a separate tract that includes at least 50 percent of the subject property. Open space tracts shall be permanent and shall be dedicated to a homeowner’s association or other suitable organization for purposes of maintenance. Passive recreation, with no development of recreational facilities, and natural-surface pedestrian and equestrian trails are acceptable uses within the open space tract. If access to the open space is provided, the access shall be located in a separate tract. A greenbelt protection or open space easement shall be dedicated to the City to protect the designated open space tract resulting from lot clustering.
4. For properties within the Holmes Point (HP) Overlay Zone, see Chapter 70 KZC for additional regulations.
- ~~5. For properties with frontage on Lake Washington, the required yard measured from the high waterline shall be the greater of 15 feet or 15 percent of the average parcel depth. No structure other than a moorage structure shall be waterward of the high waterline.~~
- ~~5. May not use lands waterward of the ordinary high water mark to determine lot size or to calculate allowable density.~~
- ~~6. See Plate 39 for areas identified as heron habitat protection areas and KZC 90.127 for regulations that apply to identified heron habitat protection areas.~~
6. For properties within the jurisdiction of the Shoreline Management Act, see Chapter 83 KZC for permitted uses, shoreline setback regulations and other additional regulations.

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS

Section 18.10	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	Side	Rear						

.010	Detached Dwelling Unit	None	As established on the zoning Map. See Spec Regs. 1, 2 and 3.	20' See Spec. Regs. 5 and 6 and 9.	5' each side	10'	50% except 30% for the RSA 1 zone. See Gen. Reg. 3. See Gen. Reg. 4 for Holmes Point overlay zone	30' above average building elevation. See Spec. Reg. 8	E	A	2.0 per dwelling unit.	<ol style="list-style-type: none"> 1. Maximum units per acre is as follows: <ol style="list-style-type: none"> a. In RSA 1 zone, the maximum units per acre is one dwelling unit. b. In RSA 4 zones, the maximum units per acre is four dwelling units. c. In RSA 6 zones, the maximum units per acre is six dwelling units. d. In RSA 8 zones, the maximum units per acre is eight dwelling units. In RSA 1, 4, 6 and 8 zones, not more than one dwelling unit may be on each lot, regardless of the size of the lot. 2. Minimum lot size per dwelling unit is as follows: <ol style="list-style-type: none"> a. In RSA 1 zone, newly platted lots shall be clustered and configured in a manner to provide generally equal sized lots outside of the required open space area. b. In RSA 4 zones, the minimum lot size is 7,600 square feet. c. In RSA 6 zones, the minimum lot size is 5,100 square feet. d. In RSA 8 zones, the minimum lot size is 3,800 square feet. 3. Road dedication and vehicular access easements or tracts may be included in the density calculation, but not in the minimum lot size per dwelling unit. 4. Floor Area Ratio (F.A.R.) allowed for the subject property is as follows: <ol style="list-style-type: none"> a. In RSA 1 zone, F.A.R. is 20 percent of lot size. b. In RSA 4 zones, F.A.R. is 50 percent of lot size. c. In RSA 6 zones, F.A.R. is 50 percent of lot size. d. In RSA 8 zones, F.A.R. is 50 percent of lot size; provided, that F.A.R. may be increased up to 60 percent of lot size for the first 5,000 square feet of lot area if the primary roof form of all structures on the site is peaked, with a minimum pitch of four feet vertical to 12 feet horizontal. See KZC 115.42, Floor Area Ratio (F.A.R.) Calculation for Detached Dwelling Units in Low Density Residential Zones, for additional information. 5. On corner lots, only one front yard must be a minimum of 20 feet. All other front yards shall be regulated as a side yard (minimum five-foot yard). The applicant may select which front yard shall meet the 20-foot requirement. 6. Garages shall comply with the requirements of KZC 115.43, including required front yard. 7. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use.
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DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 18.10	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	Side	Rear						
										<p>8. Maximum height of structure for properties located within the Juanita Beach Camps Plat (Volume 32, Page 35 of King County Records) or the Carr's Park Plat (Unrecorded) shall be 35 feet above average building elevation.</p> <p>9. <u>For properties within the jurisdiction of the Shoreline Management Act that have a shoreline setback requirement as established in Chapter 83 KZC and the setback requirement is met, the minimum required front yard is either: 10' or the average of the existing front yards on the properties abutting each side of the subject property. For the reduction in front yard, the shoreline setback is considered conforming if a reduction in the required shoreline setback is approved through Section 83.380 KZC.</u></p> <p>10. <u>For this use, only one dwelling unit may be on each lot regardless of the size of the lot.</u></p> <p>11. <u>Residential uses abutting Lake Washington may have an associated private shoreline park that is commonly or individually owned and used by residents and guests.</u></p>		

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS

Section 18.10	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	Side	Rear						
.015	Moorage Facility for 1 or 2 Boats Piers, Docks, Boat Lifts and Canopies Serving Detached Dwelling Unit	None See Chapter 83 KZC	None	20'	5' See Spec. Reg. 12.	-	50%	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	<ol style="list-style-type: none"> 1. 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. 11. Two or more adjoining waterfront lots may share a mooring facility. If this occurs, the following regulations apply: <ol style="list-style-type: none"> 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 overwater 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. 12. No moorage structure may be within either 25' of a public park or 25 feet of another moorage structure not on the subject property.

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 18.10	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	Side	Rear						

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 18.10	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	Side	Rear						
.020	Church <u>See Spec Regs 1 and 4.</u>	See Spec. Reg. 4. <u>2.</u>	As established on the Zoning Map. See Spec. Reg. <u>2. 3</u>	20'	20' on each side	20'	70%, except 30% for RSA 1 zone. See Gen. Reg. 3. See Gen. Reg. 4 for Holmes Point overlay zone.	30' above average building elevation.	C	B	1 for every 4 people based on maximum occupancy load of worship. See Spec. Reg. 4. <u>5</u>	<p>1. <u>This use is not permitted on properties within the jurisdiction of the Shoreline Management Act. See Chapter 83 KZC.</u></p> <p>4. <u>2.</u> The required review process is as follows:</p> <p>a. If the subject property, including all contiguous property owned by the applicant and held by others for future use by the applicant, is less than five acres, the required review process is Process IIA, Chapter 150 KZC.</p> <p>b. If the subject property, including all contiguous property owned by the applicant and held by others for future use by the applicant, is five or more acres, a Master Plan, approved through Process IIB, Chapter 152 KZC, is required. The Master Plan must show building placement, building dimensions, roadways, utility location, land uses within the Master Plan area, parking location, buffering, and landscaping.</p> <p>2. <u>3.</u> Minimum lot size is as follows:</p> <p>a. In RSA 1 zone, newly platted lots shall be clustered and configured in a manner to provide generally equal sized lots outside of the required open space area.</p> <p>b. In RSA 4 zones, the minimum lot size is 7,600 square feet.</p> <p>c. In RSA 6 zones, the minimum lot size is 5,100 square feet.</p> <p>d. In RSA 8 zones, the minimum lot size is 3,800 square feet.</p> <p>3. <u>4.</u> The property must be served by a collector or arterial street.</p> <p>4. <u>5.</u> No parking is required for day-care or school ancillary to the use.</p>
.030	School or Day-Care Center <u>See Spec. Regs. 1 and 2.</u>	See Spec. Reg. <u>2. 3.</u>	As established on the Zoning Map. See Spec. Reg. <u>3. 4.</u>	If this use can accommodate 50 or more students or children, then:			30' above average building elevation. See Spec. Reg. <u>9. 10.</u>	D See Gen. Regs. 3 and 4.	B See Spec. Reg. <u>42. 13.</u>	See KZC 105.25.	<p>1. May locate on the subject property only if:</p> <p>a. It will not be materially detrimental to the character of the neighborhood in which it is located; or</p> <p>b. Site and building design minimizes adverse impacts on surrounding residential neighborhoods.</p> <p>c. The property is served by a collector or arterial street.</p> <p>2. <u>This use is not permitted on properties within the jurisdiction of the Shoreline Management Act. See Chapter 83 KZC.</u></p> <p>2. <u>3.</u> The required review process is as follows:</p> <p>a. If the subject property, including all contiguous property owned by the applicant and held by others for future use by the applicant, is less than five acres, the required review process is Process IIA,</p>	
				50'	50' on each side	50'						
				If this use can accommodate 13 to 49 students or children, then:								

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 18.10	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	Side	Rear						
			20'	20' on each side	20'					Chapter 150 KZC. b. If the subject property, including all contiguous property owned by the applicant and held by others for future use by the applicant, is five or more acres, a Master Plan, approved through Process IIB, Chapter 152 KZC, is required. The Master Plan must show building placement, building dimensions, roadways, utility locations, land uses within the Master Plan area, parking location, buffering, and landscaping.		
.030	School or Day-Care Center (continued)									REGULATIONS CONTINUED FROM PREVIOUS PAGE 3.4. Minimum lot size is as follows: a. In RSA 1 zone, newly platted lots shall be clustered and configured in a manner to provide generally equal sized lots outside of the required open space area. b. In RSA 4 zones, the minimum lot size is 7,600 square feet. c. In RSA 6 zones, the minimum lot size is 5,100 square feet. d. In RSA 8 zones, the minimum lot size is 3,800 square feet. 4-5. A six-foot-high fence along the side and rear property lines is required only along the property lines adjacent to the outside play areas. 5-6. Hours of operation and maximum number of attendees at one time may be limited to reduce impacts on nearby residential uses. 6-7. Structured play areas must be set back from all property lines as follows: a. 20 feet if this use can accommodate 50 or more students or children. b. 10 feet if this use can accommodate 13 to 49 students or children. 7-8. 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 number of attendees and the extent of the abutting right-of-way improvements. Carpooling, staggered loading/unloading time, right-of-way improvements or other means may be required to reduce traffic impacts on nearby residential uses. 8-9. The location of parking and passenger loading areas shall be designed to reduce impacts on nearby residential uses. 9-10. For school use, structure height may be increased, up to 35 feet, if:		

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 18.10	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	Side	Rear						
										a. The school can accommodate 200 or more students; and b. The required side and rear yards for the portions of the structure exceeding the basic maximum structure height are increased by one foot for each additional one foot of structure height; and c. The increased height is not specifically inconsistent with the applicable neighborhood plan provisions of the Comprehensive Plan. d. The increased height will not result in a structure that is incompatible with surrounding uses or improvements. 40.11. May include accessory living facilities for staff persons. 44.12 These uses are subject to the requirements established by the Department of Social and Health Services (WAC Title 388). 42.13. Electrical signs shall not be permitted.		

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS

Section 18.10	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	Side	Rear						
.040	Mini-School or Mini-Day-Care Center See Spec. Regs. 1 and 2.	Process I, Chapter 145 KZC.	As established on the Zoning Map. See Spec. Reg. 2. 3.	20'	5' but 2 side yards must equal at least 15'.	10'	50%, except 30% for RSA 1 zone. See Gen. Reg. 3. See Gen. Reg. 4 for Holmes Point overlay zone.	30' above average building elevation.	E See Gen. Regs. 3 and 4.	B See Spec. Reg. 8.9.	See KZC 105.25.	<ol style="list-style-type: none"> 1. May locate on the subject property if: <ol style="list-style-type: none"> a. It will not be materially detrimental to the character of the neighborhood in which it is located. b. Site design must minimize adverse impacts on surrounding residential neighborhoods. 2. This use is not permitted on properties within the jurisdiction of the <u>Shoreline Management Act. See Chapter 83 KZC.</u> 2.3. Minimum lot size is as follows: <ol style="list-style-type: none"> a. In RSA 1 zone, newly platted lots shall be clustered and configured in a manner to provide generally equal sized lots outside of the required open space area. b. In RSA 4 zones, the minimum lot size is 7,600 square feet. c. In RSA 6 zones, the minimum lot size is 5,100 square feet. d. In RSA 8 zones, the minimum lot size is 3,800 square feet. 3.4. A six-foot-high fence is required along the property line adjacent to the outside play areas. 4.5. Hours of operation and the maximum number of attendees may be limited by the City to reduce impacts on nearby residential uses. 5.6. Structured play areas must be set back from all property lines by five feet. 6.7. An on-site passenger loading area may be required depending on the number of attendees and the extent of the abutting right-of-way improvements. 7.8. The location of parking and passenger loading areas shall be designed to reduce impacts on nearby residential uses. 8.9. Electrical signs shall not be permitted. Size of signs may be limited to be compatible with nearby residential uses. 9.10. May include accessory living facilities for staff persons. 10.11. These uses are subject to the requirements established by the Department of Social and Health Services (WAC Title 388).
.050	(Reserved)											

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS

Section 18.10	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	Side	Rear						
.060	Golf Course See Spec. Reg. 1.	Process IIA, Chapter 150 KZC.	1 acre	50'	50' on each side	50'	50%, except 30% for RSA 1 zone. See Gen. Reg. 3. See Gen. Reg. 4 for Holmes Point overlay zone.	30' above average building elevation.	E See Gen. Regs. 3 and 4.	B	See KZC 105.25.	<ol style="list-style-type: none"> 1. This use is not permitted on properties within the jurisdiction of the Shoreline Management Act. See Chapter 83 KZC. 2. Site design must minimize adverse impacts on surrounding residential neighborhoods. 3. May not include miniature golf. 4. The following accessory uses are specifically permitted as part of this use. <ol style="list-style-type: none"> a. Equipment storage facilities. b. Retail sales and rental of golf equipment and accessories. c. A restaurant.
.070	Public Utility	See Spec. Reg. 1.	None	20'	20' on each side	20'	70%, except 30% for RSA 1 zone. See Gen. Reg. 3. See Gen. Reg. 4 for Holmes Point overlay zone.	30' above average building elevation.	A See Gen. Regs. 3 and 4.	C See Spec. Reg. 3.		<ol style="list-style-type: none"> 1. The required review process is as follows: <ol style="list-style-type: none"> a. If the subject property, including all contiguous property owned by the applicant and held by others for future use by the applicant, is less than five acres, the required review process is Process IIA, Chapter 150 KZC. b. If the subject property, including all contiguous property owned by the applicant and held by others for future use by the applicant, is five or more acres, a Master Plan, approved through Process IIB, Chapter 152 KZC, is required. The Master Plan must show building placement, building dimensions, roadways, utility locations, land uses within the Master Plan area, parking location, buffering, and landscaping. 2. Site design must minimize adverse impacts on surrounding residential neighborhoods. 3. 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. 4. A Community Facility use is not permitted on properties within the jurisdiction of the Shoreline Management Act. See Chapter 83 KZC.
.080	Government Facility Community Facility				10' on each side	10'	See Gen. Reg. 6.					

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 18.10	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	Side	Rear						
.090	Public Park	Development standards will be determined on a case-by-case basis. See Chapter 49 KZC for required review process.								1. <u>For properties within the jurisdiction of the Shoreline Management Act, this use may include a public access pier or boardwalk. See Chapter 83 KZC.</u>		

CHAPTER 20 – MULTIFAMILY RESIDENTIAL (RM AND RMA) ZONES**20.05** User Guide.

The charts in KZC 20.10 contain the basic zoning regulations that apply in each RM 5, RMA 5, RM 3.6, RMA 3.6, RM 2.4, RMA 2.4, RM 1.8 and RMA 1.8 zone 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 20.08


Zone
RM, RMA

Section 20.08 – 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. Developments creating four or more new detached, attached or stacked dwelling units shall provide at least 10 percent of the units as affordable housing units as defined in Chapter 5 KZC. Two additional units may be constructed for each affordable housing unit provided. See Chapter 112 KZC for additional affordable housing incentives and requirements.
3. If any portion of a structure is adjoining a low density zone or a low density use in PLA 17, 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 further details.
(Does not apply to Piers, Docks, Boat Lifts and Canopies Serving Detached, Attached or Stacked Dwelling Units and Detached Dwelling Units uses).
4. If the subject property is located east of JBD 2 and west of 100th Avenue NE, the following regulation applies:
Must provide a public pedestrian access easement if the Planning Official determines that it will furnish a pedestrian connection or part of a connection between 98th Avenue NE and 100th Avenue NE. Pathway improvements will also be required if the easement will be used immediately. No more than two complete connections shall be required.
5. If the subject property is located within the North Rose Hill neighborhood, east of Slater Avenue NE and north of NE 116th Street, the minimum required front yard is 10 feet. Ground floor canopies and similar entry features may encroach into the front yard; provided, the total horizontal dimension of such elements may not exceed 25 percent of the length of the structure. No parking may encroach into the required 10-foot front yard.
6. Any required yard abutting Lake Washington Boulevard or Lake Street South must be increased two feet for each one foot the structure exceeds 25 feet above average building elevation.
(Does not apply to Piers, Docks, Boat Lifts and Canopies Serving Detached, Attached or Stacked Dwelling Units and Public Park uses).
7. If the subject property is located between NE Juanita Dr. and Lake Washington or 98th Avenue NE and Lake Washington, refer to Chapter 83 KZC for regulations regarding shoreline setbacks and public pedestrian walkways.

(GENERAL REGULATIONS CONTINUED ON NEXT PAGE)

(GENERAL REGULATIONS CONTINUED FROM PREVIOUS PAGE)

8. If the property is located in the NE 85th Street Subarea, the following shall apply:
 - a. If the subject property is located south of NE 85th Street between 124th Avenue NE and 120th Avenue NE, the applicant shall to the extent possible save existing viable significant trees within the required landscape buffer separating nonresidential development from adjacent single-family homes.
 - b. If the subject property is located directly north of the RH 4 zone, the applicant shall install a through-block pedestrian pathway pursuant to the standards in KZC 105.19(3) to connect an east-west pedestrian pathway designated in the Comprehensive Plan between 124th Avenue NE and 120th Avenue NE. (See Plate 34K).
9. May not use lands waterward of the ordinary high water mark to determine lot size or to calculate allowable density.
- ~~10. May also be regulated under the Shoreline Master Program, refer to Chapter 83 KZC.~~
10. For properties within the jurisdiction of the Shoreline Management Act, see Chapter 83 KZC for permitted uses, shoreline setback regulations and other additional regulations.
11. For properties within the jurisdiction of the Shoreline Management Act that have a shoreline setback requirement as established in Chapter 83 KZC and the setback requirement is met, the minimum required front yard is either: 10' or the average of the existing front yards on the properties abutting each side of the subject property. For the reduction in front yard, the shoreline setback is considered conforming if a reduction in the required shoreline setback is approved through Section 83.380 KZC. This regulation does not pertain to the School or Day-Care Center uses that accommodate 50 or more students or children.

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 20.10	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	Side	Rear						
.010	Detached Dwelling Units	None	5,000 sq. ft. in an RM and RMA 5.0. Otherwise, 3,600 sq. ft.	20' <u>See Gen Reg. 11.</u>	5', but 2 side yards must equal at least 15'.	10'	60%	RM zone: If adjoining a low density zone other than RSX, then 25' above average building elevation. Otherwise, 30' above average building elevation. See Spec. Reg. 8. RMA zone: 35' above average building elevation.	E	A	2.0 per unit.	<ol style="list-style-type: none"> For this use, only one dwelling unit may be on each lot regardless of the size of the lot. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use. If the property is in an RM 1.8, 2.4, or 3.6 zone and contains less than 5,000 sq. ft., each side yard may be five feet. No structures, other than moorage structures or public access piers, <u>may be waterward of the ordinary high water mark. See Chapter 83 KZC.</u>
.020	Detached, Attached or Stacked Dwelling Units Stacked Dwelling Units are not permitted in RM and RMA 5.0.	Within the NE 85th Street Subarea, D.R., Chapter 142 KZC. Otherwise, none.	3,600 sq. ft. with a density as established on the Zoning Map. See Spec. Reg. 1.	RM zone: 5' for detached units. For attached or stacked units, 5', but 2 side yards must equal at least 15'. See Spec. Reg. 6. RMA zone: 5' <u>See Gen Reg. 10.</u>	10' See Spec. Reg. 7.				D See Spec. Regs. 4 and 9.		1.7 per unit.	<ol style="list-style-type: none"> Minimum amount of lot area per dwelling unit is as follows: <ol style="list-style-type: none"> In RM 5.0 and RMA 5.0 zones, the minimum lot area per unit is 5,000 sq. ft. In RM 3.6 and RMA 3.6 zones, the minimum lot area per unit is 3,600 sq. ft. In RM 2.4 and RMA 2.4 zones, the minimum lot area per unit is 2,400 sq. ft. In RM 1.8 and RMA 1.8 zones, the minimum lot area per unit is 1,800 sq. ft. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use. Chapter 115 KZC contains regulations regarding common recreational space requirements for this use. Except for low density uses, if the subject property is located within the NRH neighborhood, west of Slater Avenue NE and south of NE 100th Street, and if it adjoins a low density zone or a low density use in PLA 17, then landscape category A applies. Development located in the RM 3.6 zone in North Rose Hill, lying between Slater Avenue NE and 124th Avenue NE, and NE 108th Place (extended) and approximately NE 113th Place (extended) shall comply with the following:

												<p>a. Each development shall incorporate at least two acres; and b. Significant vegetation that provides protection from I-405 shall be retained to the maximum extent feasible.</p> <p>REGULATIONS CONTINUED ON NEXT PAGE</p>
.020	Detached, Attached or Stacked Dwelling Units (continued)											<p>REGULATIONS CONTINUED FROM PREVIOUS PAGE</p> <p>6. The side 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 must provide a minimum side yard of five feet.</p> <p>7. The rear yard may be reduced to zero feet if the rear of the dwelling unit is attached to a dwelling unit on an adjoining lot.</p> <p>8. Where the 25-foot height limitation results solely from an adjoining low density zone occupied by a school that has been allowed to increase its height to at least 30 feet, then a structure height of 30 feet above average building elevation is allowed.</p> <p>9. When a low density use adjoins a detached dwelling unit in a low density zone, Landscape Category E applies.</p> <p><u>10. Residential uses may have an associated private shoreline park that is commonly owned and used by residents and guests.</u></p> <p><u>11. No structures, other than moorage structures or public access piers, may be waterward of the ordinary high water mark. See Chapter 83 KZC.</u></p>
.030	Church	Within the NE 85th Street Subarea, D.R., Chapter 142 KZC. Otherwise, Process IIA, Chapter 150 KZC.	7,200 sq. ft.	20' <u>See Gen Reg. 11</u>	20'	20'	70%	RM zone: If adjoining a low density zone other than RSX, then 25' above average building elevation. Otherwise, 30' above average building elevation. RMA zone: 35' above average building elevation.	C See Spec. Reg. 3.	B	1 for every 4 people based on maximum occupancy load of worship. See Spec. Reg. 2.	<p>1. The property must be served by a collector or arterial street.</p> <p>2. No parking is required for day-care or school ancillary to the use.</p> <p>3. If the subject property is located within the NRH neighborhood, west of Slater Avenue NE and south of NE 100th Street, and if it adjoins a low density zone or a low density use in PLA 17, then landscape category A applies.</p>

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS												
Section 20.10	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	Side Property Line	Shoreline Setback						
.040	Piers, Docks, Boat Lifts and Canopies Serving Detached, Attached or Stacked Dwelling Units	See Chapter 83 KZC.	None	30' See also Spec. Reg. 3. <u>See Chap 83 KZC</u>	5', but 2 side yards must equal at least 15'. <u>See Chap 83 KZC</u>	See Chapter 83 KZC.		Landward of the ordinary high water mark 30' above average building elevation. RM Zone 30' above average building elevation. RMA Zone: 35' above average building elevation.	B	B	None	<ol style="list-style-type: none"> 1. Refer to Chapter 83 KZC for additional regulations. 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: <ol style="list-style-type: none"> 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.

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS

Section 20.10	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	Side	Rear						
.050	School or Day-Care Center	Within the NE 85th Street Subarea, D.R., Chapter 142 KZC. Otherwise, Process IIA, Chapter 150 KZC.	7,200 sq. ft.	If this use can accommodate 50 or more students or children, then: 50' 50' on 50' each side If this use can accommodate 13 to 49 students or children, then: 20' 20' on 20' each side <u>See Gen Reg. 11</u>	70%	RM zone: If adjoining a low density zone other than RSX, then 25' above average building elevation. Otherwise, 30' above average building elevation. See Spec. Reg. 8. RMA zone: 35' above average building elevation.	D	B	See KZC 105.25.	<ol style="list-style-type: none"> May locate on the subject property only if: <ol style="list-style-type: none"> It will not be materially detrimental to the character of the neighborhood in which it is located. Site and building design must minimize adverse impacts on surrounding residential neighborhoods. A six-foot-high fence is required only along the property line adjacent to the outside play areas. Structured play areas must be set back from all property lines as follows: <ol style="list-style-type: none"> Twenty feet if this use can accommodate 50 or more students or children. Ten feet if this use can accommodate 13 to 49 students or children. 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 number of attendees and the extent of the abutting right-of-way improvements. Carpooling, staggered loading/unloading time, right-of-way improvements or other means may be required to reduce traffic impacts on nearby residential uses. May include accessory living facilities for staff persons. To reduce impacts on nearby residential uses, hours of operation of the use may be limited and parking and passenger loading areas relocated. These uses are subject to the requirements established by the Department of Social and Health Services (WAC Title 388). For school use, structure height may be increased, up to 35 feet, if: <ol style="list-style-type: none"> The school can accommodate 200 or more students; and The required side and rear yards for the portions of the structure exceeding the basic maximum structure height are increased by one foot for each additional one foot of structure height; and The increased height is not specifically inconsistent with the applicable neighborhood plan provisions of the Comprehensive Plan; and The increased height will not result in a structure that is incompatible with surrounding uses or improvements. <i>This special regulation is not effective within the disapproval jurisdiction of the Houghton Community Council.</i> 		

.060	Grocery Store, Drug Store, Laundromat, Dry Cleaners, Barber Shop, Beauty Shop or Shoe Repair Shop See Spec. Reg. 9.	Process IIA, Chapter 150 KZC. Also see Chapter 83 KZC for properties in shoreline jurisdiction.	7,200 sq. ft.	20 <u>See Gen Reg. 11.</u>	5' but 2 side yards must equal at least 15'.	10'	60%	RM zone: If adjoining a low density zone other than RSX, then 25' above average building elevation. Otherwise, 30' above average building elevation. RMA zone: 35' above average building elevation.	B	E	1 per each 300 sq. ft. of gross floor area.	<ol style="list-style-type: none"> 1. This use may be permitted only if it is specifically consistent with the Comprehensive Plan in the proposed location. 2. May only be permitted if placement, orientation, and scale indicate this use is primarily intended to serve the immediate residential area. 3. Must be located on a collector arterial or higher volume right-of-way. 4. Placement and scale must indicate pedestrian orientation. 5. Must mitigate traffic impacts on residential neighborhood. 6. Gross floor area may not exceed 3,000 square feet. 7. May not be located above the ground floor of a structure. 8. Hours of operation may be limited to reduce impacts on nearby residential uses. 9. This use is not permitted in an RM zone located within the NE 85th Street Subarea.
.070	Mini-School or Mini-Day-Care	Within the NE 85th Street Subarea, D.R., Chapter 142 KZC. Otherwise, none.	3,600 sq. ft.						D	B	See KZC 105.25.	<ol style="list-style-type: none"> 1. May locate on the subject property if: <ol style="list-style-type: none"> a. It will not be materially detrimental to the character of the neighborhood in which it is located. b. Site design must minimize adverse impacts on surrounding residential neighborhoods. 2. A six-foot-high fence is required along the property line adjacent to the outside play areas. 3. Structured play areas must be set back from all property lines by five feet. 4. An on-site passenger loading area may be required depending on the number of attendees and the extent of the abutting right-of-way improvements. 5. To reduce impacts on nearby residential uses, hours of operation of the use may be limited and parking and passenger loading areas relocated. 6. May include accessory living facilities for staff persons. 7. These uses are subject to the requirements established by the Department of Social and Health Services (WAC Title 388).

.080	Assisted Living Facility (Not permitted in RM 5.0 or RMA 5.0)	Within the NE 85th Street Subarea, D.R., Chapter 142 KZC. Otherwise, none.	3,600 sq. ft.	20' <u>See Gen. Reg. 11.</u>	RM zone: 5' but 2 side yards must equal at least 15'. RMA zone: 5'.	10'	60%	RM zone: If adjoining a low density zone other than RSX, then 25' above average building elevation. Otherwise, 30' above average building elevation. RMA zone: 35' above average building elevation.	D See Spec. Reg. 6.	A	1.7 per independent unit. 1 per assisted living unit.	<ol style="list-style-type: none"> 1. A facility that provides both independent dwelling units and assisted living units shall be processed as an assisted living facility. 2. If a nursing home use is combined with an assisted living facility use in order to provide a continuum of care for residents, the required review process shall be the least intensive process between the two uses. 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: <ol style="list-style-type: none"> 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. The assisted living facility shall provide usable recreation space of at least 100 square feet per unit, in the aggregate, for both assisted living units and independent dwelling units, with a minimum of 50 square feet of usable recreation space per unit located outside. 5. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities, and activities associated with this use. 6. If the subject property is located within the NRH neighborhood, west of Slater Avenue NE and south of NE 100th Street, and if it adjoins a low density zone or a low density use in PLA 17, then landscape category A applies.
.090	Convalescent Center or Nursing Home	Within the NE 85th Street Subarea, D.R., Chapter 142 KZC. Otherwise, Process IIA, Chapter 150 KZC.	7,200 sq. ft.		10' on each side		70%		C See Spec. Reg. 2.	B	1 for each bed.	<ol style="list-style-type: none"> 1. If a nursing home use is combined with an assisted living facility use in order to provide a continuum of care for residents, the required review process shall be the least intensive process between the two uses. 2. If the subject property is located within the NRH neighborhood, west of Slater Avenue NE and south of NE 100th Street, and if it adjoins a low density zone or a low density use in PLA 17, then Landscape Category A applies.
.100	Public Utility	Within the NE 85th Street Subarea, D.R.,	None	20' <u>See Gen. Reg. 11.</u>	20' on each side	20'	70%	RM zone: If adjoining a low density zone other	A See Spec. Regs. 2 and 3.	B	See KZC 105.25.	<ol style="list-style-type: none"> 1. Site design must minimize adverse impacts on surrounding residential neighborhoods. 2. 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.

.110	Government Facility Community Facility	Chapter 142 KZC. Otherwise, Process IIA, Chapter 150 KZC.		10' on each side	10'		than RSX, then 25' above average building elevation. Otherwise, 30' above average building elevation. RMA zone: 35' above average building elevation.	C See Spec. Regs. 2 and 3.		<p>3. If the subject property is located within the NRH neighborhood, west of Slater Avenue NE and south of NE 100th Street, and if it adjoins a low density zone or a low density use in PLA 17, then Landscape Category A applies.</p> <p>4. One pedestal sign with a readerboard having electronic programming is allowed at a fire station only if:</p> <ul style="list-style-type: none"> a. It is a pedestal sign (see Plate 12) having a maximum of 40 square feet of sign area per sign face; b. The electronic readerboard is no more than 50 percent of the sign area; c. Moving graphics and text or video are not part of the sign; d. The electronic readerboard does not change text and/or images at a rate less than one every seven seconds and shall be readily legible given the text size and the speed limit of the adjacent right-of-way; e. The electronic readerboard displays messages regarding public service announcements or City events only; f. The intensity of the display shall not produce glare that extends to adjacent properties and the signs shall be equipped with a device which automatically dims the intensity of the lights during hours of darkness; g. The electronic readerboard is turned off between 10:00 p.m. and 6:00 a.m. except during emergencies; h. It is located to have the least impact on surrounding residential properties. <p>If it is determined that the electronic readerboard constitutes a traffic hazard for any reason, the Planning Director may impose additional conditions.</p> <p><u>5. A Community Facility use is not permitted on properties within the jurisdiction of the Shoreline Management Act. See Chapter 83 KZC.</u></p>
.120	Public Park	Development standards will be determined on case-by-case basis. See Chapter 49 KZC for required review process.								<p>1. If any portion of a structure is adjoining a low density zone, then either:</p> <ul style="list-style-type: none"> 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. <p>See KZC 115.30, Distance Between Structures/Adjacency to Institutional Use, for more details</p> <p><u>2. For properties within the jurisdiction of the Shoreline Management Act, this use may include a public access pier or boardwalk. See Chapter 83 KZC.</u></p>

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. May not use lands waterward of the ordinary high water mark to determine lot size or to calculate allowable density.
3. [The required yard abutting an unopened right-of-way shall be a side property rather than a front property line.](#)
4. May also be regulated under the Shoreline Master Program, refer to KZC Chapter 83

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS

Section 30.25	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						
.010	Detached Dwelling Units	None	12,500 sq. ft.	For those properties that conform to the standard shoreline setback requirements established in Chapter 83 KZC, either: a. 10' or b. The average of the existing front yards on the properties abutting the subject property to the		See Chapter 83 KZC'	5', but 2 side yards must equal at least 15' OR 5' in each side if Spec Reg 5 is met.	50%	For properties with a minimum of 45' of frontage along Lake Washington, 30' above average building elevation. See Special Reg 11 Otherwise, 25' above average building elevation	E	A	2.0 per unit.	<ol style="list-style-type: none"> No structure, other than a moorage structure, may be waterward of the ordinary high water mark. For the regulations regarding moorage, see Chapter 83 KZC. For this use, only one dwelling unit may be on each lot regardless of lot size. For properties located south of the Lake Ave W Street End park, the required front yard may be decreased to the average of the existing front yards on the properties abutting the subject property along both side property lines even if the required shoreline setback is not met. The dimensions of any required yard, other than as specifically listed, will be determined on a case-by-case basis, unless otherwise specified in this section. The City will use the setback for this use in RS zones as a guide for this use. The gross floor area of any floor above the first story at street or vehicular access easement level shall be reduced by a minimum of 15% of the floor area of the first story, subject to the following conditions: <ol style="list-style-type: none"> 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. The required floor area reductions shall be incorporated <u>along the entire length of the façade</u> of one or both facades facing the side property lines in order to provide separation between neighboring residences.. This provision shall not apply to residences that do not contain a ceiling height greater than 16 feet <u>only apply if a residence has more than one story above the street or vehicular access easement level</u>, as measured at the midpoint of the frontage of the subject property on the abutting right-of-way (Plate 36).

DIRECTIONS: FIRST, read down to find use...THEN, across for REGULATIONS

Section 30.25	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	Shoreline Setback/High Water Line						
			north and south. Otherwise, 20' See Spec. Reg. 3, 6, 8 and 11, -									<p>d.c. The calculation of gross floor area shall apply the provisions established in KZC 115.42-1. <u>Covered decks shall be included in gross floor area.</u> <u>Uncovered decks located along the side property lines on upper floors may contain only open railings and not solid railings.</u></p> <p>6. On corner lots with two required front yards, one may be reduced to the average of the front yards for the two adjoining properties fronting the same street as the front yard to be reduced. The applicant may select which front yard will be reduced (see Plate 24). The front required yard provisions shall not apply to public street ends located west of Waverly Way, which shall be regulated as a side yard.</p> <p>7. Chapter 115 KZC contains regulations regarding home occupations and other accessory uses, facilities and activities associated with this use.</p> <p>8. Garages shall comply with the requirements of KZC 115.43, including required front yard. These requirements are not effective within the disapproval jurisdiction of the Houghton Community Council.</p> <p>9. The required yard along the east side of the vehicular access easements known as 5th Ave W or Lake Avenue West is 0 feet.</p> <p>10. The required yard along the west side of the vehicular access easements known as 5th Ave W or Lake Avenue West is either 5 feet or the average of the existing rear yards on the properties abutting the subject property to the north and south. The garage shall be located to comply with the provisions for parking pads contained in KZC Section 105.47.</p> <p>11. For the increase in height all structures must conform to the standard shoreline setback requirements established in Chapter 83 KZC, or as otherwise approved</p>	

