RESOLUTION R-4847

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KIRKLAND APPROVING AMENDMENTS TO THE KIRKLAND SHORELINE MASTER PROGRAM AND THE ACCOMPANYING AMENDED SHORELINE ENVIRONMENT DESIGNATIONS MAP, REGULATIONS, RESTORATION PLAN AND CUMULATIVE IMPACTS ANALYSIS, AND DIRECTING THAT THE APPLICABLE SHORELINE MASTER PROGRAM AMENDMENT MATERIALS BE PROVIDED TO THE STATE DEPARTMENT OF ECOLOGY FOR ITS REVIEW, FILE ZON06-00017.

WHEREAS, the Washington Shoreline Management Act (RCW 90.58, referred to herein as "SMA") recognizes that shorelines are among the most valuable and fragile resources of the state, and that state and local government must establish a coordinated planning program to address the types and effects of development occurring along shorelines of state-wide significance; and

WHEREAS, the City of Kirkland ("City") will annex the Finn Hill neighborhood on June 1, 2011 containing a shoreline of state-wide significance; and

WHEREAS, the City is amending its Shoreline Master Program ("SMP") to incorporate the annexation area into the SMP along with miscellaneous amendments to its SMP pursuant to WAC 173-26; and

WHEREAS, on December 1, 2006, the City did issue a Final Shoreline Analysis Report, an inventory and characterization of the annexation's shorelines to assess ecological functions and ecosystem-wide processes operating within the annexation's shoreline jurisdiction and to serve at a baseline from which future development actions in the shoreline jurisdiction will be measured; and

WHEREAS, there has been public participation with respect to the SMP amendments, including: public meetings before the Kirkland Planning Commission and two open houses; and

WHEREAS, the Kirkland Planning Commission, after two study sessions and a public hearing, recommended approval of amendments to the SMP at its October 14, 2010 meeting; and

WHEREAS, the Kirkland City Council considered the SMP amendments at a meeting dated November 16, 2010; and

WHEREAS, the Kirkland City Council concluded that the SMP amendments will result in "no net loss" in shoreline ecological function relative to the baseline due to implementation of the amendments and will ultimately produce a net improvement in shoreline ecological function; and

WHEREAS, on November 16, 2010, the Kirkland City Council concluded that the SMP amendments are consistent with and meet the Guidelines established under WAC Chapter 173.26; and

WHEREAS, the Kirkland City Council concluded that the SMP is consistent with and implements Shoreline Management Act (RCW 90.58 and the Growth Management Act (RCW 36.70); and

WHEREAS, the State Department of Ecology is authorized under the SMA to approve, deny or proposed modifications to the City's SMP; and

WHEREAS, on October 14, 2010, the City's State Environmental Policy Act responsible official issued a Declaration of Non-Significance.

NOW, THEREFORE, be it resolved by the City Council of the City of Kirkland as follows:

Section 1. The City Council hereby approves amendments to the City of Kirkland Shoreline Management Plan as set forth in Attachments A through E attached to this resolution of intent and incorporated by reference:

Amendments to the Shoreline Environment Designation Map as set forth in Attachment A;

Amendment to the City's Shoreline Area Chapter of the Comprehensive Plan as set forth in Attachment B;

Amendments to the Zoning Code Chapters 83 and 141 as set forth in Attachment C;

Amendments to the Shoreline Restoration Plan set forth in Attachment D; and

Amendments to the Shoreline Cumulative Impacts Analysis as set forth in Attachment E.

Section 2. The City Council directs City staff to forward the appropriate amended SMP documents to the State Department of Ecology for formal review and approval.

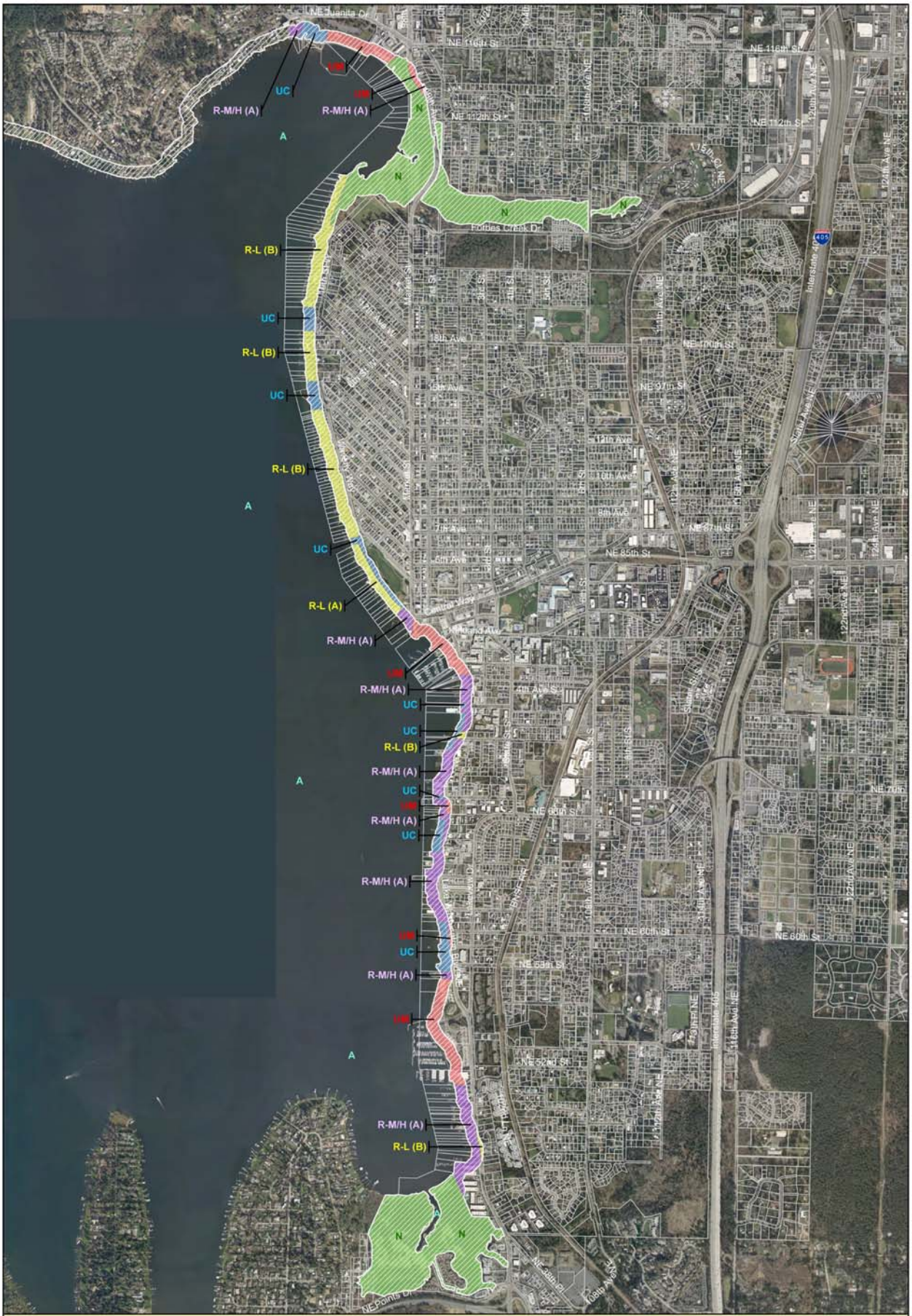
Passed by majority vote of the Kirkland City Council in open meeting this 16th day of November, 2010.

Signed in authentication thereof this 16th day of November, 2010.

MAYOR

Attest:

City Clerk



Shoreline Environment Designations

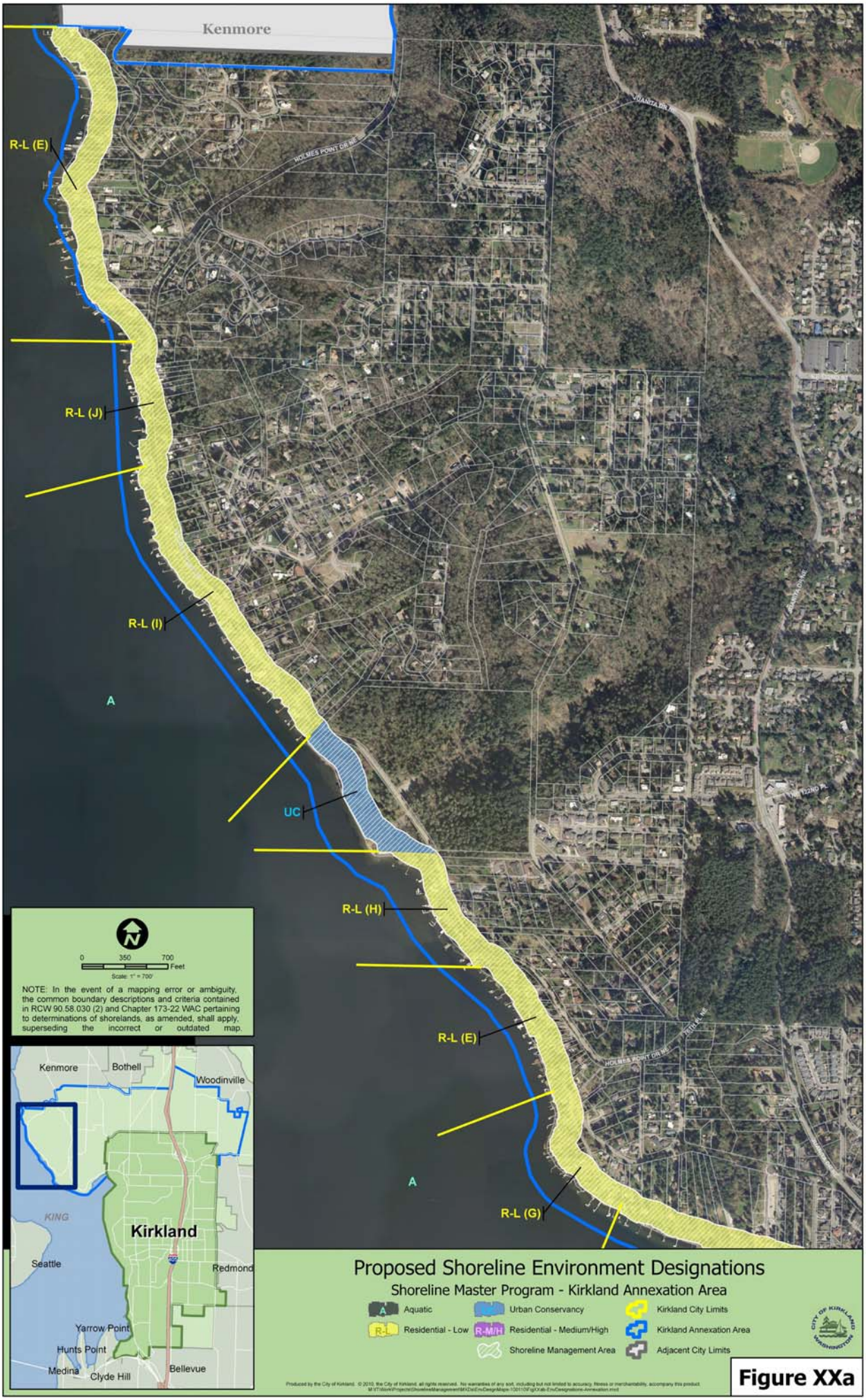
Shoreline Master Program - City of Kirkland

A	Aquatic	Shoreline Management Area
R-L	Residential - Low	Tax Parcels
N	Natural	
UC	Urban Conservancy	
UM	Urban Mixed	
R-M/H	Residential - Medium/High	

0 1,600 3,200 Feet

Scale: 1" = 1,600'

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.


Kenmore
R-L (E)
R-L (J)
R-L (I)
A
UC
R-L (H)
R-L (E)
A
R-L (G)
HOLMES POINT DR NE
JUANITA DR NE
NE 122ND PL
0
350
700
Feet
Scale: 1" = 700'
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.
Kenmore
Bothell
Woodinville
KING
Kirkland
Seattle
Redmond
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Proposed Shoreline Environment Designations
Shoreline Master Program - Kirkland Annexation Area
Aquatic
Residential - Low
Urban Conservancy
Residential - Medium/High
Shoreline Management Area
Kirkland City Limits
Kirkland Annexation Area
Adjacent City Limits
Figure XXa


ANNEXATION AREA
R-L (C)
R-M/H (B)
R-L (D)
R-L (E)
R-L (F)
R-L (G)
R-L (E)
R-L (G)
A
A
0 350 700 Feet
Scale: 1" = 700'
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.
Kenmore
Bothell
Woodinville
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Aquatic
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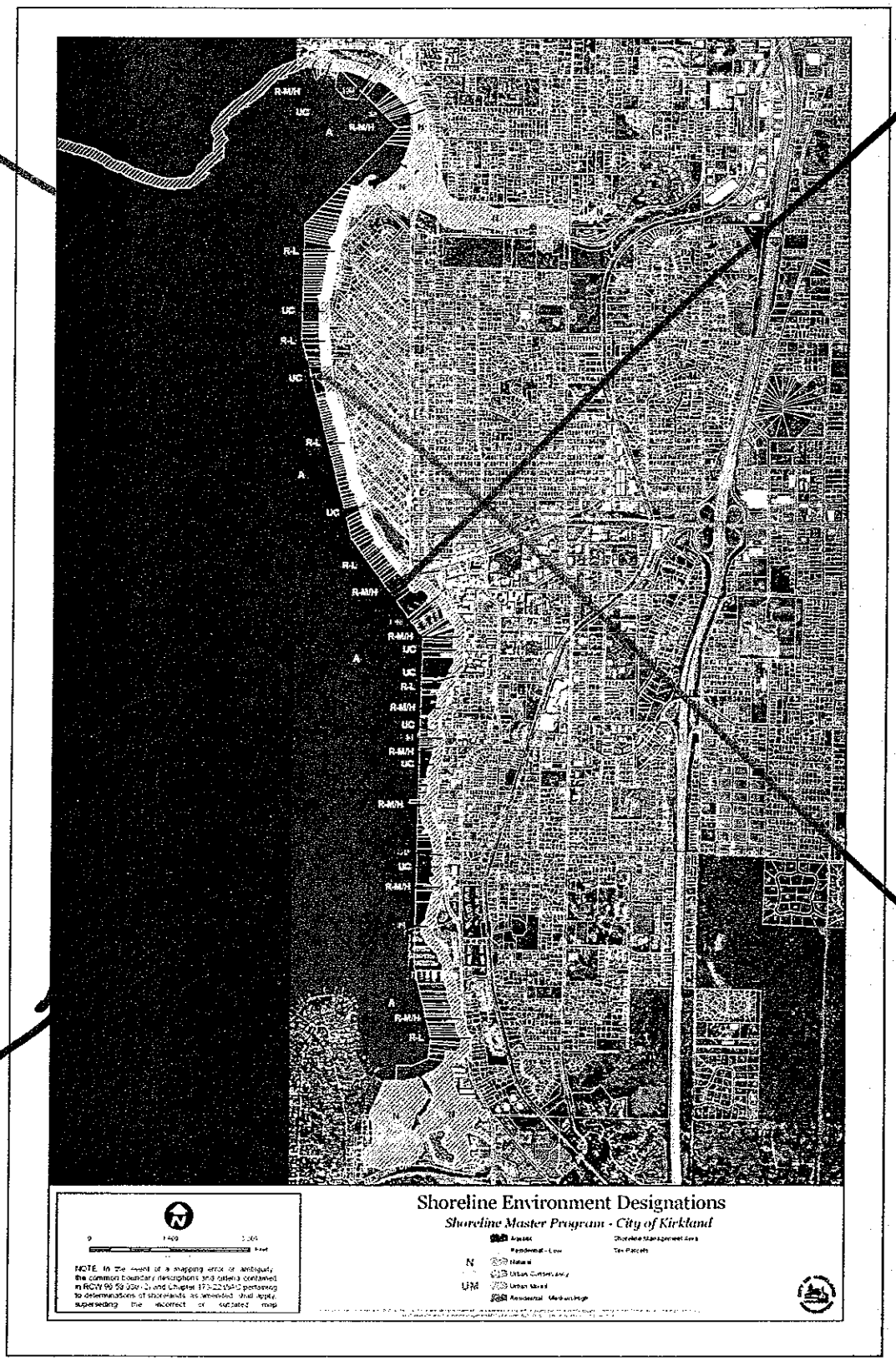
Residential - Low
Residential - Medium/High
Kirkland Annexation Area
Shoreline Management Area
Adjacent City Limits
Figure XXb

REVISE

COMP PLAN FIGURE

Figure SA-1: Shoreline Environment Designations Map



The chart is coded according to the following legend. SD = Substantial Development[1] CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
Retail Establishment providing new or used Boat Sales or Rental	X	SD[3]	X	CU[4,6]	SD[5]	See adjacent upland environments
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

[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

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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.	R-L (A) and (B) environments: 12,500 sq. ft. except for the following: • 5,000 sq. ft. if located on east side of Lake St S, at 7th Ave S; and • 7,200 sq. ft. to 12,500 sq. ft. if located on the east side of Lake Washington Blvd NE between NE	R-M/H (A) environment: 3,600 sq. ft, except 1,800 sq. ft. south of NE Juanita Drive R-M/H (B) environment: 1,800 sq. ft.	3,600 sq. ft.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				48th St. and NE 43rd St.. • 7,200 sq. ft. if subject to the Historic Preservation provisions of KMC 22.28.048 R-L(C) through (J) environments: • RSA 4 zone: maximum of 4 dwelling units per acre • RSA 6 zone: maximum of 6 dwelling units per acre' • RSA 8 zone: maximum of 8 dwelling units per acre.		

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'.	Residential-L (R-L) setbacks be as follows, except as otherwise specifically allowed through this Chapter: *(*see next page)*	R-M/H (A) environment: The greater of: a. 25' or b.15% of the average parcel depth. R-M/H (B) environment: 45' minimum	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.

Residential-L (R-L) setbacks shall be as follows, except as otherwise specifically allowed through this Chapter:

- R-L (A) Average adjacent setback of primary structures but not less than 15 ft. See Section 83.190.2 KZC for additional regulations.
- R-L (B) 30% of the average parcel depth but not less than 30 ft. and not required to be greater than 60 ft.
- R-L (C) 25% of average parcel depth but not less than 30 ft. and not required to be greater than 60 ft.
- R-L (D) 15% of average parcel depth but not less than 25 ft. and not required to be greater than 80 ft.
- R-L (E) 30% of average parcel depth but not less than 30 ft. and not required to be greater than 80 ft.
- R-L (F) 15% of average parcel depth but not less than 15 ft.
- R-L (G) 20% of average parcel depth but not less than 30 ft. and not required to be greater than 60 ft.
- R-L (H) 25% of average parcel depth but not less than 30 ft. and not required to be greater than 80 ft.
- R-L (I) 20% of average parcel depth but not less than 25 ft.
- R-L (J) 15 ft. minimum
- For properties containing non-conforming primary structures in the R-L (C) through R-L (I) shoreline environments, the average parcel depth percentage may be reduced by 5 percentage points, provided the following conditions are met:
    - The non-conforming structure must have been constructed prior to June 1, 2011, the date of annexation, based on the date of issuance of the occupancy permit.
    - The minimum setback standard is met for the shoreline environment; and
    - The required vegetation in the shoreline setback under KZC 83.400.3.b shall be increased from an average of 10 feet in depth from the OHWM to an average of 20 feet in depth from the OHWM. The vegetated portion may be a minimum of 10 feet in depth to allow for variation in landscape bed shape and plant placement. Total square feet of landscaped area shall be equal to a continuous 20-foot wide area.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				~~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:~~ ~~If dwelling units exist immediately adjacent to both the north and south property lines of the~~		

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
				~~subject property, then the shoreline setback of the primary structure on the subject property is the average of the shoreline setback of these dwelling units, but at a minimum width of 15 feet. If a 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 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

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	R-M/H (A) environment: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 R-M/H (B) environment: 1,800 sq. ft/unit.	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	R-M/H (A) environment: 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

[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.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
					R-M/H (B) environment: 45' minimum	south of NE 52nd Street, a mixed-use development approved under a master plan shall comply with the Master Plan provisions.
Maximum Lot Coverage	n/a	n/a	n/a	n/a	80%	80%, except in CBD zone 100% less area for shoreline vegetation if required.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
Maximum Height of Structure[2]	n/a	n/a	n/a	n/a	R-M/H (A) environment: 30' above ABE[5] R-M/H (B) environment: 35' above ABE	41' above ABE, except for the following: • 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]
Commercial Uses						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a

[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**
Shoreline Setback[1]	n/a	n/a	Water-dependent uses: 0', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shorelines jurisdictional area, if feasible, otherwise 50'.	n/a	R-M/H (A) environment: The greater of: a. 25' or b.15% of the average parcel depth R-M/H (B) environment: 45' minimum.	The greater of: a. 25'or b.15% of the average parcel depth. In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a master plan shall comply with the master plan provisions.
Maximum Lot Coverage	n/a	n/a	50%	n/a	80%	80%, except in the CBD. In CBD, 100% less area for shoreline vegetation if required.

[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**
Maximum Height of Structure[2]	n/a	n/a	If adjoining the Residential-L (A) or (B) ~~shoreline~~ environment, then 25' above ABE. Otherwise, 30' above ABE.[3]	n/a	RM-L (A) environment:30' above ABE[5] R-M/L (B) environment 35' above ABE	41' above ABE, except for: • 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-	Water-dependent	Same as Detached	R-M/H (A) environment:	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**
		dependent uses: 0', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shoreline area, if feasible, otherwise 50'.	uses: 0', Water-related use: 25', Water-enjoyment use: 30', Other uses: Outside of shorelines jurisdictional area, if feasible, otherwise 50'.	Dwelling Units uses~~30% of the average parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter.~~	The greater of: a. 25' or b.15% of the average parcel depth. R-M/H (B) environment 45' minimum	a. 25' or b.15% of the average parcel depth. In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.
Maximum Lot Coverage	n/a	10%	30%	30%	80%	80%, except 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 (A) or (B) ~~shoreline~~ environment, then 25' above ABE. Otherwise, 30'	R-L (A) and (B) environments: 25' above ABE R-L (C) through (J) environments:	R-M/H (A) environment: 30' above ABE[4] R-M/H (B) environment: 35' above ABE.	41' above ABE, except for the following: • In the CBD zones, if located on the east side of Lake St S, 55' above

[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.

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	**Natural**	**Urban Conservancy**	**Residential – L**	**Residential – M/H**	**Urban Mixed**
			above ABE[3]	30' above ABE		the abutting right-of-way measured at the midpoint of the frontage of the subject property. • In the PLA 15A zone located south of NE 52nd Street, mixed-use developments approved under a Master Plan shall comply with the Master Plan provisions.
Institutional Uses						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a
Shoreline Setback[1]	n/a	n/a	Outside of shorelines jurisdictional area, if feasible, otherwise 50'.	Same as Detached Dwelling Units uses ~~Outside of the shorelines jurisdiction al area, if feasible, otherwise 30% of the average parcel depth, except in no case~~	R-M/H (A) environment: The greater of: a. 25' or b.15% of the average parcel depth. R-M/H (B) environment: 45' minimum	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**
				~~is the shoreline setback permitted to be less than 30 ft. or required to be greater than 60 ft., except as otherwise specifically allowed through this Chapter.~~		
Maximum Lot Coverage	n/a	n/a	50%	50%	80%	80%, except 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 (A) or (B) ~~shoreline~~ environment, then 25' above ABE. Otherwise, 30' above ABE[3]	R-L (A) and (B) environments: 25' above ABE R-L (C) through (J) environments: 30' above ABE	R-M/H (A) environment: 30' above ABE[5] R-M/H (B) environment: 35' above ABE.	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	Same as	R-M/H (A) environment:	The greater of:

[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**
			shorelines jurisdictional, if feasible, otherwise 50'.	Detached Dwelling Units uses ~~30% of the average parcel depth, except in no case is the shoreline setback permitted to be less than 30 feet or required to be greater than 60 feet, except as otherwise specifically allowed through this Chapter.~~	The greater of: a. 25' or b.15% of the average parcel depth. R-M/H (B) environment: 45' minimum	a. 25' or b.15% of the average parcel depth.
Maximum Lot Coverage	n/a	n/a	n/a	n/a	n/a	n/a
Maximum Height of Structure[2]	n/a	n/a	n/a	n/a	n/a	n/a
Utilities						
Minimum Lot Size	n/a	n/a	n/a	n/a	n/a	n/a

[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**
Shoreline Setback[1]	n/a	Outside of shoreline area, if feasible, otherwise 50'.	Outside of shoreline jurisdictional, if feasible, otherwise 50'.	Same as Detached Dwelling Units uses~~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.~~	R-M/H (A) environment: The greater of: a. 25' or b.15% of the average parcel depth. R-M/H (B) environment: 45' minimum	The greater of: a. 25' or b.15% of the average parcel depth.
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 (A) or (B) ~~shoreline~~ environment, then	R-L (A) and (B) environments: 25' above ABE R-L (C) through	R-M/H (A) environment: 30' above ABE R-M/H (B) environment:	41' above ABE, except: • In the CBD zones if located on the east side of Lake St South, 55'

[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

DEVELOPMENT STANDARDS	SHORELINE ENVIRONMENT					
	Aquatic	Natural	Urban Conservancy	Residential – L	Residential – M/H	Urban Mixed
			25’ above ABE. Otherwise, 30’ above ABE[3]	(J) environments: 30’ above ABE	35’ above ABE.[5]	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.[5]

[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
[5] Structure height may be increased to 35’ above ABE. See KZC 83.190.4

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.

   ~~c.~~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	**Pilings or moorage piles shall not be treated with pentachlorophenol, creosote, chromated copper arsenate (CCA) or comparably toxic compounds.** **First set of pilings for a pier or dock shall be located no closer than 18 ft from OHWM.** **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.** **Moorage buoys are not permitted when a pier or dock is located on a subject property.** **Maximum 2 moorage piles per detached dwelling unit, including existing piles** **Maximum 4 moorage piles for joint use piers or docks, including existing piles**

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	The following improvements shall be removed: 1. Existing skirting shall be removed and may not be replaced. 2. e~~E~~xisting in-water and overwater structures located within 30 feet of the OHWM other than the subject replacement pier. Existing in-water structures, such as boatlifts, may be shifted farther waterward to comply with this requirement. Existing or authorized shoreline stabilization measures may be retained.~~shall be removed~~.

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	Must demonstrate that there is a need for the enlargement of an existing pier or dock Examples of need include, but are not limited to safety concerns or inadequate depth of water
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	Planting and other mitigation as described in KZC 83.270.5 The following improvements shall be removed: 1. Existing skirting shall be removed and may not be replaced. 2. 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 being enlarged. 3. For the RSA zone, any other piers or docks, and covered boat moorage structures located on the subject property, except for boat canopies that comply with KZC 83.270, must be removed.

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.

~~c.~~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)	**Requirements**
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	Plantings and other mitigation as described in KZC 83.280.6 above The following improvements shall be removed: 1. Existing skirting shall be removed and may not be replaced. 2. 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~~ 3. For the RMA zone, any other piers or docks and covered boat moorage structures located on the subject property, except for boat canopies that comply with KZC 83.280, must be removed.

AMENDMENTS TO THE VIEW CORRIDOR REGULATIONS

83.410 View Corridors

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

2. Standards -

   a. For properties lying waterward of Lake Washington Boulevard, ~~and~~ Lake Street South and NE Juanita Drive in the Residential M-H shoreline environment designation, a minimum view corridor of thirty (30) percent of the average parcel width must be maintained. A view of the shoreline edge of the subject property shall be provided if existing topography, vegetation, and other factors allow for this view to be retained.

   b. The view corridors approved for properties located in the Urban Mixed shoreline environment established under a zoning master plan or zoning permit approved under the provisions of Chapter 152 KZC shall continue to comply with those requirements. Modifications to the proposed view corridor shall be considered under the standards established in this Chapter and the zoning master plan.

3. Exceptions - The requirement for a view corridor does not apply to the following:

   a. The following water-dependent uses:

      1) Piers and docks associated with a marina or moorage facility for a commercial use;

      2) Piers, docks, moorage buoys, boatlifts and canopies associated with detached, attached and stacked Unit uses; and

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

      4) Public access pier or boardwalk

      5) Boat launch

   b. Public parks

   c. Properties located in the Urban Mixed shoreline environment within the Central Business District zone and within the Juanita Business District zone.

4. View corridor location - The location of the view corridor shall be designed to meet the following location standards and must be approved by the Planning Official.

   d. If the subject property does not directly abut the shoreline, the view corridor shall be designed to coincide with the view corridor of the properties to the west.

   e. The view corridor must be adjacent to one of the two side property lines that intersect the OHWM ~~either the north or south property line~~ of the subject property, whichever will result in the widest view corridor, considering the following, in order of priority:

AMENDMENTS TO STREAMS REGULATIONS FOR ANNEXATION AREA

83.510 Streams

1. Applicability – The following provisions shall apply to streams and stream buffers located within the shorelines jurisdiction, in place of provisions contained in Chapter 90 KZC. Provisions contained in Chapter 90 KZC that are not addressed in this section continue to apply, such as bond or performance security, dedication and liability, but the following subsections shall not apply within the shorelines jurisdiction:
   a. KZC 90.20 – General Exceptions
   b. KZC 90.30 – Definitions
   c. KZC 90.75 – Minor Lakes
   d. KZC 90.140 – Reasonable Use Exception
   e. KZC 90.160 – Appeals
   f. KZC 90.170 – Planning/Public Works Official Decisions – Lapse of Approval
2. Activities in or Near Streams – No Land surface modification shall occur and no improvements shall be located in a stream or its buffer except as provided in KZC 83.510.3 through 83.510.11.
3. Stream Determinations - The Planning Official shall determine whether a stream or stream buffer is present on the subject property using the following provisions. During or immediately following a site inspection, the Planning Official shall make an initial assessment as to whether a stream exists on any portion of the subject property or surrounding area (which shall be the area within approximately 100 feet of the subject property, except 200 feet in the shoreline area for the RSA and RMA zones and O. O. Denny Park).

   If the initial site inspection indicates the presence of a stream, the Planning Official shall determine, based on the definitions contained in this Chapter and after a review of all information available to the City, the classification of the stream.

   If this initial site inspection does not indicate the presence of a stream on or near the subject property, no additional stream study will be required.

   If an applicant disagrees with the Planning Official's determination that a stream exists on or near the subject property or the Planning Official's classification of a stream, the applicant shall submit a report prepared by a qualified professional approved by the Planning Official that independently evaluates the presence of a stream or the classification of the stream, based on the definitions contained in this Chapter.

   The Planning Official shall make final determinations regarding the existence of a stream and the proper classification of that stream. The Planning Official's decision under this section shall be used for review of any development activity proposed on the subject property for which an application is received within five (5) years of the decision; provided, that the Planning Official may modify any decision whenever physical circumstances have markedly and demonstrably changed on the subject property or the surrounding area as a result of natural processes or human activity.
4. Stream Buffers and Setbacks
   a. Stream Buffers – No land surface modification shall occur and no improvement shall be located in a stream or its buffer, except as provided in this section. See also KZC 83.490.3, Trees in Critical Areas or Critical Area Buffers; and KZC 83.490.4, Mitigation and Restoration Plantings in Critical Areas and Critical Area Buffers.

      Required or standard buffers for streams are as follows:

Stream Buffers

The following table applies to all shoreline areas other than the RSA and RMA zones and O. O. Denny Park:

Stream Class	Primary Basins	Secondary Basins
A	75 feet	N/A
B	60 feet	50 feet
C	35 feet	25 feet

The following table applies to the shoreline areas in the RSA and RMA zones and O. O. Denny Park:

Stream Types	Stream Buffer Width
Type F: All segments of aquatic areas that are not shorelines of the state (Lake Washington) and that contain fish or fish habitat.	115 feet
Type N: All segments of aquatic areas that are not shorelines (Lake Washington) or Type F stream and that are physically connected to a shoreline of the state (Lake Washington) or a Type F stream by an above-ground channel system, stream or wetland.	65 feet
Type O: All segments of aquatic areas that are not shorelines of the state (Lake Washington), Type F stream or Type N stream and that are not physically connected to a shoreline of the state (Lake Washington), a Type F stream or a Type N stream by an above-ground channel system, pipe, culvert, stream or wetland.	25 feet

(Note: Stream types F, N and O reflect the Department of Natural Resources' classification system)

Stream buffers shall be measured from each side of the OHWM of the stream, except that where streams enter or exit pipes, the buffer shall be measured in all directions from the pipe opening. Essential improvements to accommodate required vehicular, pedestrian, or utility access to the subject property may be located within those portions of stream buffers that are measured toward culverts from culvert openings.

Where a legally established, improved road right-of-way or structure divides a stream buffer, the Planning Official may approve a modification of the required buffer in that portion of the buffer isolated from the stream by the road or structure, provided the isolated portion of the buffer:

1) Does not provide additional protection of the stream from the proposed development; and

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

b. Buffer Setback – Structures shall be set back at least 10 feet from the designated or modified stream buffer. The City may allow within this setback minor improvements that would have no potential adverse effect during their construction, installation, use, or maintenance to fish, wildlife, or their habitat or to any vegetation in the buffer or adjacent stream.

c. Storm Water Discharge – Necessary discharge of storm water through stream buffers and buffer setbacks may be allowed on the surface, but a piped system discharge is prohibited unless approved pursuant to this section. Storm water outfalls (piped systems) may be located within the buffer setback specified in subsection (b) of this section and within the buffers specified in subsection (a) of this section only when the City determines, based on a

report prepared by a qualified professional under contract to the City and paid for by the applicant, that surface discharge of storm water through the buffer would clearly pose a threat to slope stability; and if the storm water outfall will not:

1) Adversely affect water quality;

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

3) Adversely affect drainage or storm water detention capabilities;

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

5) Be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas.

Storm water facilities shall minimize potential impacts to the stream or stream buffer by meeting the following design standards:

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

2) Outfalls must be designed to reduce the chance of adverse impacts as a result of concentrated discharges from pipe systems. This may include:

   a) Installation of the discharge end as far as feasible from the sensitive area, and

   b) Use of appropriate energy dissipation at the discharge end.

d. Water Quality Facilities –The City may only approve a proposal to install a water quality facility within the outer one-half (1/2) of a stream buffer if a suitable location outside of the buffer is not available and only if:

1) It will not adversely affect water quality;

2) It will not adversely affect fish, wildlife, or their habitat;

3) It will not adversely affect drainage or storm water detention capabilities;

4) It will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

5) It will not be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas;

6) The existing buffer is already degraded as determined by a qualified professional;

7) The installation of the water quality facility would be followed immediately by enhancement of an area equal in size and immediately adjacent to the affected portion of the buffer; and

8) Once installed, it would not require any further disturbance or intrusion into the buffer.

The City may only approve a proposal by a public agency to install a water quality facility elsewhere in a stream buffer if Criteria 9 – 11 (below) are met in addition to 1 – 8 (above):

9) The project includes enhancement of the entire on-site buffer;

10) The project would provide an exceptional ecological benefit off-site; and

11) There is no feasible alternative proposal that results in less impact to the buffer.

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

1) All utility work in improved City rights-of-way;

2) All normal and routine maintenance, operation and reconstruction of existing roads, streets, and associated rights-of-way and structures; and

3) Construction of sewer or water lines that connect to existing lines in a sensitive area or buffer where no feasible alternative location exists based on an analysis of technology and system efficiency.

All affected critical areas and buffers shall be expeditiously restored to their pre-project condition or better. For purposes of this subsection only, "improved City rights-of-way" include those rights-of-way that have improvements only underground, as well as those with surface improvements.

f. Minor Improvements – Minor improvements may be located within the sensitive area buffers specified in subsection 83.510.4. These minor improvements shall be located within the outer one-half (1/2) of the sensitive area buffer, except where approved stream crossings are made. The City may only approve a proposal to construct a minor improvement within a sensitive area buffer if:

1) It will not adversely affect water quality;

2) It will not adversely affect fish, wildlife, or their habitat;

3) It will not adversely affect drainage or storm water detention capabilities;

4) It will not lead to unstable earth conditions or create erosion hazards or contribute to scouring actions;

5) It will not be materially detrimental to any other property in the area of the subject property or to the City as a whole, including the loss of significant open space or scenic vistas; and

6) It supports public or private shoreline access.

The City may require the applicant to submit a report prepared by a qualified professional that describes how the proposal will or will not comply with the criteria for approving a minor improvement.

5. Stream Buffer Fence or Barrier - Prior to beginning development activities, the applicant shall install a 6-foot-high construction-phase chain link fence or equivalent fence, as approved by the Planning Official and consistent with City standards, along the upland boundary of the entire stream buffer with silt screen fabric. The construction-phase fence shall remain upright in the approved location for the duration of development activities.

Upon project completion, the applicant shall install between the upland boundary of all stream buffers and the developed portion of the site, either (1) a permanent three- to four-foot-tall split rail fence; or (2) equivalent barrier, as approved by the Planning Official. Installation of the permanent fence or equivalent barrier must be done by hand where necessary to prevent machinery from entering the stream or its buffer.

6. Permit Process

The City shall consolidate and integrate the review and processing of the critical areas aspects of the proposal with the shoreline permit required for the proposed development activity, except as follows:

Development Proposal	Permit Process
Stream Relocations or Modifications, or Stream Buffer Modifications affecting more than one-third (1/3) of the standard buffer, or more than one-fourth (1/4) of the standard buffer in the shoreline areas of the RSA and RMA zones and O. O. Denny Park	Shoreline Variance pursuant to Process IIA, described in Chapter 141 KZC

Stream Buffer Modifications affecting one-third (1/3) or less than ~~one-third (1/3) of~~ the standard buffer, or one fourth (1/4) or less than the standard buffer in the shoreline areas of the RSA and RMA zones and O.O. Denny Park	Underlying development permit or development activity
Bulkheads or other hard stabilization measures in Stream, Stream Crossings or Stream Rehabilitation	Underlying development permit or development activity

7. Stream Buffer Modification

   a. Departures from the standard buffer requirements shall be approved only after the applicant has demonstrated consideration and implementation of appropriate mitigation sequencing as outlined in KZC 83.490.2.

   b. Approved departures from the standard buffer requirements of KZC 83.510.4.a) allow applicants to modify the physical and biological conditions of portions of the standard buffer for the duration of the approved project. These approved departures from the standard buffer requirements do not permanently establish a new regulatory buffer edge. Future development activity on the subject property may be required to reestablish the physical and biological conditions of the standard buffer.

   c. Types of Buffer Modification – Buffers may be reduced through one of two means, either (1) buffer averaging; or (2) buffer reduction with enhancement. A combination of these two buffer reduction approaches shall not be used.

      1) Buffer averaging requires that the area of the buffer resulting from the buffer averaging be equal in size and quality to the buffer area calculated by the standards specified in KZC 83.510.4(a). Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.510.4(a), or not by more than one-fourth (1/4) in the shoreline areas of the RSA and RMA zones and O.O. Denny Park. Buffer averaging calculations shall only consider the subject property.

      2) Buffers may be decreased through buffer enhancement. The applicant shall demonstrate that through enhancing the buffer (by removing invasive plants, planting native vegetation, installing habitat features such as downed logs or snags, or other means) the reduced buffer will function at a higher level than the standard existing buffer. The reduced on-site buffer area must be planted and maintained as needed to yield over time a reduced buffer that is equivalent to an undisturbed Puget Lowland forests in density and species composition.

         A buffer enhancement plan shall at a minimum provide the following: (1) a map locating the specific area of enhancement; (2) a planting plan that uses native species, including groundcover, shrubs, and trees; and (3) a monitoring and maintenance program prepared by a qualified professional consistent with the standards specified in KZC 83.500.8.

         Buffers may not be reduced at any point by more than one-third (1/3) of the standards in KZC 83.510.4.a), or not by more than one-fourth (1/4) for the shoreline areas in the RSA and RMA zones and O.O. Denny Park.

   d. Decisional Criteria – An improvement or land surface modification may only be approved in a stream buffer only if:

      1) The project demonstrates consideration and implementation of appropriate mitigation sequencing as outlined in KZC 83.490.2.

      2) It is consistent with *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998),and the *Kirkland Sensitive Areas Regulatory Recommendations Report*

(Adolfson Associates, Inc., 1998) or the Shoreline Restoration Plan (The Watershed Company 2010);

3) It will not adversely affect water quality;

4) It will not adversely affect fish, wildlife, or their habitat;

5) It will not have an adverse effect on drainage and/or storm water detention capabilities;

6) It will not lead to unstable earth conditions or create an erosion hazard or contribute to scouring actions;

7) It will not be materially detrimental to any other property or the City as a whole;

8) Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;

9) All exposed areas are stabilized with vegetation normally associated with native stream buffers, as appropriate; and

10) There is no practicable or feasible alternative development proposal that results in less impact to the buffer.

As part of the modification request, the applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's consultant. The report shall assess the habitat, water quality, storm water detention, ground water recharge, and erosion protection functions of the buffer; assess the effects of the proposed modification on those functions; and address the 10 criteria listed in this subsection above.

8. Shoreline Variance for Stream Relocation or Modification or Stream Buffer Modification An applicant who is unable to comply with the specific standards of KZC 83.510 must obtain a shoreline variance, pursuant to KZC 141.70.3 and meet the criteria set forth in WAC 183-27-170. In addition, the following City submittal requirements and criteria must also be met:

a. Submittal Requirements – As part of the shoreline variance request, the applicant shall submit a report prepared by a qualified professional and fund a review of this report by the City's qualified professional. The report shall include the following:

1) A determination of the stream and the stream buffer based on the definitions contained in KZC 83.80;

2) An analysis of whether any other proposed development with less impact on the sensitive area and sensitive area buffer is feasible;

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

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

5) A description of protective measures that will be undertaken, such as siltation curtains, hay bales and other siltation prevention measures, and scheduling the construction activity to avoid interference with wildlife and fisheries rearing, nesting or spawning activities;

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

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

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

9) Information specified in KZC 83.500.8 for Compensatory Mitigation; and

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

b. Decisional Criteria – The City may grant approval of a shoreline variance only if all of the following criteria are met:

1) No other permitted type of land use for the property with less impact on the sensitive area and associated buffer is feasible;

2) The proposal has the minimum area of disturbance;

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

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

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

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

7) The granting of the shoreline variance will not confer on the applicant any special privilege that is denied by this Chapter to other lands, buildings, or structures under similar circumstances.

9. Stream Relocation or Modification - The City may only permit a stream to be relocated or modified if water quality, conveyance, fish and wildlife habitat, wetland recharge (if hydrologically connected to a wetland), and storm water detention capabilities of the stream will be significantly improved by the relocation or modification. Convenience to the applicant in order to facilitate general site design shall not be considered.

A proposal to relocate or modify a ~~Class A~~ stream may only be approved if the Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project. Furthermore, all modifications shall be consistent with *Kirkland's Streams, Wetlands and Wildlife Study* (The Watershed Company, 1998) and the *Kirkland Sensitive Areas Regulatory Recommendations Report* (Adolfson Associates, Inc., 1998), and the *Shoreline Restoration Plan* (The Watershed Company 2010).

If the proposed stream activity will result in the creation or expansion of a stream or its buffer on any property other than the subject property, the City shall not approve the plan until the applicant submits to the City a copy of a statement signed by the owners of all affected properties, in a form approved by the City Attorney and recorded in the King County Bureau of Elections and Records, consenting to the sensitive area and/or buffer creation or increase on such property.

Prior to the City's decision to authorize approval of a stream relocation or modification, the applicant shall submit a stream relocation/modification plan prepared by a qualified professional approved by the City. The cost of producing, implementing, and monitoring the stream relocation/modification plan, and the cost of review of that plan by the City's stream consultant shall be borne by the applicant. This plan shall contain or demonstrate the following:

a. A topographic survey showing existing and proposed topography and improvements;

b. The filling and revegetation of the existing stream channel;

c. A proposed phasing plan specifying time of year for all project phases;

d. The ability of the new stream channel to accommodate flow and velocity of 100-year storm events; and

e. The design and implementation features and techniques listed below, unless clearly and demonstrably inappropriate for the proposed relocation or modification:

1) The creation of natural meander patterns;

2) The formation of gentle and stable side slopes, no steeper than two feet horizontal to one-foot vertical, and the installation of both temporary and permanent erosion-control features (the use of native vegetation on stream banks shall be emphasized);

3) The creation of a narrow sub-channel (thalweg) against the south or west stream bank to maximize stream shading;

4) The utilization of native materials;

5) The installation of vegetation normally associated with streams, emphasizing native plants with high food and cover value for fish and wildlife;

6) The creation of spawning areas, as appropriate;

7) The re-establishment of fish population, as appropriate;

8) The restoration of water flow characteristics compatible with fish habitat areas;

9) Demonstration that the flow and velocity of the stream after relocation or modification shall not be increased or decreased at the points where the stream enters and leaves the subject property, unless the change has been approved by the City to improve fish and wildlife habitat or to improve storm water management;

10) A written description of how the proposed relocation or modification of the stream will significantly improve water quality, conveyance, fish and wildlife habitat, wetland recharge (if hydrologically connected to a wetland), and storm water detention capabilities of the stream; and

11) A monitoring and maintenance plan consistent with KZC 83.500.11 for wetlands.

Prior to diverting water into a new stream channel, a qualified professional approved by the City shall inspect the completed new channel and issue a written report to the City stating that the new stream channel complies with the requirements of this section. The cost for this inspection and report shall be borne by the applicant.

10. Stream Bank Protection

a. General –

1) Stream bank protection measures shall be selected to address site- and reach-based conditions and to avoid habitat impacts.

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

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

b. Submittal Requirements for Streambank Protection Measures – An assessment prepared by a qualified professional containing t~~T~~he following shall be submitted to the City:

~~An assessment prepared by a qualified professional containing the following:~~

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

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

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

1) It is not located within a wetland or between a wetland and a stream;

2) It is needed to prevent significant erosion;

3) The use of vegetation and/or other biological materials would not sufficiently stabilize the stream bank to prevent significant erosion;

4) The applicant submits a plan prepared by a qualified professional approved by the City that shows a bulkhead and implementation techniques that meet the following criteria:

a) There will be no adverse impact to water quality;

b) There will be no adverse impact to fish, wildlife, and their habitat;

c) There will be no increase in the velocity of stream flow, unless approved by the City to improve fish habitat;

d) There will be no decrease in flood storage volumes;

e) The installation, existence, nor operation of the bulkhead will lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

f) The installation, existence nor operation of the bulkhead or other hard stabilization measures will be detrimental to any other property or the City as a whole.

5) The Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project.

d. The stream bank protection shall be designed consistent with Washington Department of Fish and Wildlife's *Integrated Streambank Protection Guidelines* (2003, or as revised). The stabilization measure shall be designed and constructed to minimize the transmittal of water current and energy to other properties. Changes in the horizontal or vertical configuration of the land shall be kept to a minimum. Fill material used in construction of a bulkhead shall be non-dissolving and non-decomposing. The applicant shall also stabilize all exposed soils by planting native riparian vegetation with high food and cover value for fish and wildlife.

11. Stream Crossings - Stream crossings are not permitted, except as specified in this section. The City shall review and decide upon an application to cross a stream with an access drive, driveway, or street. A stream crossing shall be allowed only if:

a. The stream crossing is necessary to provide required vehicular, pedestrian, or utility access to the subject property. Convenience to the applicant in order to facilitate general site design shall not be considered;

b. The Washington Department of Fish and Wildlife issues a Hydraulic Project Approval for the project; and

c. The applicant submits a plan prepared by a qualified professional approved by the City that shows the crossing and implementation techniques that meet the following criteria:

1) There will be no adverse impact to water quality;

2) There will be no adverse impact to fish, wildlife, and their habitat;

3) There will be no increase in the velocity of stream flow, unless approved by the City to improve fish habitat;

4) There will be no decrease in flood storage volumes;

5) The installation, existence, nor operation of the stream crossing will lead to unstable earth conditions or create erosion hazards or contribute to scouring actions; and

6) The installation, existence nor operation of the stream crossing will be detrimental to any other property or to the City as a whole.

d. The stream crossing shall be designed and constructed to allow passage of fish inhabiting the stream or that may inhabit the stream in the future. The stream crossing shall be

designed to accommodate a 100-year storm event. The applicant shall at all times maintain the crossing so that debris and sediment do not interfere with free passage of water, wood and fish. The City shall require a security or perpetual maintenance agreement under 90 KZC for continued maintenance of the stream crossing.

e. A bridge is the preferred stream crossing method. If a bridge is not economically or technologically feasible, or would result in greater environmental impacts than a culvert, a proposal for a culvert may be approved if the culvert complies with the criteria in this subsection and is ~~must be~~ designed consistent with Washington Department of Fish and Wildlife's *Design of Road Culverts for Fish Passage* (2003, or as revised).

f. If a proposed project requires approval through a shoreline conditional use, the City may require that any stream in a culvert on the subject property be opened, relocated, and restored consistent with the provisions of this subsection.

NO OTHER CHANGES TO SECTION 83.510

AMENDMENTS TO NONCONFOMANCE 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, except as specifically permitted under KZC 83.550~~.

3. No change

4. No change

5. Certain Nonconformances Specifically Regulated

a. No change

b. Non-Conforming Structure –

1) A nonconforming structure that is moved any distance must be brought into conformance.

2) A nonconforming structure may be maintained, repaired, altered, remodeled and continued, provided that a nonconforming structure shall not be enlarged, intensified, increased or altered in any way that increases the degree of the nonconformity, except as specifically permitted under KZC 83.550.

3) ~~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~~ are the repair or maintenance of structural members, and the alteration to existing windows and/or doors or the addition of new windows and/or doors for structures landward of the OHWM~~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.~~, if all of the following criteria are met

a) Floor area is not increased;

b) The location of an exterior wall is not modified in a manner that increases the degree of nonconformance; and

c) The cost of work on a nonconforming structure in any one-year period does not exceed 50 percent of the replacement cost of the structure.

4) The exterior walls and roofs of a non-conforming overwater covered moorage may be replaced with transparent or translucent material.

5) 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 or constructing a new primary structure, the following existing structures must be removed or otherwise brought into conformance:

(a) Non-conforming accessory structures located in the required shoreline setback, including decks, patios or similar improvements;

(b) Additional pier or dock located on the subject property in the RSA or RMA zone; and

(c) Covered boat moorage structure located on the subject property in the RSA or RMA zone, except for boat canopies that comply with KZC 83.270.9.

~~4) 4. If accessory structures are located within the shoreline setback, these existing nonconforming structures must be brought into conformance if the applicant is making an alteration to the primary structure, the cost of which exceeds 50 percent of the replacement cost of the structure.~~

6) If the applicant is making an addition to a pier or dock in the RSA or RMA zone, the following existing structures must be removed or otherwise brought into conformance:

(a) Additional pier or dock located on the subject property more than 30 feet waterward of the OHWM; and

(b) Covered boat moorage structure located on the subject property more than 30 feet waterward of the OHWM, except for boat canopies that comply with KZC 83.270 for the RSA zone or KZC 83.280 for the RMA zone.

7) ~~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.

8) ~~5)~~ Non-conforming structures that are expanded or enlarged within the shoreline setback must obtain a shoreline variance; provided that, a non-conforming detached dwelling unit use or a water-dependent, water-related, water-oriented use as defined in Chapter 83 KZC may be enlarged without a shoreline variance where the following provisions apply:

a) The non-conforming structure must have been constructed prior to December 1, 2006, the date of the City's *Final Shoreline Analysis Report.*

b) Before implementing this provision, the applicant shall determine whether the provisions of KZC 83.380 would allow for a reduced setback, based upon existing conditions on the subject property.

c) The structure must be located landward of the OHWM.

d) Any enlargement of the building footprint within the shoreline setback shall not exceed 10 percent of the gross floor area of the existing primary structure ~~dwelling unit~~ prior to the expansion. Other enlargements, such as upper floor additions, may be permitted if the addition is consistent with other provisions contained in this subsection.

e) The enlargement shall not extend further waterward than the existing primary ~~residential~~ structure. For purposes of this subsection, the improvements allowed within the shoreline setback as established in KZC 83.190, such as bay windows, chimneys, greenhouse windows, eaves, cornices, awnings and canopies shall not be used in determining the most waterward location of the building (see Plate 44).

f) The applicant must restore a portion of the shoreline setback area ~~with riparian vegetation~~ to offset the impact, such that the shoreline setback area will function at an equivalent or higher level than the existing conditions. The restoration plan shall be prepared by a qualified professional and shall be reviewed by the Planning Official and/or a consultant who may approve, approve with conditions, or deny the request.

If the proposal is consistent with the standards provided in this subsection, the Planning Official shall approve the plan or may impose conditions to the extent necessary to make the plan consistent with the provisions. If the proposal is denied, the applicant shall be informed of the deficiencies that caused its disapproval so as to

provide guidance for its revision and resubmittal. The cost of producing and implementing the restoration plan and the review by City staff and/or a consultant shall be borne by the applicant. Examples include, but are not limited to:

i. Installation of additional native vegetation within the shoreline setback that would otherwise not be required under this Chapter. At a minimum, the area of shoreline setback restoration and/or enhancement shall be equivalent to the area impacted by the improvement.

ii. Removal of an existing hard shoreline stabilization structure covering at least 15 linear feet of the lake frontage that is located at, below, or within 5 feet landward of the OHWM and subsequent restoration of the shoreline to a natural or semi-natural state, including creation or enhancement of nearshore shallow-water habitat.

iii. Setting back hard shoreline stabilization structures or portions of hard shoreline stabilization structures from the OHWM and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography and beach/substrate composition.

iv. Other shoreline restoration projects either on-site or off-site within the city's shoreline jurisdiction area that are demonstrated to result in an improvement to existing shoreline ecological functions and processes.

g) The applicant must comply with the best management practices contained in KZC 83.480 addressing the use of fertilizer, herbicides and pesticides as needed to protect lake water quality.

h) The applicant shall use "fully shielded cut off" light fixtures as defined by the Illuminating Engineering Society of North America (IESNA), or other appropriate measure to conceal the light source from adjoining uses and the lake, and direct the light toward the ground for any exterior light sources located on the west façade of the residence or other façades with exterior light sources that are directed towards the lake.

i) The remodel or expansion will not cause adverse impacts to shoreline ecological functions and/or processes as described on KZC 83.360.

j) The provision contained in KZC 83.550.5.b.5 shall only be used once within any 5-year period.

***Remaining subsections in KZC 83.550.5.b shall be renumbered as 9) and* 8)**

MISCELLANEOUS AMENDMENTS TO CHAPTERS 83 and 141

Chapter 83 Shoreline Management

Section 83.80 Definitions (renumbering of definitions shall occur with final codification)

7. Average Parcel Depth: The average of the distance from the OHWM to edge of the public right-of-way or vehicular access easement, whichever provides direct access to the existing or proposed primary structure on the subject property, as measured along the side property lines or the extension of those lines where the water frontage of the subject property ends, the center of the OHWM of the subject property and the quarter points of the OHWM of the subject property. See Plate 19. For those circumstances where a parcel or a portion of a parcel does not abut a public right-of-way or easement road, the average parcel depth shall be measured from the OHWM to the edge of the ~~west~~ property line opposite of and generally parallel to the OHWM using the same method as described above. At the northern terminus of the 5th Ave West access easement, the average parcel depth shall be measured from the OHWM to the west side of the public pedestrian access easement providing access to Waverly Beach Park.

8. Average Parcel Width: The average of the distance between ~~from~~ the two side property lines perpendicular to the OHWM ~~north to the south property lines~~ as measured along the OHWM and along the ~~front~~ property line opposite the OHWM, or measured along the two ~~east and west~~ property lines generally parallel to the OHWM of ~~the~~ a parcel that does not abut Lake Washington.

71. Moorage Facility – A pier, dock, marina, buoy or other structure providing docking or moorage space for boats or float planes, where permitted.

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.

Section 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 in the R-L (A) shoreline environment, the shoreline setback standard shall be as follows:

(a) If dwelling units exist immediately adjacent to either side of the subject property, then the shoreline setback of the primary structure on the subject property is the average of the shoreline setback of the primary structures of the two adjacent dwelling units, but at a minimum width of 15 feet. The shoreline setback of the subject property shall be calculated by measuring the closest point of the primary structure to the OHWM on the adjacent property located 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 KZC 83.190.2.d.8, and decks, patios and similar features.

(b) If a dwelling unit does not exist immediately adjacent to the subject property, then the setback of the adjacent property without a dwelling unit for the purposes of determining an average setback shall be based upon 30% of the average parcel depth of the adjacent property.

(c) ~~3) For those properties located along Lake Ave West south of the Lake Ave W Street End Park in the Residential – L environment, i~~In instances where the shoreline setback of an adjacent dwelling unit~~s~~ has been reduced through a shoreline reduction authorized under KZC 83.380, the shoreline setback of the~~se~~ adjacent dwelling unit~~s~~, for the purpose of calculating a setback average, shall be based upon the required setback that existed prior to the authorized reduction.

4) In those instances where there is an intervening property that is ~~60~~ 80 feet or less 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 8) No change

9) Decks, patios and similar improvements may extend up to 10 feet into the shoreline setback but shall not be closer than 25 feet to the OHWM, except no closer than 15 feet to the OHWM within the Residential – L (A), (F) and (J) environment~~s south of the Lake Ave West Street End Park~~, subject to the following standards:

10) and 11) No change

12) Retaining walls and similar structures that are no more than four (4) feet in height above finished grade; provided the following standards are met:

a) The structure shall be designed so that it does not interfere with the shoreline vegetation required to be installed under the provisions of KZC 83.400;

b) The structure is not for retaining new fill to raise the level of an existing grade, but only to retain an existing slope prior to construction and installed at the minimum height necessary;

~~b)~~ c) The structure shall not be installed to provide the function of a hard shoreline stabilization measure unless approved under the provisions of KZC 83.300 and shall be located, on average, five (5) feet landward or greater of the OHWM, and

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

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

Section 83.200 Residential Uses

1. General – Residential uses shall not occur over water, including houseboats, live-aboards, or other single- or multi-family dwelling units.
2. Detached Dwelling Units in the Residential-L environment- Not more than one (1) dwelling unit shall be on each lot, regardless of the size of each lot, except an accessory dwelling unit.
3. Accessory Structures or Uses - Accessory uses and structures shall be located landward of the principal residence, unless the structure is or supports a water-dependent use. This provision does not apply if an improved public right-of-way or vehicular access easements separates the principal residence from the lake~~is located on the east side of Lake Washington Blvd/Lake Street S or 98th Avenue NE~~.

Section 83.220 Recreational Uses

5. Public Access Pier, Dock or Boardwalk –

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

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

2. Setbacks –

All piers, docks, boatlifts and moorage piles serving detached, attached or stacked dwelling units shall comply with the following setback standards:

New Pier, Dock, Boatlift and Moorage Pile for Detached, Attached or Stacked Dwelling Units (multi-family)	**Minimum Setback Standards**
From side property lines	5 ft for moorage pile; otherwise 10 ft.
From lot containing a detached dwelling unit	The area defined by a line that starts where the OHWM of the lot (containing a detached dwelling unit) intersects the side property line of the lot (containing the side property line) closest to the moorage structure and runs waterward toward the moorage structure and extends at a 30° angle from that side property line. This setback applies whether or not the subject

	property abuts the lot, but does not extend beyond any intervening overwater structure. This standard shall not apply within the Urban Mixed shoreline environment.
From another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required side property lines setback that intersect the OHWM~~north and south property line setback~~	25 ft., except that this provision shall not apply to moorage piles

Section 83.290 Marinas and Moorage Facilities Associated with Commercial Uses

2. Setback –

Marinas and moorage facilities shall comply with the following location standards:

Marinas and Moorage Facilities Associated with Commercial Uses	**Minimum Setback Standards**
From side property lines	10 ft.
From lot containing a detached dwelling unit	The area defined by a line that starts where the OHWM of the lot (containing a detached dwelling unit) intersects the side property line of the lot (containing a detached dwelling unit) closest to the moorage structure and runs waterward toward the moorage structure and extends at a 30° angle from that side property line. This setback applies whether or not the subject property abuts the lot, but does not extend beyond any intervening overwater structure. This standard shall not apply within the Urban Mixed shoreline environment.
From another moorage structure not on the subject property, excluding adjacent moorage structure that does not comply with required side property lines setback that intersect the OHWM~~north and south property line setback~~	25 ft
From outlet of a stream regulated under KZC 90, including piped streams	Maximum distance feasible while meeting other required setback standards established under this section
From public park	100 feet; or The area defined by a line that starts

	where the OHWM of the park intersects with the side property line of the park closest to the moorage structure and extends at a 45° angle from the side property line. This setback applies whether or not the subject property abuts the park, but does not extend beyond any intervening over water structure. This standard shall not apply within the Urban Mixed shoreline environment.

Section 83.300 Shoreline Stabilization

12. Specific Design Standards for Soft Structural Stabilization –

In addition to the general submittal requirements in KZC 83.300.8 and the general design standards in KZC 83.300.10, the following design standards shall be incorporated:

a. Provide sufficient protection of adjacent properties by tying in with the existing contours of the adjoining properties to prevent erosion at the property line. Proposals that include necessary use of hard structural stabilization measures only at the property lines to tie in with adjacent properties shall be permitted as soft structural shoreline stabilization measures. The length of hard structural stabilization connections to adjacent properties shall be the minimum needed and extend into the subject property from adjacent properties as reasonably required.

b. Size and arrange any gravels, cobbles, logs, and boulders so that the improvement remains stable in the long-term, prevents upland erosion, ~~and~~ dissipates wave energy, without presenting extended linear faces to oncoming waves, and minimizes impact to assure no net loss of ecological function..

Section 83.330 Land Surface Modification

1. General – The following standards must be met for any approved land surface modification:

a. Land surface modification within required shoreline setback shall only be permitted as authorized by a valid shoreline permit, building permit or ~~upon approval of a~~ land surface modification permit~~,~~ under the provisions established in KMC Title 29.

b. through h. No change

2. Permitted Activities -

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

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

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

3) through 5) No change but renumbering

General Regulations

83.360 No Net Loss Standard and Mitigation Sequencing

1. General –

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

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

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

      1) Where either a conditional use or variance application are proposed;

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

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

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

   c. Maintenance activities shall be conducted in a manner that minimizes impacts to fish, wildlife, and their associated habitat and utilizes best management practices, unless specific standards in this Chapter are already provided for maintenance activities.

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

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

   f. Off-site mitigation located within the city's shoreline jurisdiction may be considered if all or part of the required mitigation cannot be provided on-site due to the location of existing improvements or other site constraints.

   g. Prior to issuance of a certificate of occupancy or final inspection, the applicant shall provide a final as-built plan of any completed improvements authorized or required under this subsection. A document must be recorded containing all required conditions of the mitigation, including maintenance and monitoring through the life of the development, unless otherwise approved by the City, in a form acceptable to the City Attorney and recorded with the King County Bureau of Elections and Records. If the mitigation is located off-site, then the property owner of the mitigation site shall sign the agreement, which shall run with the property, and provide land survey information of the mitigation location in a format approved by the Planning Official.

Section 83.380 Shoreline Setback Reduction

1. Improvements permitted within the Shoreline Setback - See standards contained in KZC 83.190.2.

2. Shoreline Setback Reductions –

   a. In the Residential – L shoreline environment, the shoreline setback may be reduced by two (2) feet if subject to the Historic Preservation provisions of KMC 22.28.048, but in no case closer

than 25 feet with the exception in the Residential L - shoreline environments (A), (F) and (J) ~~south of the Lake Ave West Street End Park~~ where the minimum shoreline setback is 15 feet.

b. The required shoreline setback may be reduced to a minimum of 25 feet when setback reduction impacts are mitigated using a combination of the mitigation options provided in the chart below to achieve an equal or greater protection of lake ecological functions, except in the~~. In the portion of the~~ Residential-L environments (A), (F) and (J) ~~located south of the Lake Ave W Street End Park,~~ where the required shoreline setback may be reduced to a minimum of 15 feet. The following standards shall apply to any reduced setback:

1) The minimum setback that may be approved through this reduction provision is 25 feet in width, except 15 feet in width ~~that properties~~ in the Residential L – shoreline environments (A), (F) and (J) ~~south of the Lake Ave West Street End Park may reduce to a minimum setback of 15 feet~~. Any further setback reduction below 25 feet or 15 feet, respectively, in width shall require approval of a shoreline variance application.

2) The City shall accept previous actions that meet the provisions established in the setback reduction option chart in KZC 83.380.d. below as satisfying the requirements of this section, provided that all other provisions are completed, including but not limited to, the agreement noted in Section 83.380.2.b.4 below. The reduction allowance for previously completed reduction actions may only be applied once on the subject property.

3) Prior to issuance of a certificate of occupancy or final inspection, the applicant shall provide a final as-built plan of any completed improvements authorized or required under this subsection.

4) Applicants who obtain approval for a reduction in the setback must record the final approved setback and corresponding conditions, including maintenance of the conditions throughout the life of the development, unless otherwise approved by the City, in a form acceptable to the City Attorney, and recorded with the King County Bureau of Elections and Records. The applicant shall provide land survey information for this purpose in a format approved by the Planning Official.

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

c. For removal of an existing hard shoreline stabilization measure, an evaluation must be provided to the City with the development permit to document that a reduced setback will not result in the need of a hard shoreline stabilization measure in the future to protect the primary structure as regulated in KZC 83.300.

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

~~d.~~e. The chart below describes the setback reduction options:

Shoreline Setback Reduction Options		Reduction Allowance	
		Standard Reduction (min. 25 ft. setback)	**Residential-L (A), (F) and (J) environments~~, south of Lake Ave W Street End Park~~ (min. 15 ft. setback)**
Water Related Conditions or Actions			
1	Presence of non-structural or soft structural shoreline stabilization measures located at, below, or within 5 feet landward of the lake's OHWM along at least 75 percent of the linear lake frontage of the subject property. This can include the removal of an existing hard structural shoreline stabilization measure and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography, and beach/substrate composition. This option cannot be used in conjunction with Option 2 below	Reduce required setback by 15 percentage points, or in cases where the required setback is 60' reduce setback by 30 ft.	Reduce required setback by 15 ft.

Section 83.400 Tree Management and Vegetation in Shoreline Setback

3. Required Vegetation in Shoreline Setback

a. Minimum Vegetation Standard Compliance –

1) Location –

a) Water-dependent Uses or Activities - The applicant shall plant native vegetation, as necessary, in at least 75 percent of the nearshore riparian area located along or near the water's edge, except for the following areas, where the vegetation standards shall not apply: those portions of water-dependent development that require improvements adjacent to the water's edge, such as fuel stations for retail establishments providing gas sales, haul-out areas for retail establishments providing boat and motor repair and service, boat ramps for boat launches, swimming beaches or other similar activities shall plant native vegetation on portions of the nearshore riparian area located along the water's edge that are not otherwise being used for the water-dependent activity.

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

c) In the instance where there is an intervening property between the shoreline and an upland property and the portion of the intervening property abutting the upland

property has an average parcel depth of less than 25 feet, shoreline vegetation shall be provided within the shoreline setback portion of the upland property ~~along the west property line area of the upland property shall be provided within the shoreline setback~~ pursuant to KZC 83.400, unless:

i. The required shoreline vegetation already exists on the intervening lot;

ii. The intervening property owner agrees to installing the shoreline vegetation on their property; or

i. A proposal for alternative compliance is approved under the provisions established in KZC 83.400.3.f.

83.490 Critical Areas – General Standards

1. The provisions of this Chapter do not extend beyond the shorelines jurisdiction limits specified in this Chapter and the Act. The following critical areas are regulated under shorelines jurisdiction:

   a) Wetlands associated with Lake Washington (those wetlands that drain into the lake);
   b) Wetlands unassociated with Lake Washington and wetland buffers located within 200 feet of the OHWM;
   c) Streams and stream buffers within 200 feet of the OHWM; and
   d) Frequently flooded areas and geologically hazardous areas within 200 feet of the OHWM.

   For regulations addressing critical areas and buffers that are outside of the shorelines jurisdiction, see Chapter 85 and 90 KZC.

2. Avoiding impacts to critical areas. *No change*

83.500 Wetlands

1. Applicability – *No change*

2. Wetland Determinations, Delineations, Regulations, Criteria, and Procedures - All determinations and delineations of wetlands shall be made using the criteria and procedures contained in the *Washington State Wetlands Identification and Delineation Manual* (Washington Department of Ecology, 1997 or as amended). All determinations, delineations, and regulations of wetlands shall be based on the entire extent of the wetland, irrespective of property lines, ownership patterns, or other factors.

83.500.3. Wetland Determinations - Either prior to or during review of a development application, the Planning Official shall determine whether a wetland or its buffer is present on the subject property using the following provisions:

a. During or immediately following a site inspection, the Planning Official shall make an initial assessment as to whether any portion of the subject property or surrounding area (that shall be the area within 250 feet of the subject property measured in all directions within 250 feet of the OHWM) meets the definition of a wetland. If this initial site inspection does not indicate the presence of a wetland on the subject property or surrounding area, no additional wetland studies will be required at that time.

   However, if the initial site inspection or information subsequently obtained indicates the presence of a wetland on the subject property or surrounding area, then the applicant shall follow the procedure in KZC 83.500.3.b below.

83.510 Streams

1. Applicability – *No change*
2. Activities in or Near Streams – *No change*
3. Stream Determinations - The Planning Official shall determine whether a stream or stream buffer is present on the subject property using the following provisions. During or immediately following a site inspection, the Planning Official shall make an initial assessment as to whether a stream exists on any portion of the subject property or surrounding area (thatwhich shall be the area within approximately 100250 feet of the subject property measured in all directions within 250 feet of the OHWM).

Section 83.550 Nonconformances

5. Certain Nonconformances Specifically Regulated
   a. General - no change
   b. Non-Conforming Structure –
      1) Non-conforming structures that are expanded or enlarged within the shoreline setback must obtain a shoreline variance; provided that, a non-conforming detached dwelling unit use may be enlarged without a shoreline variance where the following provisions apply:

         a) through g) no change

         h) The applicant shall use "fully shielded cut off" light fixtures as defined by the Illuminating Engineering Society of North America (IESNA), or other appropriate measure to conceal the light source from adjoining uses and the lake, and direct the light toward the ground for any exterior light sources located on any the west façade of the residence or other façades with exterior light sources that are directed towards the lake or visible from the lake.

Chapter 141 – Shoreline Administration

141.40 Exemption from Permit Requirements

No change to 1-6

7. Lapse of Approval – The lapse of approval for the shoreline exemption approval shall be the same as the expiration date of the development permit and all conditions of the approval shall be included in the conditions of approval granted for that development permit. For a shoreline exemption that does not require a development permit, the expiration date shall be four (4) years from issuance of the exemption letter by the City,

141.80 Enforcement Authority.

1. WAC Chapter 173-27 contains enforcement regulations, including authority for the city to issue regulatory orders to enforce the Shoreline Management Act and the shoreline master program. In addition, the city shall have any and all other powers granted to or devolving upon municipal corporations to enforce ordinances, resolutions, regulations, and other laws within its territorial limits. Upon

determination that there has been a violation of any provision of the city's shoreline regulations, the City may pursue code enforcement and penalties in accordance with the provisions of the KMC.

City of Kirkland
Grant No. G0600236

Final

Shoreline Restoration Plan Component of the Shoreline Master Program for the City of Kirkland

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SHORELINE RESTORATION PLAN

1. INTRODUCTION

Shorelines are a major feature in the City of Kirkland, providing both a valuable setting for land use and recreation and performing important ecological functions. Development along the shoreline is addressed through the City's Shoreline Master Program, the local goals and policies adopted under the guidance and provisions of the Shoreline Management Act (SMA) of 1971. Under the SMA, each city and county with "shorelines of the state" must adopt a Shoreline Master Program (SMP) that is based on state laws and rules but tailored to the specific geographic, economic and environmental needs of the community. The goal of the SMA is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." To implement this goal, the SMA and its implementing guidelines, provide guidance and requirements to local governments addressing how shorelines should be developed, protected, and restored. The SMA has three broad policies:

1) encourage water-dependent uses,
2) protect shoreline natural resources, and
3) promote public access.

The City's SMP was developed in 1974 to help regulate shoreline development in an ecologically sensitive manner with special attention given to public access. These policy objectives are reflected in today's protection of significant natural areas within the City's shoreline area as open space, as well as the extensive shoreline trail system and network of shoreline parks which have been established over time.

Over the time that has spanned since the original adoption of the City's SMP, there have been substantial changes to the lakefront environment. Industrial uses, such as the shipyard previously located at Carillon Point, have left Kirkland's environment. The City has added publicly owned properties to its waterfront park system, most significantly the Yarrow Bay Wetlands, Juanita Bay Park, Juanita Beach Park, and David E. Brink Park. The recent City annexation of the Finn Hill, Juanita, and Kingsgate neighborhoods, which becomes effective in 2011, includes O.O. Denny Park, a shoreline park with over 1,000 linear feet of waterfront along Lake Washington. Water quality within Lake Washington, once severely impacted by nutrient loading from sewage, has remarkably improved since regional wastewater treatment plants were constructed and the final plant discharging from the lake was closed.

The lake environment has also been impacted by new challenges. The shoreline character has continued to change over time, as additional docks and bulkheads have been built, contributing to a loss of woody debris, riparian vegetation, and other complex habitat features along the shoreline. Impervious surfaces have increased both within the shoreline area and in adjacent watersheds, and this, together with the consequent reduction in soil infiltration, have been correlated with increased velocity, volume, and frequency of surface water flows into the lake. These and other changes have impacted the habitat for salmonids. In 1999, Chinook salmon and bull trout were listed as Threatened species under the Federal Endangered Species Act. The region's response to this listing has resulted in new scientific data and research that has

improved our understanding of shoreline ecological functions and their value in terms of fish and wildlife, water quality and human health.

Kirkland's SMP is being updated to comply with the SMA requirements (RCW 90.58), and new SMP Guidelines (Washington Administrative Code [WAC] 173-26, Part III), which went into effect in 2003. One of the key objectives that the SMP must address is "no net loss of ecological shoreline functions necessary to sustain shoreline natural resources" (Ecology 2004). The no net loss goal, if carried out successfully, would maintain the existing ecological condition of shorelines within the City of Kirkland. However, SMP updates seek not only to maintain conditions, but to improve them:

> "…[shoreline master programs] include planning elements that when implemented, serve to improve the overall condition of habitat and resources within the shoreline area of each city and county (WAC 173-26-201(c))."

The SMP Guidelines require that local governments develop SMP goals that promote restoration of impaired shoreline ecological functions and a "real and meaningful" strategy to implement restoration objectives. Local governments are also encouraged to contribute to restoration by planning for and supporting restoration of shoreline functions through the SMP and other regulatory and non-regulatory programs.

Restoration planning is an important component of the environmental protection policy of the Act. The City of Kirkland's SMP includes shoreline protection and restoration elements achieved through planning, regulation, preservation of high quality shoreline areas, and the provisions established in this Restoration Plan, which provides the framework for the community's efforts to restore degraded portions of the City's shorelines.

The City's Shoreline Inventory and Characterization (The Watershed Company, December 2006) describes how natural shoreline processes have been modified and identifies the restoration potential and opportunities within each shoreline reach. This Shoreline Restoration Plan builds on that analysis to further identify overall goals and priorities for restoration, as well as projects and programs that are designed to contribute to local restoration goals, and mechanisms or strategies to ensure that restoration projects and programs will be implemented.

This document represents the Restoration Plan that, done in conjunction with mitigation resulting from implementation of the new regulations and policies, will result in improvements to the shoreline ecology along the Kirkland shoreline. This plan represents a long-term vision for restoration that will be implemented over time, resulting in incremental improvement over the existing conditions.

2. PURPOSE OF RESTORATION PLAN

A jurisdiction's Shoreline Master Program applies to uses and activities in the jurisdiction's shoreline zone. To assure no net loss of shoreline ecological functions, master programs are required to include provisions that require proposed individual uses and developments to analyze environmental impacts of the proposal and include measures to mitigate environmental impacts not otherwise avoided or mitigated by compliance with the master program and other applicable regulations. Despite these efforts, it is recognized that the impacts from all reasonably anticipated activities and uses cannot be fully mitigated under the SMP regulations.

For instance, some allowed uses and developments, such as a new pier, cannot always be mitigated fully, resulting in incremental and unavoidable degradation of the baseline condition. How then can the shoreline be improved over time in areas where the baseline condition is severely, or even marginally, degraded?

Section 173-26-201(2)(f) of the State Guidelines says:

> "master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded nonregulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or nonregulatory programs under other local, state, and federal laws, as well as any restoration effects that may flow indirectly from shoreline development regulations and mitigation standards."

However, degraded shorelines are not just a result of pre-Shoreline Master Program activities or allowed uses or activities that cannot be fully mitigated, but also of unregulated activities and exempt development. The new Guidelines also require that "[l]ocal master programs shall include regulations ensuring that exempt development in the aggregate will not cause a net loss of ecological functions of the shoreline." While some actions within shoreline jurisdiction are exempt from a permit, the Shoreline Master Program should clearly state that those uses and actions are not exempt from compliance with the Shoreline Management Act or the local Shoreline Master Program. Because the shoreline environment is also affected by uses and activities taking place outside of a specific local master program's jurisdiction (e.g., outside of city limits and outside of the shoreline zone within the city), review of actions, programs and policies that affect the greater area outside of the shoreline jurisdiction is essential for understanding how the City overall fits into the larger watershed context. The latter is critical when establishing realistic goals and objectives for improving the dynamic and highly inter-connected environments.

As directed by the State Guidelines, the following Restoration Plan provides a summary of baseline shoreline conditions, lists restoration goals and objectives, discusses existing or potential programs and projects that positively impact the shoreline environment, and provide a ranking analysis of designated projects based on both ecological benefit and overall feasibility. Finally, funding options and a monitoring plan of these various comprehensive restoration projects and programs are provided. In total, implementation of the Shoreline Master Program (with mitigation of project-related impacts) in combination with this Restoration Plan (for restoration of lost ecological functions that occurred either prior to a specific project or as part of a project that cannot fully mitigate its own impacts) should result in a net improvement in the City of Kirkland's shoreline environment in the long term.

In addition to meeting the requirements of the Guidelines, this Restoration Plan is also intended to support the City's or other non-governmental organizations' applications for grant funding, and to provide the interested public with contact information for the various entities working within the City to enhance the environment.

3. SHORELINE INVENTORY SUMMARY

3.1 Introduction

The City conducted a comprehensive inventory of its Lake Washington shoreline in 2006. The purpose of the shoreline inventory was to facilitate the City of Kirkland's compliance with the SMA and updated SMP Guidelines. The inventory describes existing physical and biological conditions in the Lake Washington shoreline zone within City limits, including recommendations for restoration of ecological functions where they are degraded. The *Final Shoreline Analysis Report* is summarized below.

3.2 Shoreline Boundary

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the state plus their associated "shorelands." Shorelands are defined as:

> "those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter…Any county or city may determine that portion of a one-hundred-year-floodplain[1] to be included in its master program as long as such portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom (RCW 90.58.030)"

Shorelands in the City of Kirkland include only areas within 200 feet of the ordinary high water mark, as established by the U.S. Army Corps of Engineers for Lake Washington, and any associated wetlands within shoreline jurisdiction. Lake Washington does not have a floodway or floodplain. As part of the shoreline jurisdiction assessment, Forbes Creek, Juanita Creek, and Yarrow Creek were reviewed. All features were found to have mean annual flows of less than 20 cubic feet per second and thus are not subject to regulation under the Shoreline Management Act. Two areas of known associated wetlands were identified, one contained within Juanita Bay and extending up the lower Forbes Creek riparian corridor, and the second within the lower Yarrow Bay wetlands. The shoreline jurisdiction extends up to the wetland boundary in these two areas and up to 200 feet from the Lake Washington ordinary high water mark in all other areas.

3.3 Shoreline Inventory

The shoreline inventory is divided into five main sections: Introduction, Current Regulatory Framework Summary, Shoreline Inventory, Conditions by Inventory Segment, and Analysis of Ecological Functions and Ecosystem-wide Processes. Four segments were established (A through D), and have been delineated based on existing land use and current location within either the City or the Potential Annexation Area (PAA). ~~For the purposes of this Restoration~~

[1] According to RCW 173-220-030, 100-year floodplain is "that land area susceptible to being inundated by stream derived waters with a one percent chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulation maps or a reasonable method which meets the objectives of the act;"

~~Plan, the City has not included the PAA (Segment A), which has been separately addressed by King County.~~

3.3.1 Land Use and Physical Conditions

1. Existing Land Use: The City of Kirkland shoreline area is fully developed, with existing land uses largely consistent with planned land uses as illustrated in the Comprehensive Plan. Areas not occupied by residential or commercial/office developments are either formal and informal City parks and open spaces, or large wetland areas. The City's shoreline, including the recent annexation area, contains ~~a total of 336~~more than 650 lots. Of these, only ~~32~~ 44 undeveloped waterfront lots remain within shoreline jurisdiction. The majority of these undeveloped lots are located within Segment B (24); 12 are located in Segment A; ~~two~~ 2 are located in Segment C and ~~six~~ 6 in Segment D. In Segment A, many of the lots are considered vacant currently because they do not presently have a constructed home on the site and are in the process of a re-build. In Segment B, the relatively large number of undeveloped lots is due to a number of lots along the southwest corner of the Yarrow Bay wetlands. These figures indicate that ~~only~~ less than ~~10~~ 8 percent of ~~all~~ waterfront properties within the shoreline area are vacant. This also illustrates that if future development occurs, it will likely be in the form of redevelopment consistent with adopted plans and regulations. Except for a few properties held in private ownership, the high-functioning portions of the shoreline have been appropriately designated and preserved as park/open space. The privately held properties have been protected through critical areas provisions, including buffers. Land uses along the shoreline are only expected to change minimally, if at all, although re-builds, substantial remodels, and some redevelopment of one type of commercial into another type of commercial, multi-family or mixed-use are anticipated.

2. Parks and Open Space/Public Access: Developing public shoreline access is a priority of the City, as evidenced by the goals and policies included in the Public Access element of the City's SMP, prepared in the early 1970s and last amended in 1989. Except for single-family residential areas or environmentally sensitive areas, the prior SMP required that all development provide public access to the water's edge and along the shoreline as much as possible. As a result of this requirement, the City has made significant progress towards establishing continuous pedestrian access along the water's edge in Segment D as many of the multi-family and commercial properties have redeveloped. Overall, the City has approximately 6.8 miles of trails within shoreline jurisdiction. The trails and parks combined provide 2.~~5~~ 7 miles and approximately 140 acres of public waterfront access. The SMP continues these provisions in order to allow for any gaps in this system to be infilled as redevelopment occurs.

   The City, including the recent annexation area, contains ~~twelve~~ thirteen designated parks or street-ends, some with extended areas of open space, such as the Forbes Creek riparian corridor. Juanita Beach Park is one of the City's largest multi-use parks located on the Lake Washington waterfront. The City commissioned the *Juanita Beach Park Draft Master Plan Report* (J.A. Brennan Associates, PLLC 2005) after assuming ownership from King County in 2002. The *Master Plan Report* includes goals for a number of areas, including environmental stewardship and recreation. The plan addresses potential day boat moorage, swimming beach improvements (to address water and sediment quality and excessive sediment deposition), a new non-motorized boat rental facility, hand-

carried boat launch, and restoration of Juanita Creek, its buffer, and wetlands.

3. Shoreline Modifications: A combination of recent aerial photographs and a field inventory conducted by boat in March 2006 were used to collect information about shoreline modifications in the City. The Kirkland shoreline is heavily modified with approximately ~~60~~ 67 percent of the overall shoreline armored at or near the ordinary high water mark and an overall pier density of approximately ~~26~~ 37 piers per mile. However, these numbers include the undeveloped shorelines in Segment B. Considering just Segments A, C and D, these numbers would rise to ~~86~~ 82 percent armoring and ~~39~~ 46 piers per mile. Comparatively, an evaluation of the entire Lake Washington shoreline found 71 percent of the shoreline armored and with approximately 36 piers per mile (Toft 2001). Thus, for Kirkland overall, both pier density and shoreline armoring are slightly lower than the lake-wide figures. However, when evaluating the developed shorelines of Segments A, C and D, these figures exceed the lake-wide average. Many of the piers have one or more boatlifts, and approximately one-quarter of the boatlifts have canopies.

   As expected, the urban segment (Segment D) has the most altered shoreline, with 90 percent armored with either vertical or boulder bulkheads, and Juanita and Yarrow Bays (Segment B) have the least altered shorelines, with only 7 percent armoring. The residential segments (Segments A and C) are 76 and 83 percent armored, respectively. It is not uncommon around Lake Washington for some historic fills to be associated with the original bulkhead construction, usually to create a more level or larger yard. Most of these shoreline fills occurred at the time that the lake elevation was lowered during construction of the Hiram Chittenden Locks.

   Also as expected, the highest amount of overwater cover per lineal foot of shoreline can be found in Segment D, which is nearly triple the amount of cover found in the residential segments (A and C). This can be attributed to the presence of several marinas, large park-associated piers, multiple large piers that serve condominiums, and a couple of over-water condominiums. However, the total number of individual pier/dock structures in the urban segment is about half of that in the residential segments, due to the abundance of single-family residential pier structures. Segment B had the lowest area of overwater cover and the lowest number of overwater structures.

The full shoreline inventory includes a more in-depth of discussion of the above topics, as well as information about transportation, stormwater and wastewater utilities, impervious surfaces, and historical/archaeological sites, among others.

3.3.2 Biological Resources and Critical Areas

With the exception of the Yarrow Bay wetlands and the Forbes Creek/Juanita Bay wetlands, the shoreline zone itself within the City of Kirkland is generally deficient in high-quality biological resources and critical areas, primarily because of the extensive residential and commercial development and their associated shoreline modifications. There are numerous City parks, but these are mostly well manicured and include extensive shoreline armoring and large pier and dock structures. There are few forested areas along the lakeshore, as most forested areas are surrounded by development and are not generally contiguous with Lake Washington. Landslide hazard areas are located within the shoreline zone along Segment A intermittently and in Segment C, between the south end of Rose Point Lane and Heritage Park. Wetlands mapped

within shoreline jurisdiction include both the Yarrow Bay wetlands and the Forbes Creek/Juanita Bay wetlands. Additional unmapped areas of wetland fringe may also exist. Important fish-bearing streams in the shoreline zone include Juanita Creek, Forbes Creek, ~~and~~ Yarrow Creek, Denny Creek, Champagne Creek and other Segment A tributary. These streams are used by salmon (coho salmon and/or cutthroat trout), but have been impacted extensively by basin development, resulting in increased peak flows, unstable and eroding banks, loss of riparian vegetation, and fish and debris passage barriers. These changes have altered their contributions of sediment, organic debris, and invertebrates into Lake Washington. Each of these systems continues to be targeted for restoration by one or more local or regional restoration groups. There are also other mapped smaller streams in the shoreline zone, including Carillon Creek and Cochran Springs.

WDFW mapping of Priority Habitat and Species (WDFW 2006) also indicates the presence of other Fish and Wildlife Habitat Conservation Areas and Priority Habitats within and adjacent to the shoreline zone. These include pileated woodpecker breeding areas, historic and current bald eagle nest locations, great blue heron nest colony, wetlands, urban natural open space, and riparian zones.

4. RESTORATION GOALS AND OBJECTIVES

4.1 Introduction

The City of Kirkland is located within the Lake Washington/Cedar/Sammamish Watershed. The Lake Washington/Cedar/Sammamish Watershed is home to three populations of Chinook salmon: Cedar River, North Lake Washington, and Issaquah. Studies indicate that Chinook salmon in this watershed are in trouble; they are far less abundant now than they were even in recent decades, and all three populations are at high risk of extinction. In March 1999, the federal government listed Puget Sound Chinook salmon as threatened under the Endangered Species Act (ESA).

The salmon's decline is an indicator of the overall health of the watershed. Concerned about the need to protect and restore habitat for Chinook salmon for future generations, 27 local governments in the watershed, including Kirkland, signed an interlocal agreement in 2001 to jointly fund the development of a conservation plan to protect and restore salmon habitat. The Final Chinook Salmon Conservation Plan is the result of this collaborative effort and is the conservation strategies and implementation efforts are referenced herein as a result of the City's commitment to this conservation strategy.

According to the *Lake Washington/Cedar/Sammamish Watershed (WRIA) Near-Term Action Agenda For Salmon Habitat Conservation*, Lake Washington suffers from "Altered trophic interactions (predation, competition), degradation of riparian shoreline conditions, altered hydrology, invasive exotic plants, poor water quality (phosphorus, alkalinity, pH), [and] poor sediment quality" (WRIA 8 Steering Committee 2002). Kirkland's *Final Shoreline Analysis Report* (The Watershed Company 2006) provides supporting information that validates these claims specifically in the City's shoreline jurisdiction. The *WRIA 8 Action Agenda* established four "ecosystem objectives," which are intended to guide development and prioritization of restoration actions and strategies. The objectives are as follows:

- "Maintain, restore, or enhance watershed processes that create habitat characteristics favorable to salmon.
- Maintain or enhance habitat required by salmon during all life stages and maintain functional corridors linking these habitats.
- Maintain a well-dispersed network of high-quality refuge habitats to serve as centers of population expansion.
- Maintain connectivity between high-quality habitats to allow for population expansion into recovered habitat as degraded systems recover."

The WRIA 8 restoration objectives, in combination with the results of the City's *Final Shoreline Analysis Report*, the direction of Ecology's *Shoreline Master Program Guidelines*, and the City's commitment (Appendix A) to support the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*, are the foundation for the following goals and objectives of the City of Kirkland's restoration strategy. Although the *WRIA 8 Action Agenda* and the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* are salmon-centered, pursuit of ecosystem-wide processes and ecological functions performance that favors salmon generally captures those processes and functions that benefit all fish and wildlife. Therefore, the results of these efforts are appropriate tools for Kirkland, and are consistent with the intent of the Shoreline Management Act

4.2 Goals and Objectives

The Goals and Objectives of the Restoration Plan are as follows:

Goal 1 – Maintain, restore or enhance watershed processes, including sediment, water, wood, light and nutrient delivery, movement and loss.

Goal 2 – Maintain or enhance fish and wildlife habitat during all life stages and maintain functional corridors linking these habitats.

Goal 3 – Contribute to conservation and recovery of chinook salmon and other anadromous fish, focusing on preserving, protecting and restoring habitat with the intent to recover listed species, including sustainable, genetically diverse, harvestable populations of naturally spawning chinook salmon.

4.2.1 System-wide Restoration Objectives

- Continue to work collaboratively with other jurisdictions and stakeholders in WRIA 8 to implement the Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan.
- Use the scientific foundation and the conservation strategy as the basis for local actions recommended in the Chinook Salmon Conservation Plan and as one source of best available science for future projects, ordinances, and other appropriate local government activities.

- Use the comprehensive list of actions, and other actions consistent with the Chinook Salmon Conservation Plan, as a source of potential site-specific projects and land use and public outreach recommendations.

- Use the start-list to guide priorities for regional funding in the first ten years of Chinook Salmon Conservation Plan implementation, and implementing start-list actions through local capital improvement projects, ordinances, and other activities.

- Continue to work to implement the goals and recommended actions for flood reduction, water quality improvement and aquatic habitat restoration contained within the City of Kirkland Surface Water Master Plan.

- Seek funding for various restoration actions and programs from local sources and by working with other WRIA 8 jurisdictions and stakeholders to seek federal, state, grant and other funding opportunities.

- Continue the City's efforts to develop and implement a public education plan to inform private property owners in the shoreline zone and in the remainder of the City about the effects of land management practices and other unregulated activities (such as vegetation removal, pesticide/herbicide use, car washing) on fish and wildlife habitats.

4.2.2 Lake Washington Restoration Objectives

- Improve Lake Washington and Lake Washington tributary stream health by managing the quality and quantity of stormwater runoff, consistent at a minimum with the latest Washington Department of Ecology *Stormwater Management Manual for Western Washington*. Make any additional efforts to meet and maintain state and county water quality standards in Lake Washington tributary streams.

- Improve Lake Washington tributary stream health by eliminating man-made barriers to anadromous fish passage, preventing the creation of new barriers, and providing for transport of water, sediment and organic matter at all stream crossings.

- Improve Lake Washington and Lake Washington tributary stream health by identifying hardened and eroding lakeshores and streambanks, and correcting to the extent feasible with bioengineered stabilization solutions.

- Improve Lake Washington and Lake Washington tributary stream health by increasing large woody debris recruitment potential through plantings of trees in the riparian corridors, particularly conifers. Where feasible, install large woody debris to meet short-term needs.

- Increase quality, width and diversity of native vegetation in protected corridors adjacent to stream and lake habitats to provide safe migration pathways for fish and wildlife, food, nest sites, shade, perches, and organic debris. Strive to control non-indigenous plants or weeds that are proven harmful to native vegetation or habitats.

- Reconnect and enhance small creek mouths as juvenile rearing areas.

- Habitat in small Lake Washington tributaries, such as those in the City of Kirkland, should be restored for coho so that production of cutthroat trout, which prey on juvenile chinook salmon in Lake Washington, is reduced.

- Decrease the amount and impact of overwater and in-water structures through minimization of structure size and use of innovative materials such as grated decking.

- Participate in lake-wide efforts to reduce populations of non-native aquatic vegetation.

4.2.3 Restoration Objectives for Properties owned by City of Kirkland

The following projects (Table 1) are developed from a list of opportunity areas that are described in more detail as part of Section 6.2 of this report. These programs are currently or have previously been listed as funded or unfunded projects in the Parks Capital Improvement Program.

- By 2016, initiate and, where possible, complete the following restoration activities on properties managed by the City of Kirkland:

Table 1. List of potential shoreline restoration projects on City property

Site Number	Park	Restoration Type	Description
1	Juanita Beach Park	Redesign breakwater	Remove or redesign the breakwater in order to improve migratory conditions for juvenile salmonids and water circulation.
2	Juanita Beach Park	In-stream habitat improvement	Potential in-stream habitat improvements to Juanita Creek, including large woody debris installation and improvements to native vegetative cover.
3	Forbes Creek - Juanita Bay Park	Remove invasive vegetation	Invasive vegetation, primarily reed canarygrass, purple and garden loosestrife, and Himalayan blackberry in the terrestrial zones.
9	Waverly Beach Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
10	Waverly Beach Park	Enhance shoreline vegetation	Supplementation of nearshore native vegetation to improve habitat conditions for juvenile salmonids.
11	Waverly Beach Park	Reduce stormwater runoff	The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.
17	David Brink Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.

Site Number	Park	Restoration Type	Description
Various	Various	Reduce overwater cover	Reducing overwater cover through the installation of deck grating on the existing piers and removing pier skirting as feasible.
Various	Various	Enhance shoreline vegetation	Improving nearshore native vegetation.

As these projects are completed, the City will look for opportunities to promote the value of the improvements in benefitting shoreline conditions, as well as demonstrate potential techniques for reducing bank hardening, restoring overhanging riparian vegetation, and for incorporating deck grating into pier surfaces.

5. LIST OF EXISTING AND ONGOING PROJECTS AND PROGRAMS

The following series of existing projects and programs are generally organized from the larger watershed scale to the City-scale, including City projects and programs and finally non-profit organizations that are also active in the Kirkland area.

5.1 Water Resource Inventory Area (WRIA) 8 Participation

The City was one of 27 members of the WRIA 8 Forum, which participated in financing and developing the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*. The *Chinook Salmon Conservation Plan* includes the City of Kirkland's implementation commitment in the form of City Council Resolution R-4510, approved 21 June 2005 (Appendix A).

The City's preparation of the *Shoreline Analysis Report Including Shoreline Inventory and Characterization of the City of Kirkland's Lake Washington Shoreline* (The Watershed Company 2006) and this *Shoreline Restoration Plan* are important steps toward furthering the goals and objectives of the WRIA 8 *Chinook Salmon Conservation Plan*. In its Resolution, the City committed to, among other things, "using the scientific foundation and the conservation strategy as the basis for local actions recommended in the plan and as one source of best available science for future projects, ordinances, and other appropriate local government activities." The City's Resolution also states that the City will use the "comprehensive list of actions, and other actions consistent with the *Chinook Salmon Conservation Plan*, as a source of potential site specific projects and land use and public outreach recommendations." The City's Shoreline Master Program update products rely heavily on the science included in the WRIA 8 products, and incorporate recommended projects and actions from the WRIA 8 products (Table 2).

Table 2. WRIA 8 Action Start-List for Lake Washington and Status of Implementation in Kirkland

Action Item	Kirkland Implementation
Reduce predation to outmigrating juvenile Chinook by: reducing bank hardening, restoring overhanging riparian vegetation, replacing bulkhead and rip-rap with sandy beaches with gentle slopes, and use of mesh dock surfaces and/or community docks.	
• Encourage salmon friendly shoreline design during new construction or redevelopment by offering incentives and regulatory flexibility to improve bulkhead and dock design and revegetate shorelines.	The SMP includes incentives for homeowners to improve nearshore ecological functions.
• Increase enforcement and address nonconforming structures over long run by requiring that major redevelopment projects meet current standards.	Code enforcement is responsible for enforcing regulations which address public health and safety issues, including regulations related to rubbish, garbage, specific nuisances, removal of vegetation, zoning, housing, dangerous buildings, and inoperable and unlicensed vehicles on private property. Enforcement actions are taken both proactively and in response to requests for action received from citizens.
• Discourage construction of new bulkheads; offer incentives (e.g., provide expertise, expedite permitting) for voluntary removal of bulkheads, beach improvement, riparian revegetation.	The SMP includes limitations on construction of new bulkheads and promotes voluntary improvements to nearshore ecological functions.
• Support joint effort by NOAA Fisheries and other agencies to develop dock/pier specifications to streamline federal/state/local permitting; encourage similar effort for bulkhead specifications.	The SMP includes dimensional and material standards which are intended to be in-line with state and federal permitting guidelines.
• Promote value of light-permeable docks, smaller piling sizes, and community docks to both salmon and landowners through direct mailings to lakeshore landowners or registered boat owners sent with property tax notice or boat registration tab renewal.	Kirkland has implemented this Action Item through development of its updated Shoreline Master Program, both in public outreach conducted during the update process and in the pier regulations.
• Offer financial incentives for community docks in terms of reduced permit fees, loan fees/percentage rates, taxes, and permitting time, in addition to construction cost savings.	Currently, incentives are not a tool used by the City to encourage community docks.
• Develop workshop series specifically for lakeshore property owners on lakeside living: natural yard care, alternatives to vertical wall bulkheads, fish friendly dock design, best management practices for aquatic weed control, porous paving, and environmentally friendly methods of maintaining boats, docks, and decks.	King County has led this effort Kirkland has also implemented training as part of the shoreline tour conducted as part of the SMP update process.
Protect and restore water quality in tributaries and along shoreline. Restore coho runs in smaller tributaries as control mechanism to reduce the cutthroat population. Reconnect and enhance small creek mouths as juvenile rearing areas.	

Action Item	Kirkland Implementation
• Address water quality and high flow impacts from creeks and shoreline development through NPDES Phase 1 and Phase 2 permit updates, consistent with Washington Department of Ecology's 2001 Stormwater Management Manual, including low impact development techniques, on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into the lakes.	The City implements Ecology's 2005 *Stormwater Management Manual for Western Washington* through its NPDES Phase II permit. The NPDES Phase II permit is required to cover the City's stormwater discharges into regulated lakes and streams. Under the conditions of the permit, the City must protect and improve water quality through public education and outreach, detection and elimination of illicit non-stormwater discharges (e.g., spills, illegal dumping, wastewater), management and regulation of construction site runoff, management and regulation of runoff from new development and redevelopment, and pollution prevention and maintenance for municipal operations.
• Encourage low impact development through regulations, incentives, education/training, and demonstration projects.	The Comprehensive Plan and the SMP contain provisions which promote LID. Implementation of the 2005 *Stormwater Management Manual for Western Washington* also places greater emphasis on LID strategies. The City has incorporating LID techniques in a number of demonstration projects and has completed education/training for both homeowners and developers. The City's Planning Department coordinates the implementation of the *Natural Resource Management Plan,* which recognizes the complexity of the interaction of its water, land and air systems and identifies action items intended protect Kirkland's environmentally sensitive areas.
• Protect and restore water quality and other ecological functions in tributaries to reduce effects of urbanization and reduce conditions which encourage cutthroat. Protect and restore forest cover, riparian buffers, wetlands, and creek mouths by revising and enforcing critical areas ordinances and Shoreline Master Programs, incentives, and flexible development tools.	The City updated the Critical Areas Ordinance in 2003, and revised it further as part of the SMP update process for application in shoreline jurisdiction. Management of the City's critical areas using these regulations should help insure that ecological functions and values are not degraded, and impacts to critical areas are mitigated.

Action Item	Kirkland Implementation
	The City will also update its Critical Areas Ordinance, as needed. The next current update is scheduled to be completed by December, 2011.
• Promote through design competitions and media coverage the use of "rain gardens" and other low impact development practices that mimic natural hydrology.	The City's *Currently Kirkland* cable program airs a show of local residents installing a rain garden at the Forbes House located at Juanita Beach Park. The City offers educational seminars and events on LID practices as part of its Green Building Program and Developer's Forum series. The City has also prepared a brochure highlighting different LID techniques as well as a map of different installations that are available for viewing.

5.2 Comprehensive Plan Policies

In 1995 and again in 2004, the City completed major updates of the Kirkland Comprehensive Plan pursuant to Growth Management Act requirements. Additional amendments have been made to the Comprehensive Plan since 2004, most recently in 2008 which included amendments to the *Natural Environment Element*. The updated Comprehensive Plan contains a number of general and specific goals and policies that direct the City to permit and condition development in such a way that the natural environment is preserved and enhanced. The specific goals in the *Natural Environment Element* include:

Goal NE-1: Protect natural systems and features from the potentially negative impacts of human activities, including, but not limited to, land development.

Goal NE-2: Manage the natural and built environments to achieve no net loss of the functions and values of each drainage basin; and, where possible, to enhance and restore functions, values, and features. Retain lakes, ponds, wetlands, and streams and their corridors substantially in their natural condition.

Goal NE-3: Manage the natural and built environments to protect and, where possible, to enhance and restore vegetation.

Goal NE-4: Manage the natural and built environment to maintain or improve soils/geologic resources and to minimize risk to life and property.

Goal NE-5: Improve air quality and reduce Kirkland's contribution to climate change.

Techniques suggested by the various policies to protect the natural environment include requiring setbacks from sensitive areas, preserving habitats for sensitive species, preventing adverse alterations to water quality and quantity, promoting low impact development,

preserving existing native vegetation, educating the public, and mitigating necessary sensitive area impacts, among others.

5.3 Natural Resources Management Plan

In 2003, the City adopted its Natural Resource Management Plan that calls for strategies intended to comprehensively manage Kirkland's natural resources. The Plan identifies three compelling reasons for managing natural resources in Kirkland: (1) the community's vision could not be attained without it, (2) the law requires it, and (3) without it, community assets become liabilities. The Plan recognizes the complexity of the interaction of its water, land and air systems and identifies action items intended protect Kirkland's environmentally sensitive areas.

The Natural Resources Management Plan contains a number of general and specific goals and policies that address the shoreline, such as:

Look for opportunities to enhance the ecological functions of the Lake Washington shoreline wherever feasible. Actions that would aid recovery of the salmonids in Lake Washington include:

- Identify areas where it will be feasible to protect and restore natural lake shorelines and shallow water habitat and to remove bank armoring and docks.
- Identify, protect, and restore tributary mouths entering the lake. Studies show that juvenile chinook salmon hold and feed near the mouths of tributaries, even very small streams and drainages, during rearing and migration.
- Construct demonstration projects on public lands at key locations, such as at the mouth of Juanita Creek in Juanita Beach Park or where street ends meet the shoreline. Remove bulkheads, regrade shorelines, improve substrate, and plant overhanging vegetation in order to enhance rearing and refuge habitat for juvenile Chinook. Monitor to evaluate stability, sedimentation rates, and juvenile/adult use and predation. Consideration of containment issues in site selections is important.
- Identify opportunities to preserve, enhance, or restore lakeshore wetlands.
- Identify opportunities to treat stormwater entering Lake Washington through biofiltration or other water quality techniques. Consider experimental projects.
- Explore alternative dock design/migration packages that use bank softening to replace docks and bank armoring.
- Identify critical areas of juvenile and adult Chinook salmon migration for aquatic weeds management; control invasive aquatic weeds in those parts of the lake.

The Plan also addresses the need to integrate local, state and federal regulations for lakes, shorelines, streams, wetlands and aquifer recharge areas.

5.4 Critical Areas Regulations

The City of Kirkland critical areas regulations are found in Kirkland Zoning Code Chapter 90. In the early 1990s, Kirkland adopted regulations to designate and protect critical areas pursuant to the Washington State Growth Management Act (GMA) (RCW 36.70A). In response to later GMA amendments, the City adopted in 2002 a revised Critical Areas Ordinance (CAO) contained in the KZC consistent with best available science and all other requirements of the GMA. All activities which require a substantial development permit, conditional use or variance under the SMP or are exempt from a permit under the SMP are reviewed under the City's CAO for consistency. As stated above, if there is a conflict between the CAO and SMP, the regulations that offer the greatest environmental protection apply.

The regulations categorize streams based on salmonid use and duration of flow, with standard buffers ranging from 25 feet to 75 feet. Wetlands are classified into three categories based on size, presence of habitat for listed species or the species themselves, relationship to Lake Washington, general habitat function and value, and soils. Buffers range from 25 to 100 feet; all wetlands contiguous with Lake Washington have a 100-foot buffer.

As part of the SMP update, the critical areas regulations that apply in shoreline jurisdiction were updated to include Ecology's wetland rating system, a variation on Washington Department Natural Resources' stream rating system (annexation area only), increased wetland buffers and mitigation ratios, increased stream buffers (annexation area only) and other changes consistent with the latest scientific information.

Management of the City's critical areas both inside and outside of shoreline jurisdiction using these regulations should help insure that ecological functions and values are not degraded, and impacts to critical areas are mitigated. These critical areas regulations are one important tool that will help the City meet its restoration goals.

5.5 Stormwater Management and Planning

Although much of the City of Kirkland's Surface Water Utility's jurisdiction is outside of the shoreline zone, all of the regulated surface waters, both natural and piped, are discharged ultimately into Lake Washington and thus affect shoreline conditions. There are more than 70 outfalls directly into the shoreline area, and many more that discharge just outside of shoreline jurisdiction, but subsequently flow into the shoreline area (The Watershed Company 2006). The City's 2005 *Surface Water Master Plan* contains the following goals:

> Flood Reduction – minimize existing flooding and prevent increase in future flooding through construction of projects that address existing problems, increased inspection and rehabilitation of the existing system, and increased public education.
>
> Water Quality Improvement - increase efforts to maintain and improve water quality by increasing public education (source control), identifying pollution "hot spots" for possible water quality treatment and by examining City practices and facilities to identify where water quality improvements could be achieved.
>
> Aquatic Habitat – increase efforts to slow the decline of aquatic habitat and create improved conditions that will sustain existing fish populations. Combine hydrological

controls, such as regional detention, with in-stream habitat improvement projects in Juanita and Forbes creeks watersheds that currently support fish populations.

Since preparation of the first *Surface Water Master Plan* in 1994, the Utility has accomplished a number of actions that further achieve its goals (excerpted from the 2005 *Surface Water Master Plan*).

Flood Reduction

- Eliminated most major flooding problems.
- Mapped surface water infrastructure.
- Implemented a program to inspect and clear flooding "hot spots" during storm events

Water Quality

- Adopted an ordinance to prohibit illicit discharges (spills and dumping), require use of pollution prevention practices, require maintenance of private drainage facilities, and require pre- and post-development control of stormwater runoff.
- Established a water quality monitoring program.
- Implemented a volunteer program to conduct water quality monitoring, planting of native vegetation, and other activities.
- Increased frequency of system cleaning, resulting in removal of an average of 200 cubic yards of sediment per year
- Conducted regional water quality related outreach programs in Kirkland, including "Natural Yard Care" and "Horses for Clean Water."
- Distributed educational brochures regarding pollution prevention, car washing practices, and leaf blower use.
- Conducted storm drain stenciling with community groups.

The City applied for coverage under the Western Washington permit which was issued by Ecology and became effective on February 16, 2007. The NPDES Phase II permit is required to cover the City's stormwater discharges into regulated lakes and streams. Under the conditions of the permit, the City must protect and improve water quality through public education and outreach, detection and elimination of illicit non-stormwater discharges (e.g., spills, illegal dumping, wastewater), management and regulation of construction site runoff, management and regulation of runoff from new development and redevelopment, and pollution prevention and maintenance for municipal operations.

The City subsequently released a Stormwater Management Program (SWMP) in February 2008 (City of Kirkland 2008-a) which details implementation of the NPDES Phase II permit. The

SWMP identifies programs to reduce pollutants in stormwater to the "maximum extent possible" by conducting programs and activities in the following program areas:

- Public Education and Outreach
- Public Involvement
- Illicit Discharge Detection and Elimination
- Construction and Post-construction runoff controls
- Pollution Prevention and Municipal Operations and Maintenance
- Monitoring

In 2007, the Department of Ecology published information about toxics levels in fish, including fish sampled in Lake Washington (Department of Ecology 2007). Lake Washington ranked second only to the Wenatchee River near Leavenworth for a site contaminant score. Although this report does not identify specific point sources, it represents a clear need to better understand contaminant sources and control.

5.6 Kirkland's Green Building Program

Kirkland's Green Building pilot program offers a priority permit processing incentive designed to encourage sustainable building in the construction of new single family residential development. Additionally, the program offers educational resources, such as this website, and hosts seminars on green building topics to help educate builders and the public about the benefits of sustainable building.

The goal of the Green Building Program, through certain design and construction techniques, is to reduce the environmental impact of buildings by:

- Protecting environmentally sensitive lands and plant species
- Minimizing the size of the building footprint
- Incorporating energy efficiency in the design and construction
- Using environmentally-friendly building materials that will create a healthy indoor and outdoor environment
- Providing for efficient water use
- Reducing the generation of solid waste

5.7 Comprehensive Park, Open Space and Recreation Plan 2001

The 2001 Comprehensive Park, Open Space and Recreation Plan provides policies and planning for parks, open space and recreating within the City of Kirkland, including waterfront parks.

The three primary goals of the Parks and Community Services Department are to:

- acquire, develop, and renovate a system of parks, recreational facilities, and open spaces that is attractive, safe, functional, and available to all segments of the population,
- enhance the quality of life in the community by providing services and programs that offer positive opportunities for building healthy productive lives, and
- protect and preserve publicly-owned natural resource areas.

The Plan contains policies and goals that address waterfront access and waterfront parks, including the following:

> Policy 1.4 (KCP Policy 2.2): Small craft water-oriented activities/programs should be encouraged along the shoreline where appropriate and consistent with public interest and needs.
>
> Policy 1.11 (KCP Policy 3.1): The City should work cooperatively with numerous resource management agencies and citizens to care for streams, enhance degraded forests and wetlands, improve wildlife habitat, and provide limited public access.
>
> Policy 1.12 (KCP Policy 3.2): The City should preserve opportunities for people to observe and enjoy wildlife and wildlife habitats.

5.8 Green Kirkland Partnership

The Green Kirkland Partnership is an alliance between the City, the Cascade Land Conservancy, and the local community focused on restoring natural areas within the City, including many City parks located along Lake Washington. This partnership aims to remove invasive plants in City parks and replant with native species, while enhancing community stewardship by coordinating volunteer efforts to restore natural open spaces.

This partnership includes a 20-year Forest Restoration Plan (City of Kirkland 2008b), which focuses on protecting Kirkland's forests for a sustainable future. Implementation of this plan includes coordination of volunteers to remove ivy and other invasive plants and replant with native plants. In 2008, the Green Kirkland Partnership had 36 volunteer restoration events held in the following City parks: Carillon Woods, Everest, Heritage, Juanita Bay, Kiwanis, McAuliffe, North Rose Hill Woodlands, South Rose Hill and Watershed parks. This work included Kiwanis and Juanita Bay Parks, which are located within the shoreline jurisdiction, but also other upland parks which contain streams and wetlands that drain into Lake Washington.

As part of the Green Kirkland Partnership, the City is also embarking on a multi-year habitat restoration project focusing on improving wildlife habitat in the extensive wetland and forest complex at Juanita Bay Park. Invasive and noxious species such as Himalayan blackberry are a large problem within the park. A Restoration Action Plan has been developed by the Seattle Urban Nature (SUN) that identified restoration priorities and a menu of specific tasks along with planting plans and maintenance schedules necessary to implement these tasks. This action plan is available on their website at: http://www.seattleurbannature.org/Resources/

publications.html. In Spring 2009, the City of Kirkland hired EarthCorps to organize volunteer events in conjunction with trained crews to implement the projects identified in the Action Plan. This project will remove Himalayan blackberry, English ivy, and Scot's broom (which are all classified as noxious weeds in King County) and replace these with native plants to improved habitat to native and migrating birds and wildlife. Implementation of the plan also relies on the work of five Stewards trained by the Washington Native Plant Society who will lead volunteer events and involve the community to clear Himalayan blackberry from the trail and wetland buffer.

5.9 Other Parks & Community Services Department Activities

5.9.1 Parks & Community Services Department Planning and Management

The City commissioned the *Juanita Beach Park Master Plan Report* (J.A. Brennan Associates, PLLC 2005) after assuming ownership from King County in 2002. The *Master Plan Report* includes goals for a number of areas, including environmental stewardship and recreation. The plan's Environmental Stewardship goals include:

- Enhance Juanita Creek to create a healthy stream environment. (This could include the reach within the park and up-stream reaches)
- Create a salmon and wildlife friendly shoreline
- Enhance and restore wetlands
- Educate the visitors about habitat values

Since 1998, the Kirkland Parks Department has been following an Integrated Pest Management (IPM) program. IPM is a sustainable approach to managing pests by combining cultural, mechanical, biological and chemical methods in a way that provides efficient maintenance of the City's park system.

The Kirkland Parks Department has also initiated a program to install water intakes in Lake Washington for use as irrigation of Kirkland Parks. The water withdrawn from Lake Washington by Parks would be used to irrigate eight parks, which are currently being provided with irrigation water from the City's potable water system. In conjunction with this project, the Parks Department plans to install vegetation along the shoreline edge.

The Kirkland Parks Department undertakes aquatic vegetation efforts at Houghton and Waverly Beach Parks, as well as Juanita Bay Park.

The City's Parks and Community Services Department has several other programs that could be leveraged to enact additional restoration projects to benefit shoreline conditions, including Juanita Bay Park Rangers, Eagle Scout/Capstone Projects, and the Youth Tree Education Program. All of these programs enable volunteers to donate time and energy to improving the park system.

Contact Information: City of Kirkland Parks & Community Services, (425) 587-3300

5.9.2 Juanita Bay Park Rangers

Juanita Bay Park Rangers provide educational and interpretative services at Juanita Bay Park. Rangers greet visitors, answer questions, monitor park usage, record wildlife activity, perform minor maintenance, and lead park tours.

5.9.3 Eagle Scouts

Eagle Scouts, the highest advancement rank in Scouting, have provided many services to the City's parks system. The Parks and Community Services Department provides project ideas that Eagle Scout candidates may choose from. Potential projects include the installation of park benches, fencing, boardwalks, trail improvements, and landscaping improvements.

5.10 Public Education

The City of Kirkland's Comprehensive Plan, *Natural Environment Element*, identifies the following policy statement based on the goal of protecting natural systems from human impacts (excerpted below). This helps guide City staff and local citizen groups in developing mechanisms to educate the public and broaden the interest in protecting and enhancing local environmental resources.

> Goal NE-1: Protect natural systems and features from the potentially negative impacts of human activities, including, but not limited to, land development.
>
> Policy NE-1.5: Provide to all stakeholders information concerning natural systems and associated programs and regulations. Work toward creating a culture of stewardship by fostering programs that support sound practices, such as low impact development and sustainable building techniques. Model good stewardship techniques in managing trees, streams, wetlands, shorelines and other natural features and systems in the public realm.

As part of the City of Kirkland's efforts to abide by this goal and policy, the City supports several volunteer efforts, such as the Green Kirkland Partnership and Eastside Audubon (see description below). Additional specific education efforts are described in other sections of Chapter 5.

5.11 Public Works Programs

The Public Works Department periodically produces educational materials for local citizens, including the quarterly "Reuse – Recycle - Conserve" publication, which is produced in both single-family and multi-family focused issues, and brochures, such as the "Low Impact Development Elements for Residential Stormwater Management." The Department also administers the Adopt a Storm Drain program based on volunteer involvement to reduce flooding by keeping storm drain covers clear of leaves and debris.

Contact Information: City of Kirkland Public Works, (425) 587-3800

5.12 Capital Improvement Program (CIP)

5.12.1 Surface Water Management Utility

The Public Works Department funds a number of Surface Water Management Utility projects through the Capital Improvement Program, including improvements to the City's storm drain system and streambed mitigation on public and private property. The CIP contains both funded and unfunded projects that range in size and scope from maintenance and replacement of aging infrastructure or damaged improvements, planting of riparian understory vegetation along stream edges to provide shading, as well as maintenance to prevent flooding and property damage, and installation of regional detention in the Forbes and Juanita Creek Basins.

The CIP contains several funded and unfunded projects addressing Juanita Creek to provide flood relief and habitat improvement.

The CIP also funds the annual streambank stabilization program. Goals of the streambank stabilization program are to provide the public benefits of improved water quality and decreased flooding by stabilizing and restoring stream channels which may in many cases be located on private property. Most common stabilization methods funded through this program will be upstream detention and in-stream stabilization/restoration using bioengineering techniques.

Contact Information: City of Kirkland Public Works, (425) 587-3800

5.12.2 Parks

The City of Kirkland Parks & Community Services completes park renovation projects through the Capital Improvement Program. The CIP contains both funded and unfunded projects that range in size and scope from dock renovations, to park renovation, and park and open space acquisition.

The CIP helps to fund the Open Space and Park Land Acquisition Grant Match Program, which assists with or provides funding for acquisition of key sites as they become available. Acquiring more sites would fill gaps in the City's park system, provide open space contiguous to existing parks or provide important linkages. This project also allows the City to remain eligible for State-funded grant programs.

Shoreline park renovation projects provide an opportunity to complete shoreline or stream restoration, new landscaping, and to implement Low Impact Development (LID) practices within the shoreline parks.

Dock renovations funded through the CIP offer the opportunity to replace dock decking material and conform to environmental regulations pertaining to decking material and construction.

The City of Kirkland Parks & Community Services plans to incorporate the recommended projects provided in Section 6.2 of this report into the CIP as either funded or unfunded projects, in order to assure that these projects are considered for funding as the CIP program is updated in the future.

Contact Information: City of Kirkland Parks & Community Services, (425) 587-3300

5.13 Cascade Land Conservancy

The Cascade Land Conservancy (CLC) has been actively working with the City of Kirkland, partnering with CLC on implementing the Cascade Agenda Vision – a 100-year vision focused on sustaining the local community, natural environment, and economy through the future growth of Puget Sound. The CLC also works with the City through the Green Kirkland Partnership (described above).

Contact Information: http://www.cascadeland.org/

5.14 Eastside Audubon

The Eastside Audubon (formerly the East Lake Washington Audubon Society) was formed in 1980 dedicated to the appreciation, study and conservation of birds and their habitats, primarily along the east side of Lake Washington. Volunteers have been instrumental in preserving many areas for birds, including Juanita Bay Park in Kirkland, Lake Hills Greenbelt in Bellevue, and Hazel Wolf Wetlands in King County. Recently, Eastside Audubon has been working with the Green Kirkland Partnership with invasive plant removal at Kirkland's Watershed Park.

Contact Information: http://www.eastsideaudubon.org/

5.15 Moss Bay Diving Club

The Moss Bay Diving Club, located in Kirkland, periodically performs in-water SCUBA cleanup events to remove submerged debris from Lake Washington.

Contact Information: http://www.mossbaydiveclub.org/

6. LIST OF FUTURE PROJECTS AND PROGRAMS TO ACHIEVE LOCAL RESTORATION GOALS

The following are potential projects and programs that would contribute to achieving the local restoration goals. The potential projects and programs are generally organized from the larger watershed scale to the City-scale, including City projects and programs and WRIA 8 Public Education/Outreach programs.

6.1 Unfunded WRIA 8 Projects

The *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* (WRIA 8 Steering Committee 2005) includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet as Project C296 on the "Lake Washington - Tier I - Initial Habitat Project List." It is identified as a low-priority project, however, because of its limited benefit to chinook salmon and perceived low feasibility.

6.2 Recommended Projects - Public

The following list of recommended projects (Table 3) is developed from a list of opportunity areas identified within the *Final Shoreline Analysis Report* (The Watershed Company 2006) and

is intended to contribute to improvement of impaired functions on public property. The list of potential projects was created after assessing field conditions during the shoreline inventory and characterization phase and later evaluated on a project specific basis during the development of this Restoration Plan. The projects are listed in order from North to South.

Table 3. List of Recommended Projects - Public.

Site Number	Park	Restoration Type	Description
1	Juanita Beach Park	Reduce overwater cover	The large overwater boardwalk with skirting, which forms the designated swimming area, has the potential for impact reduction by installing deck grating in the pier decking and potentially removing or redesigning the breakwater in order to improve migratory conditions for juvenile salmonids and water circulation.
2	Juanita Beach Park	In-stream habitat improvement	Potential in-stream habitat improvements exist at the mouth of Juanita Creek (delta), including large woody debris installation and improvements to native vegetative cover. The *WRIA 8 Chinook Salmon Conservation Plan* includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet.
3	Forbes Creek - Juanita Bay Park	Remove invasive vegetation	Invasive vegetation, primarily reed canarygrass, purple and garden loosestrife, and Himalayan blackberry in the terrestrial zones and white water lily in the aquatic zone, is currently growing throughout the Forbes Creek riparian corridor and Juanita Bay Park. The primary objective for the less developed landscape zones is removal of invasive species and replacement with native species, as well as supplementation of existing native vegetation to increase species and habitat diversity.
4	Forbes Creek - Juanita Bay Park	Reduce overwater cover	The pedestrian trail/trestle across Juanita Bay to the west of 98th Street covers the mouth of Forbes Creek, potentially inhibiting salmon migration. The surface of the walkway could be re-decked with a grated material to reduce shading impacts to the aquatic environment.
5	Forbes Creek - Juanita Bay Park	Reduce in-water structures	Many remnant pier piles located within Juanita Bay could be removed.
6	Lake Ave W Street End Park	Remove invasive vegetation	This small street-end park consists of primarily lawn area with a moderate amount of shoreline vegetation (trees and shrubs). An abundance of invasive vegetation (ivy/reed canarygrass) could be removed and replaced with additional native vegetation to improve shoreline conditions for juvenile salmonids.
7	Lake Ave W Street End Park	Reduce in-water structures	An old remnant moorage slip located near the south property line that is not connected to shore could be removed to reduce in- and overwater structures.

Site Number	Park	Restoration Type	Description
8	Waverly Beach Park	Reduce overwater cover	Reduction of overwater cover by the existing pier through the installation of deck grating and removing pier skirting as feasible.
9	Waverly Beach Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
10	Waverly Beach Park	Enhance shoreline vegetation	Supplementation of nearshore native vegetation to improve habitat conditions for juvenile salmonids.
11	Waverly Beach Park	Reduce stormwater runoff	The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.
12	Marina Park	Reduce overwater cover	Reducing overwater cover through the installation of deck grating on the existing piers.
13	Marina Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
14	Marina Park	Enhance shoreline vegetation	Improving nearshore native vegetation.
15	Street-End Park	Reduce stormwater runoff	This small street-end park consists of an adjacent parking area located within the shoreline jurisdiction that likely drains surface runoff directly to Lake Washington. Future use of pervious material should be explored any time repairs are proposed.
16	David Brink Park	Reduce overwater cover	Reducing overwater cover through the installation of deck grating on the existing piers.
17	David Brink Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
18	David Brink Park	Reduce in-water structures	Removing unused remnant pier piles.
19	David Brink Park	Enhance shoreline vegetation	Improving nearshore native vegetation.
20	Settler's Landing	Enhance shoreline vegetation	This small street-end park contains the opportunity to improve shoreline habitat by improving native vegetative cover.
21	Settler's Landing	Reduce overwater cover	The existing shared use pier (public and private) could potentially be re-decked with grated materials to reduce shading impacts.
22	Marsh Park	Reduce overwater cover	Reduction of overwater cover by the existing pier through the installation of deck grating.
23	Marsh Park	Reduce shoreline armoring	Removal or minimization of shoreline armoring.
24	Marsh Park	Enhance shoreline vegetation	Improvement of nearshore native vegetation.
25	Marsh Park	Reduce stormwater	The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious

Site Number	Park	Restoration Type	Description
		runoff	materials, relocation, or minimization.
26	Houghton Beach Park	Reduce overwater cover	Reducing overwater cover through the installation of deck grating on the existing piers and removing pier skirting as feasible.
27	Houghton Beach Park	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring.
28	Houghton Beach Park	Enhance shoreline vegetation	Improving nearshore native vegetation.
29	Yarrow Bay	Remove invasive vegetation	The biological need for control of aquatic invasive species in Yarrow Bay should be assessed. Both Yarrow Shores Condominiums and the Carillon Point Marina and condominiums have permits from Ecology to use chemical controls on milfoil and white water lily, which have become a nuisance to boaters and swimmers.
30	O.O. Denny Park[1]	Reduce shoreline armoring	Removing or minimizing the impacts of shoreline armoring along the northern ~550 feet of the park by using bioengineering techniques, regrading and reshaping of the shoreline.
31	O.O. Denny Park	Reduce shoreline armoring	Removing or minimizing the impacts of existing concrete bulkhead (~400 feet long) which fronts the main park shoreline. Shoreline could be replaced with a sinuous more natural shoreline contour. Would require regrading to improve shoreline access by lowering the height differential between upland lawns and the water's edge
32	O.O. Denny Park	Enhance shoreline vegetation	Removal of invasives and replanting with natives could occur along most of the northern ~550 feet of shoreline, including the associated wetland, allowing for concentrated areas of public access to Lake Washington. The main shorline which is fronted by the tall concrete wall is currently void of trees and shrubs. A few large trees are located between 50 and 80 feet from shore. Areas of shoreline revegeation would enhance shoreline functions and still allow for concentrated access to the shoreline.
33	O.O. Denny Park	Enhance shoreline vegetation	Native vegetation could be enhanced at the mouth of Denny Creek to bring vegetation further toward the lake. Currently, split rail and chain fencing segregates the riparian community from the lake. Wetland conditions may exist along stream flank near mouth and could be enhanced with native vegetation. The installation of riparian vegetation at the mouth may improve the channel definition and reduce sediment deposition at the mouth which may act as low flow barrier to fish passage during late summer and early fall. First pedestrian bridge upstream from the lake could be redecked with grated decking to replace plywood sheets.

[1] O.O. Denny Park is actually owned by the City of Seattle, but managed by the Finn Hill Parks and Recreation District. This management is not expected to change for some time.

After identifying and describing these projects, each proposed action was ranked using evaluation criteria developed for this study and compiled on a questionnaire form. Evaluation criteria were grouped into two sections: (A) ecological considerations and (B) feasibility/public benefit considerations. Scoring was based on assumptions and project understanding within the context of conceptual-level project elements, needs, and requirements. A weighting factor was included, where appropriate, to give certain criteria more or less emphasis than others.

A sample ranking form (Appendix B) is included to show the varying levels of consideration and their respective weighting factors. Notes were developed (Appendix B) to assist with completing the form and ensuring consistency between sites. The ecological considerations were completed with the aid of GIS mapping and best professional judgment. Feasibility/public benefit considerations were completed based on experience with shoreline design and construction projects, familiarity with permit processes, and public input over time. The individual ranking forms with tallied scores for each project are included in Appendix C of this report.

Numerical results from the project ranking are summarized in Table 4 from highest to lowest total score. Based on these results, projects with in-water habitat improvement, reduction of shoreline armoring, and large-scale invasive vegetation removal generally ranked highest in total score. However, it should be noted that the ranking of potential projects is intended to serve as a guide to developing restoration priorities and implementation targets, and does not necessarily require completion in the order presented. Some projects, due to their simplicity, rank high in terms of feasibility, and subsequently may be easier to implement than larger projects which may have high scores for ecological benefit. In general, ecological considerations have been given more weight than feasibility/public benefit considerations and, as a result, larger, more complex projects tend to have higher total scores.

Table 4. Project Ranking Results.

Site Number	Park	Restoration Type	Ecological Score	Feasibility Score	Total Score
2	Juanita Beach Park	In-stream habitat improvement	34.5	6.0	**40.5**
1	Juanita Beach Park	Reduce overwater cover	23.0	8.0	**31.0**
31	O.O. Denny Park	Reduce shoreline armoring	23.5	7.0	**30.5**
30	O.O. Denny Park	Reduce shoreline armoring	21.8	8.5	**30.3**
27	Houghton Beach Park	Reduce shoreline armoring	22.3	7.5	**29.8**
29	Yarrow Bay	Remove invasive vegetation	20.0	9.5	**29.5**
3	Forbes Creek - Juanita Bay Park	Remove invasive vegetation	20.0	9.0	**29.0**
17	David Brink Park	Reduce shoreline armoring	20.0	7.5	**27.5**
23	Marsh Park	Reduce shoreline armoring	20.0	7.5	**27.5**

Site Number	Park	Restoration Type	Ecological Score	Feasibility Score	Total Score
9	Waverly Beach Park	Reduce shoreline armoring	19.0	8.0	**27.0**
13	Marina Park	Reduce shoreline armoring	19.0	7.0	**26.0**
32	O.O. Denny Park	Enhance shoreline vegetation	15.0	9.0	**24.0**
5	Forbes Creek - Juanita Bay Park	Reduce in-water structures	17.5	6.5	**24.0**
28	Houghton Beach Park	Enhance shoreline vegetation	12.3	11.5	**23.8**
4	Forbes Creek - Juanita Bay Park	Reduce overwater cover	14.0	9.5	**23.5**
10	Waverly Beach Park	Enhance shoreline vegetation	10.0	11.5	**21.5**
19	David Brink Park	Enhance shoreline vegetation	10.0	11.5	**21.5**
24	Marsh Park	Enhance shoreline vegetation	10.0	11.5	**21.5**
12	Marina Park	Reduce overwater cover	13.5	7.5	**21.0**
33	O.O. Denny Park	Enhance shoreline vegetation	12.4	8.5	**20.9**
6	Lake Ave W Street End Park	Remove invasive vegetation	8.8	11.0	**19.8**
14	Marina Park	Enhance shoreline vegetation	6.5	11.5	**18.0**
26	Houghton Beach Park	Reduce overwater cover	8.3	8.5	**16.8**
8	Waverly Beach Park	Reduce overwater cover	7.0	7.5	**14.5**
16	David Brink Park	Reduce overwater cover	5.0	9.0	**14.0**
22	Marsh Park	Reduce overwater cover	5.0	8.5	**13.5**
21	Settler's Landing	Reduce overwater cover	4.8	8.5	**13.3**
20	Settler's Landing	Enhance shoreline vegetation	2.8	10.0	**12.8**
7	Lake Ave W Street End Park	Reduce in-water structures	3.0	9.5	**12.5**
25	Marsh Park	Reduce stormwater runoff	3.0	9.0	**12.0**
18	David Brink Park	Reduce in-water structures	2.6	9.0	**11.6**
11	Waverly Beach Park	Reduce stormwater runoff	3.0	8.5	**11.5**

Site Number	Park	Restoration Type	Ecological Score	Feasibility Score	Total Score
15	Street-End Park	Reduce stormwater runoff	2.0	6.0	**8.0**

6.3 Recommended Projects - Private

General: Many shoreline properties have the potential for improvement of ecological functions through: 1) reduction or modification of shoreline armoring, 2) reduction of overwater cover and in-water structures (grated pier decking, pier size reduction, pile size and quantity reduction, moorage cover removal), 3) improvements to nearshore native vegetative cover, and/or 4) reductions in impervious surface coverage. Similar opportunities would also apply to undeveloped lots which may be used as community lots for upland properties or local street-ends and utility corridors. Other opportunities may exist to improve either fish habitat or fish passage for those properties which have streams discharging to Lake Washington.

An example of how shoreline armoring might be reduced on some lots along the City's residential areas is depicted in Figure 1 below. This example displays before and after images of a typical lot in which the existing bulkhead is partially pulled back to create a shallow cove beach combined with natural materials. This example combines the effort to improve habitat conditions with improved access and aesthetics.

The SMP includes incentives for removing bulkheads and similar hard shoreline structures. The incentives allow property owners to reduced buffer widths when they agree to use alternative (soft-shore) armoring. The City could also explore additional development incentives for restoration, such as waiving some or all permit fees when shoreline restoration is included in a project. Further, the City could develop resource materials for property owners that want to be involved in restoration that would provide guidance with permitting and design issues. Examples could include the development of pre-approved plans.

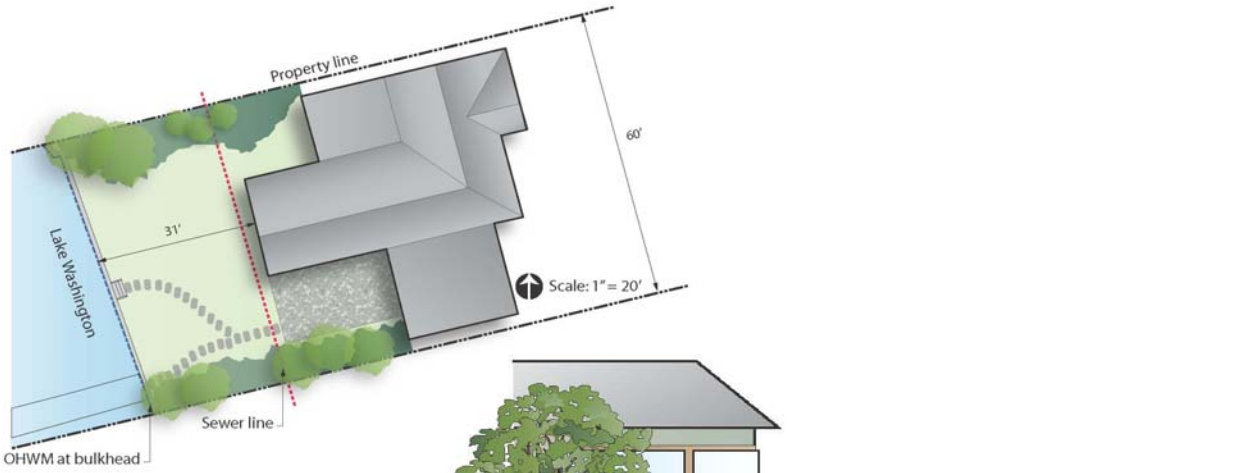
Another potential incentive to encourage property owners to protect habitat and retain forest on their property is the Public Benefit Rating Program (PBRS), a current-use taxation program that reduces property taxes in exchange for property owners protecting habitat beyond what is required by regulations.

Expanded use of incentives programs to achieve restoration on privately owned shorelines should be considered whenever feasible and beneficial.

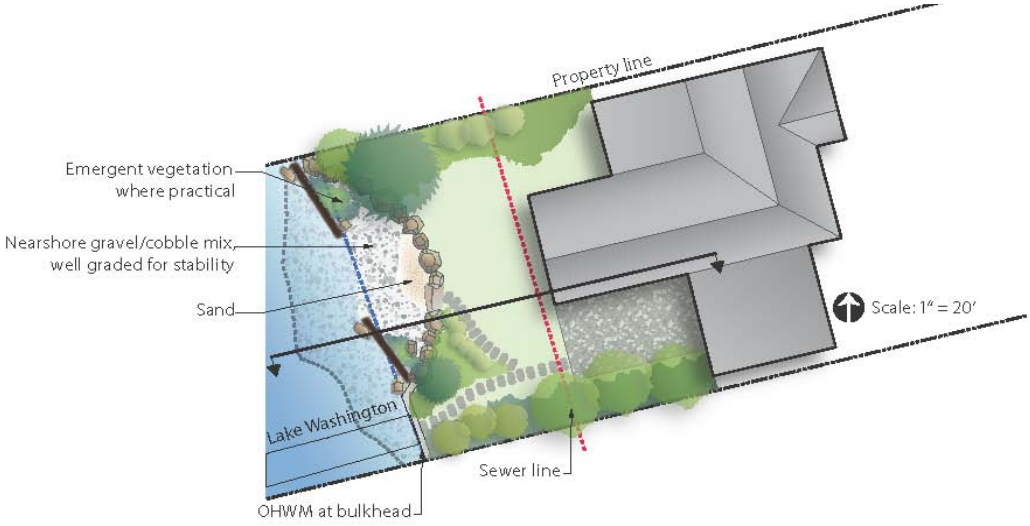
Restoration of Multiple Contiguous Properties: Through grant funding sources, restoration opportunities may be available to multiple contiguous shoreline properties, including residential lots that are interested in improving shoreline function. Restoring shoreline properties that are connected to one another would provide significantly more benefits than a more piecemeal approach. Therefore, priority should be given to restoration projects which involve multiple lots (such as accelerated permit processes).

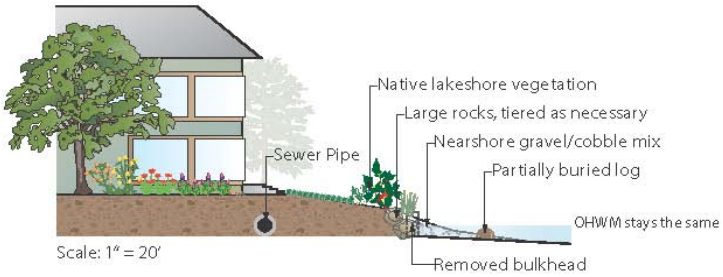
Figure 1

Before



After





** Figures modified by The Watershed Company from "Green Shorelines," a guidebook prepared by City of Seattle*

6.4 Public Education/Outreach

The *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* includes a table outlining 53 "Outreach and Education Actions" with target audiences for each action ranging from the general public, to shoreline property owners in general, to lakeshore property owners specifically, to businesses, to youth, and others. The complete list of WRIA 8 "Outreach and Education Actions" is included as Appendix D.

The City could also work with other local jurisdictions and the County to establish a Shore Stewards program within King County. Shore Stewards is a program operating in several counties throughout the State and provides a forum for waterfront and stream-side property owners to share ideas, information and resources and sets up guidelines for shoreline residents to preserve and enhance the shoreline environment.

7. PROPOSED IMPLEMENTATION TARGETS AND MONITORING METHODS

As previously noted, the City's shoreline area is occupied by multi- and single-family residences, commercial, and public recreation/open space areas. Therefore, efforts should be made to improve shoreline ecological function through the promotion of restoration and healthy practices at all levels, from large-scale marina users to single-family property owners. The City of Kirkland already has a very active environmental community with a restoration and education focus. Continued improvement of shoreline ecological functions on the shoreline requires a more comprehensive watershed approach, which combines upland and shoreline projects and programs.

7.1 Implementation Targets

The following table (Table 5) outlines a possible schedule and funding sources for implementation of a variety of efforts that could improve shoreline ecological function, and are described in previous sections of this report.

Table 5. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Schedule	Funding Source or Commitment
5.1 WRIA 8 Participation	Ongoing	The City is an active member of the WRIA 8 Forum and has membership on the Salmon Recovery Council. Membership at this time entails a commitment of staff and Council member time. In addition, the City contributes funding to support watershed salmon habitat recovery.
5.2 Comprehensive Plan Policies	Ongoing	The City makes a substantial commitment of staff time in the course of project and program reviews to determine consistency and compliance with the recently updated Comprehensive Plan. The next full GMA update to the Comprehensive Plan will occur in 2011, but other amendments will be made on an annual basis.

Restoration Project/Program	Schedule	Funding Source or Commitment
5.3 Natural Resources Management Plan	Ongoing	As an implementation measure for this plan, the City has established an interdepartmental team to focus on natural resource issues, requiring a commitment of staff time.
5.4 Critical Areas Regulations	Ongoing with update in 2011	The City makes a substantial commitment of staff time in the course of project and program reviews to determine consistency and compliance with their Critical Areas Regulations. In addition, the City is scheduled to update its Critical Area Regulations in 2011.
5.5 Stormwater Planning	Ongoing	Currently, the City commits to staff time, materials, and projects in its CIP. The City currently follows its *2008 Stormwater Management Program* which implements the City's Phase II NPDES permit and reports annually to Ecology. The City is also involved in the implementation of the 2005 *Surface Water Master Plan*, which goals includes flood reduction, water quality improvements and aquatic habitat improvements.
5.6 Green Building Program	Ongoing	Currently, staff time and materials support these programs. A Green Shoreline component may be added to the program to encourage shoreline mitigation beyond what the shoreline regulations could require for building permits. The City is also working with the Master Builders Association to determine whether shoreline restoration strategies could be added to the BuiltGreen certification program.
5.7 Comprehensive Park, Open Space and Recreation Plan 2001	Ongoing, with update underway	Currently, the City commits to staff time, materials, and projects in its CIP.
5.8 Green Kirkland Partnership	Ongoing	Currently, the City commits staff time, materials, and funding through the CIP to support these programs.
5.9 Other Kirkland Parks and Community Services Department Activities	Ongoing, with demonstration projects as funds and opportunity allow	Currently, staff time, materials and funding support these programs. The public parks along the shoreline provide a unique opportunity to create a restoration strategy demonstration area, which can serve as a valuable education tool, providing property owners with information to restore their own property. As the City considers implementation of CIP projects in shoreline parks, it should consider restoration strategies as well as interpretative signage and materials.

Restoration Project/Program	Schedule	Funding Source or Commitment
5.10 Public Education	Ongoing	Currently, staff time and materials are provided in developing public education and outreach efforts, which are highlighted in the Comprehensive Plan policy statement based on the goal of natural resource protection. These items help guide City staff and local citizen groups in developing mechanisms to educate the public and broaden the interest in protecting and enhancing local environmental resources.
5.11 Public Works Programs	Ongoing	Currently, staff time, materials and an unspecified amount of funding support these programs.
5.12 Capital Improvement Program	Ongoing	The City funds a number of projects through its Capital Improvement Program that will minimize impacts to and enhance the shoreline environment, including work within the larger drainage basin to improve water quality as well as park renovation and acquisitions to protect and restore shoreline functions.
5.13 Cascade Land Conservancy	As funds and opportunity allow	These private organizations are either a source of grant funds for restoration projects, an advocate for specific restoration projects, independently obtains grants for restoration projects, or a partner in implementing restoration or education projects.
5.14 Eastside Audubon		
5.15 Moss Bay Diving Club	As volunteer opportunity allow	This organization periodically performs volunteer cleanup services in Lake Washington.
6.1 Unfunded WRIA 8 Projects	As funds and opportunity allow	The City Council passed a resolution in 2005 expressing its approval and support for the *Chinook Salmon Conservation Plan* (Steering Committee 2005). Projects will be funded by the City, partnering agencies and non-profit organizations, and grants as projects and funding opportunities arise. The City continues to identify funds for the implementation of the WRIA 8 projects in the City of Kirkland
6.2 Recommended Projects - Public	As funds and opportunity allow	Projects identified in this section would likely be implemented either when grant funds are obtained, when partnerships are formed between the City and other agencies or non-profit groups, or as may be required by the critical areas regulations and the Shoreline Master Program during project-level reviews by the City.
6.3 Recommended Projects - Private		
6.4 Public Education/ Outreach	As funds and opportunity allow	On-going and future education efforts should be coordinated with the City and partnering agencies, including funding sources (grant funding, monetary donations, volunteer hours)

7.2 Potential Additional Funding Sources

Potential funding opportunities for restoration projects could include both federal and state grants and legislative funds administered by state agencies, private non-governmental grant

funding, as well as funding through participation in the WRIA 8 Steering Committee, and/or strategic partnering with King County agencies. A list of potential funding sources is included in Appendix E. While this list does not contain an exhaustive review of potential funding opportunities, it is a resource that can continually be maintained and updated.

7.3 Monitoring

In the context of the SMP update, restoration planning is a long-term effort. The SMP guidelines include the general goal that local master programs "include planning elements that, when implemented, serve to improve the overall condition of habitat and resources within the shoreline area" (WAC 173-26-201(c)).

The legislature has provided an overall timeframe for future amendments to the SMP. In 2003, Substitute Senate Bill 6012 amended the Shoreline Management Act (RCW 90.58.080) to establish an amendment schedule for all jurisdictions in the state. Once the City of Kirkland amends its SMP (on or before December 1, 2009), the City is required to review, and amend if necessary, its SMP once every seven years (RCW 90.58.080(4)). During this review period, the City should document progress toward achieving shoreline restoration goals. The review could include:

- Re-evaluating adopted restoration goals, objectives, and policies;
- Summarizing both planning efforts (including application for and securing grant funds) and on-the-ground actions undertaken in the interim to meet those goals, including action on the specific projects identified in Section 4.2.3; and
- Revising the SMP restoration planning element to reflect changes in priorities or objectives.

In preparation and as part of its Shoreline Master Program updates, the City will review project monitoring information and shoreline conditions, and reevaluate restoration goals, priorities and opportunities.

In order to accomplish this task, City planning staff will track all land use and development activity, including exemptions, within shoreline jurisdiction, and shoreline actions and programs of the Parks and Public Works departments as well development activity on private property. A tracking system will be established that provides basic project information, including location, permit type issued, project description, impacts, mitigation (if any), and monitoring outcomes as appropriate. Examples of data categories might include square feet of non-native vegetation removed, square feet of native vegetation planted or maintained, reductions in chemical usage to maintain turf in City parks, linear feet of eroding bank stabilized through plantings, linear feet of shoreline armoring removed, square feet of overwater cover reduced or converted to grating, or number of fish passage barriers corrected.

A staff report will be prepared, on a seven (7) year cycle of adoption of the SMP, that summarizes the information from the tracking system, updates Tables 2 and 5 above, and outlines implementation of various programs and restoration actions (by the City or other groups) that relate to watershed health. The staff report will be used, in light of the goals and objectives of the Shoreline Master Program, to determine whether implementation of the SMP is

meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the *Shoreline Analysis Report* (The Watershed Company 2006). In the long term, the City should be able to demonstrate a net improvement in the City of Kirkland's shoreline environment.

Based on the results of the assessment in the staff report, the City may make recommendations for changes to the SMP.

8. RESTORATION PRIORITIES

The process of prioritizing actions that are geared toward restoration of Kirkland's shoreline areas involves balancing ecological goals with a variety of site-specific constraints. Briefly restated, the City's environmental protection and restoration goals include: 1) protecting watershed processes, 2) protecting fish and wildlife habitat, and 3) contributing to chinook conservation efforts. Constraints that are specific to Kirkland include a highly developed residential shoreline along Lake Washington with large percentage of public open space/access. While some areas may already offer fairly good ecological functions (Juanita Bay/Forbes Creek wetland and Yarrow Bay wetland), they tend to include some additional opportunities to further enhance ecological functions. These goals and constraints were used to develop a hierarchy of restoration actions to rank different types of projects or programs associated with shoreline restoration.

Programmatic actions, like continuing WRIA 8 involvement and conducting outreach programs to local residents, tend to receive relatively high priority opposed to restoration actions involving private landowners. Other factors that influenced the hierarchy are based on scientific recommendations specific to WRIA 8, potential funding sources, and the projected level of public benefit. Restoration projects on public property, such as those identified in Section 6.2, have received a high priority ranking due to their availability to be funded by a variety of sources, such as CIP program, Parks Department, grants, and non-profit groups.

Although restoration project/program scheduling is summarized in the previous section (Table 5), the actual order of implementation may not always correspond with the priority level assigned to that project/program. This results from the balancing of various interests that must occur with limited funds and staff time. Some projects, such as those associated with riparian planting, are *relatively* inexpensive and easy to permit and should be implemented over the short and intermediate term despite the perception of lower priority than projects involving extensive shoreline restoration or large-scale capital improvement projects. Straightforward projects with available funding should be initiated immediately for the worthwhile benefits they provide and to preserve a sense of momentum while permitting, design, site access authorization, and funding for the larger, more complicated, and more expensive projects are under way.

8.1 Priority 1 – Continue Water Resource Inventory Area (WRIA) 8 Participation

Of basic importance is the continuation of ongoing, programmatic, basin-wide programs and initiatives such as the WRIA 8 Forum. Continue to work collaboratively with other jurisdictions and stakeholders in WRIA 8 to implement the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan*. This process provides an opportunity

for the City to keep in touch with its role on a basin-wide scale and to influence habitat conditions beyond its borders, which, in turn, come back to influence water quality and quantity and habitat issues within the City.

8.2 Priority 2 – Public Education and Involvement

Public education and involvement has a high priority in the City of Kirkland due to the predominance of residential development along the shoreline. Recent outreach efforts by other jurisdictions, such as the handbook *Green Shorelines: Bulkhead Alternatives for a Healthier Lake Washington* (City of Seattle 2008), have begun to change the perception of shoreline aesthetics, use, and ecological health. This and other outreach efforts (i.e. workshops, websites, example projects) are clear motivating and contributing factors for restoration activities on private property.

While many opportunities for shoreline restoration exist within City parks (see Section 6.2), multiple other opportunities also exist along community-owned properties and commercial development. Whether the focus is on single-family residential, community-owned, or commercial properties, providing education opportunities and involving the public is key to success, and would possibly entail coordinating the development of a long-term Public Education and Outreach Plan (Section 6.2). This could also include focusing on gaining public support for restoration along City parks.

Specific projects from the Action Start List include developing a workshop series and website that is tailored to lakeshore property owners, and that promotes natural yard care, alternatives to vertical bulkheads, fish-friendly dock design, best management practices for aquatic weed control, porous paving, and environmentally friendly methods of maintaining boats, docks, and decks. Collaborative efforts with other jurisdictions (i.e City of Seattle and Bellevue) could be completed to meet the Action Start List goals. Additionally, design competitions and media coverage could be used to promote the use of "rain gardens" and other low impact development practices that mimic natural hydrology. A home/garden tour or "Street of Dreams" type event might serve to showcase these landscape/engineering treatments.

8.3 Priority 3 – Reduce Shoreline Armoring along Lake Washington, Create or Enhance Natural Shoreline Conditions

The preponderance of shoreline armoring and its association with impaired habitat conditions, specifically for juvenile chinook salmon, has been identified as one of the key limiting factors along Lake Washington (Kerwin 2001). Nearly 86 percent of the developed shoreline within the City of Kirkland (not including Juanita Bay and Yarrow Creek Wetland) is armored at or below the ordinary high water mark (The Watershed Company 2006). While there are no specifically identified projects in the *Final Lake Washington/ Cedar/ Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* that are located within Kirkland, there are many opportunities listed in this Restoration Plan which focus on the potential reduction in shoreline armoring and subsequent restoration and enhancement of shoreline ecological functions. Examples of opportunities to reduce shoreline armoring on public property, in order of priority rank, include (see Section 6.2 and Appendix C):

Site Number	Location
31	O.O. Denny Park

30	O.O. Denny Park
27	Houghton Beach Park
17	David Brink Park
23	Marsh Park
9	Waverly Park
13	Marina Park

However, emphasis should also be given to future project proposals that involve or have the potential to restore privately-owned shoreline areas to more natural conditions. The City should explore ways in which to assist local property owners, whether through technical or financial assistance, permit expediting, or guidance, to team together with restoration of multiple contiguous lots.

Recommendations from the Action Start List reflect this focus and encourage salmon friendly shoreline design during new construction or redevelopment by offering incentives and regulatory flexibility to improve bulkhead and dock design and revegetate shorelines. Other recommendations from the List that support this priority include: 1) increasing enforcement that addresses nonconforming structures over the long run by requiring that major redevelopment projects meet current standards; 2) discouraging construction of new bulkheads and offer incentives (e.g., provide expertise, expedite permitting) for voluntary removal of bulkheads, beach improvement, riparian revegetation; 3) utilizing interpretive signage where possible to explain restoration efforts.

8.4 Priority 4 – Reduction of In-water and Over-water Structures

Similar to Priority 3 listed above, in-water and over-water structures, particularly piers, docks, and covered moorages, have been identified as one of the key limiting factors in Lake Washington (Kerwin 2001). Pier density along the City's developed shoreline is 39 piers per mile – very similar to a lake-wide average of 36 piers per mile. The density of residential development along the City's lakeshore is the main reason for the slightly higher-than-average pier density. While the pier density along residential shorelines is much higher than what is typically found along City-owned park property, the overall footprint of each public pier is generally much greater than is found along single-family residential sites. Opportunities exist for reduction in pier size and overall shading impacts through pier modifications on public sites. Examples, in order of priority rank, include (see Section 6.2 and Appendix C):

Site Number	Location
1	Juanita Beach Park
4/5	Forbes Creek/Juanita Bay Park
~~13~~12	Marina Park
~~27~~26	Houghton Beach Park
~~9~~8	Waverly Park
~~17~~16	David Brink Park
~~23~~22	Marsh Park
21	Settler's Landing

Although no specific privately-owned project sites to reduce in-water and over-water structures within residential areas are identified here, future project proposals involving reductions in the

size and/or quantity of such structures should be emphasized. Such future projects may involve joint-use pier proposals or pier reconstruction and may be allowed an expedited permit process.

Action Start List Recommendations in support of Priority 4 above include: 1) supporting the joint effort by NOAA Fisheries and other agencies to develop consistent and standardized dock/pier specifications that streamline federal/state/local permitting; 2) promoting the value of light-permeable docks, smaller piling sizes, and community docks to both salmon and landowners through direct mailings to lakeshore landowners or registered boat owners sent with property tax notice or boat registration tab renewal; and 3) offering financial incentives for community docks in terms of reduced permit fees and permitting time, in addition to construction cost savings. Similarly, the *WRIA 8 Conservation Plan* identified a future project (C302) to explore opportunities to reduce the number of docks by working with private property owners.

8.5 Priority 5 – Restore Mouths of Tributary Streams, Reduce Sediment and Pollutant Delivery to Lake Washington

Although most of the streams and their basins located within the City are outside of shoreline jurisdiction, except the lower sections of Yarrow Creek, ~~and~~ Forbes Creek, Denny Creek, Champagne Creek and other Segment A tributaries (Yarrow and Forbes Creeks ~~which~~ are both within the boundaries of shoreline associated wetlands), their impacts to shoreline areas should not be discounted. Many of these streams have the potential to provide fish and wildlife habitat. Specific projects in this category include the unfunded WRIA 8 project (C296) listed in Section 5.1 to restore the downstream section and mouth of Juanita Creek which feeds into Lake Washington. This would include working closely with the City's Park Department to provide revegetation, installation of habitat features, and other habitat modifications.

For juvenile chinook, once they enter Lake Washington, they often congregate near the mouths of tributary streams, and prefer low gradient, shallow-water habitats with small substrates (Tabor and Piaskowski 2002; Tabor et al. 2004b; Tabor et al. 2006). Chinook fry entering Lake Washington early in the emigration period (February and March) are still relatively small, typically do not disperse far from the mouth of their natal stream, and are largely dependent upon shallow-water habitats in the littoral zone with overhanging vegetation and complex cover (Tabor and Piaskowski 2002; Tabor et al 2004b). The mouths of creeks entering Lake Washington (whether they support salmon spawning or not), as well as undeveloped lakeshore riparian habitats associated with these confluence areas, attract juvenile chinook salmon and provide important rearing habitat during this critical life stage (Tabor et al. 2004b; Tabor et al. 2006).

Later in the emigration period (May and June), most chinook juveniles have grown to fingerling size and begin utilizing limnetic areas of the Lake more heavily (Koehler et al. 2006). As the juvenile chinook salmon mature to fingerlings and move offshore, their distribution extends throughout Lake Washington. Although early emigrating chinook fry from the Cedar River and North Lake Washington tributaries (primary production areas) initially do not disperse to shoreline areas in Kirkland, any salmon fry from smaller tributaries such as Juanita Creek, Forbes Creek, or Yarrow Creek, would depend on nearshore habitats of the Kirkland waterfront. Later in the spring (May and June), however, juvenile Chinook are known to be well distributed throughout both limnetic and littoral areas of Lake Washington, and certainly utilize shoreline habitats in Kirkland.

Action Start List Recommendations in support of Priority 5 above include: 1) addressing water quality and high flow impacts from creeks and shoreline development through NPDES Phase 1 and Phase 2 permit updates, consistent with Washington Department of Ecology's 2005 Stormwater Management Manual, including low impact development techniques, on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into the lakes; and 2) Protecting and restoring water quality and other ecological functions in tributaries to reduce effects of urbanization. This involves protecting and restoring forest cover, riparian buffers, wetlands, and creek mouths by revising and enforcing critical areas ordinances and Shoreline Master Programs, incentives, and flexible development tools.

Priority 6 – Improve Riparian Vegetation, Reduce Impervious Coverage

Similar to the priorities listed above, improved riparian vegetation and reduction in impervious surfaces are emphasized in the *WRIA 8 Conservation Plan*. Nearly all of the specific project sites listed in Tables 3 and 4 include some form of protecting and improving riparian vegetation and several include reduction in impervious surface coverage. Examples of opportunities on public property, in order of priority rank, include (see Section 6.2 and Appendix C):

Site Number	Location
32	O.O. Denny Park (vegetation)
~~27~~28	Houghton Beach Park (vegetation)
~~9~~10	Waverly Park (vegetation)
~~17~~19	David Brink Park (vegetation)
~~23~~24	Marsh Park (vegetation)
33	O.O. Denny Park (vegetation)
~~13~~14	Marina Park (vegetation)
~~21~~20	Settler's Landing (vegetation)
~~23~~25	Marsh Park (impervious surfaces)
11	Waverly Park (impervious surfaces)
15	Street-end Park (impervious surfaces)

Priority 7 – Reduce Aquatic Non-Native Invasive Weeds

While not specifically listed in the *WRIA 8 Conservation Plan*, reduction of aquatic invasive weeds from Lake Washington, particularly Eurasian watermilfoil and white water lily, is emphasized in Section 6.2. In particular, the nearshore areas surrounding both Juanita Bay and Yarrow Bay have large monocultures of these invasive aquatic plants. Growth of white water lily is particularly troublesome near the mouth of Forbes Creek, extending south along the shoreline of Juanita Bay Park.

Additionally, many other areas along the City's waterfront have also been subject to extensive growth of Eurasian watermilfoil. Not only are aquatic weeds a problem for boats and swimmers, but they also tend to reduce dissolved oxygen to lethal levels for fish, hampering foraging opportunities. As noted previously, nuisance-motivated control of invasive vegetation using herbicides has been approved by Ecology for the Yarrow Shores Condominiums, and the Carillon Point Marina and condominiums through 2011 (The Watershed Company 2006). Long-term control of aquatic non-native invasive plants in Lake Washington will be very difficult to

achieve without coordinated inter-jurisdictional collaboration, including involvement and leadership from Washington State.

8.7 Priority 8 –Improve Water Quality and Reduce Sediment and Pollutant Delivery

Although most of the streams and their basins located within the City are outside of shoreline jurisdiction, except the lower sections of Yarrow Creek, ~~and~~ Forbes Creek, Denny Creek, Champagne Creek and other Segment A tributaries, ~~which are both within the boundaries of shoreline associated wetlands,~~ their impacts to shoreline areas should not be discounted. Many of these streams have the potential to provide fish and wildlife habitat. They are also a common receiving body for non-point source pollution, which in turn delivers those contaminants to shoreline waterbodies.

Several actions focused on addressing water quality and stormwater controls include (derived from WRIA 8 watershed-wide actions list).

- Expand/Improve Incentives Programs
- Improve Enforcement of Existing Land Use and Other Regulations
- Increase Use of Low Impact Development and Porous Concrete
- Provide Incentives for Developers to Follow Built Green™ Checklist Sections Benefiting Salmon

These recommendations emphasize the use of low impact development techniques, on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into surface waters. They involve protecting and restoring forest cover, riparian buffers, wetlands, and creek mouths by revising and enforcing critical areas ordinances and Shoreline Master Programs, incentives, and flexible development tools.

8.9 Priority 9 – Acquisition of Shoreline Property for Preservation, Restoration, or Enhancement Purposes

The City should explore opportunities to protect natural areas or other areas with high ecological value or restoration potential via property acquisition. Mechanisms to purchase property would likely include collaboration with other stakeholder groups including representatives from local government, businesses and the general public in order to develop a prioritized list of actions. Many of the undeveloped properties located along the western edge of the Yarrow Bay wetland, which are highly encumbered by the presence of this high quality wetland, may be available for acquisition geared at preserving their overall function. Other properties throughout the more developed shoreline areas within the City may be available for acquisition both for preservation but also to act as a showcase for restoration potential.

8.10 Priority 10 – City Zoning, Regulatory, and Planning Policies

City Zoning, Regulatory, and Planning Policies are listed as being of lower priority in this case simply because they have been the subject of a thorough review and have recently been

updated accordingly. Notably, the City's Critical Areas Ordinance was updated (April 2003) consistent with the Best Available Science for critical areas, including those within the shoreline area. For the time being, it is considered more important to capitalize on this Restoration Plan by focusing on implementing projects consistent with the updated SMP policies. Unimplemented or unused policies, by themselves, will not improve habitat. As time goes by, further review and potential updating of these policies may increase in priority. Policy-related items in this category as listed in previous sections include Comprehensive Plan Policies (Section 5.2), Critical Areas Regulations (Section 4.3), and Stormwater Planning (Section 5.4).

The City received its final NPDES Phase II permit in February 2007 from Ecology. The NPDES Phase II permit is required to cover the City's stormwater discharges into regulated lakes and streams. Under the conditions of the permit, the City must protect and improve water quality through public education and outreach, detection and elimination of illicit non-stormwater discharges (e.g., spills, illegal dumping, wastewater), management and regulation of construction site runoff, management and regulation of runoff from new development and redevelopment, and pollution prevention and maintenance for municipal operations.

The City conducts all of the above at some level already, but significant additional effort may be needed to document activities and to alter or upgrade programs. The City has various programs to control stormwater pollution through maintenance of public facilities, inspection of private facilities, water quality treatment requirements for new development, source control work with businesses and residents, and spill control and response. Monitoring may be required as part of an illicit discharge detection and elimination program, for certain construction sites, or in waterbodies with a Total Maximum Daily Load (TMDL) Plan for particular pollutants. General water quality monitoring concerns include: a) stormwater quality; b) effectiveness of best management practices; and c) effectiveness of the stormwater management program.

9. CONCLUSIONS

This plan provides multiple programmatic and site-specific opportunities for restoring the City's shoreline areas that outline opportunities to achieve a net benefit in ecological conditions. The *Final Shoreline Analysis Report* has documented the following as key ecological impairments within the Kirkland shoreline areas: Lack of riparian vegetation and large woody debris, extensive shoreline armoring, extensive overwater coverage, nutrient and toxic inputs from runoff, and invasive aquatic vegetation. Ecological benefits that would be realized by implementing this plan include: increased use of soft approaches for shoreline stability and corresponding reductions in low-functioning hard shorelines; increased organic inputs, habitat, and filtration from shoreline riparian vegetation; improved wildlife corridor connectivity; improved habitat for salmon; displacement of noxious vegetation; and eventual introduction of woody debris.

Restoration planning is a new element of the SMP. As such, implementation of this plan will require additional City efforts and resources to implement the policies of this plan.

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APPENDIX A

CITY OF KIRKLAND RESOLUTION R-4510
RATIFYING THE WRIA 8 CHINOOK SALMON CONSERVATION PLAN

APPENDIX B

BLANK RESTORATION PROJECT RANKING FORM

Ranking Form

Number
Site
Activity

Description

Section A: Ecological Considerations		**Area or Distance**	**Rating**	**Weighting Factor**	**Total**
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)			1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)			1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)			2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)			1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).			0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)			1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)			0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).			0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).			0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)			1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)			1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)			1	0.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).			1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter			1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)			0.5	0
	Section A Subtotal				0.0
Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)			0.5	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)			0.5	0
B3	Cost of the project (high cost = 0, low cost = 5)			0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)			0.5	0
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)			0.5	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)			0.5	0
	Section B Subtotal				0
	Grand Total				0.0

	Notes
A1	Enter the square footage of riparian buffer area that will be enhanced with native vegetation. If the enhancement area is greater than 4,000 square feet, enter 4,000.
A2	Enter the linear footage of shoreline where gradient will be restored. If the project restores gradient over a distance greater than 100 feet, enter 100 feet)
A3	Enter the linear footage of shoreline where armoring will be removed. If the project removes armoring over a distance greater than 100 feet, enter 100 feet)
A4	Enter the square footage of overwater cover that will be removed near the shoreline (0 to 30 feet from the OHWM). If more than 200 square feet of overwater cover will be removed, enter 200.
A5	Enter the square footage of overwater cover that will be removed more than 30 feet from shore. If more than 300 square feet of overwater cover will be removed, enter 300.
A6	Enter the number of piles that will be removed near the shoreline (0 to 30 feet from the OHWM). If more than 20 , enter 20.
A7	Enter the number of piles that will be removed more than 30 feet from shore. If more than 30, enter 30.
A8	If the project increases light transmission through an existing nearshore structure (pier) without reducing its overwater footprint (i.e. by replacing wooden decking with grating), enter the square footage of overwater cover that will be daylighted (0 to 30 feet from the OHWM). If more than 200 square feet of nearshore overwater cover will be daylighted, enter 200.
A9	If the project increases light transmission through an existing off-shore structure (pier) without reducing its overwater footprint (i.e. by replacing wooden decking with grating), enter the square footage of overwater cover that will be daylighted (More than 30 feet from the OHWM). If more than 300 square feet of off-shore overwater cover will be daylighted, enter
A10	Enter the straight-line distance (in feet) to the nearest tributary. If the project is more than 1/4 mile (1,320 feet) from the nearest tributary, enter "0" in the rating column.
A11	Enter the distance, measured along the shoreline in feet, to the edge of the nearest high-quality shoreline habitat. If the project is more than 1/4 mile (1,320 feet) from the nearest high-quality shoreline habitat, enter "0" in the rating column.
A12	Enter 5 if the project has a high liklihood of improving ecological functions in the local area, 3 if the project may improve local ecological functions but there is some uncertainty of success, and 0 if there is little chance of improvement or there is a great deal of uncertainty associated with the success of the project.
A13	Enter "1" if there is some active environmental problem that will be addressed by the project, such as shoreline erosion or flooding.
A14	Enter the number of the shoreline segment where the project is located. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; if it is in Segment C, enter 2; if it is in Segment D, enter 1.

APPENDIX C

PROJECT RANKING FORMS

Number 1
Site Juanita Beach Park
Activity Install deck grating
Description The large overwater boardwalk with skirting, which forms the designated swimming area, has the potential for impact reduction by installing deck grating in the pier decking and potentially removing or redesigning the breakwater in order to improve migratory conditions for juvenile salmonids and water circulation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	20	1	1	5.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	30	1	0.5	2.5
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	300	1	1	3.9
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	100	1	1	4.6
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				23.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	4	0.5	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	2	0.5	1
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8
	Grand Total				31.0

Number 2
Site Juanita Beach Park
Activity In-stream habitat improvement
Description Potential in-stream habitat improvements exist at the mouth of Juanita Creek (delta), including large woody debris installation and improvements to native vegetative cover. The WRIA 8 Chinook Salmon Conservation Plan includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	5	0.5	2.5
	Section A Subtotal				34.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	0.5	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	1	0.5	0.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	0.5	1.5
	Section B Subtotal				6
	Grand Total				40.5


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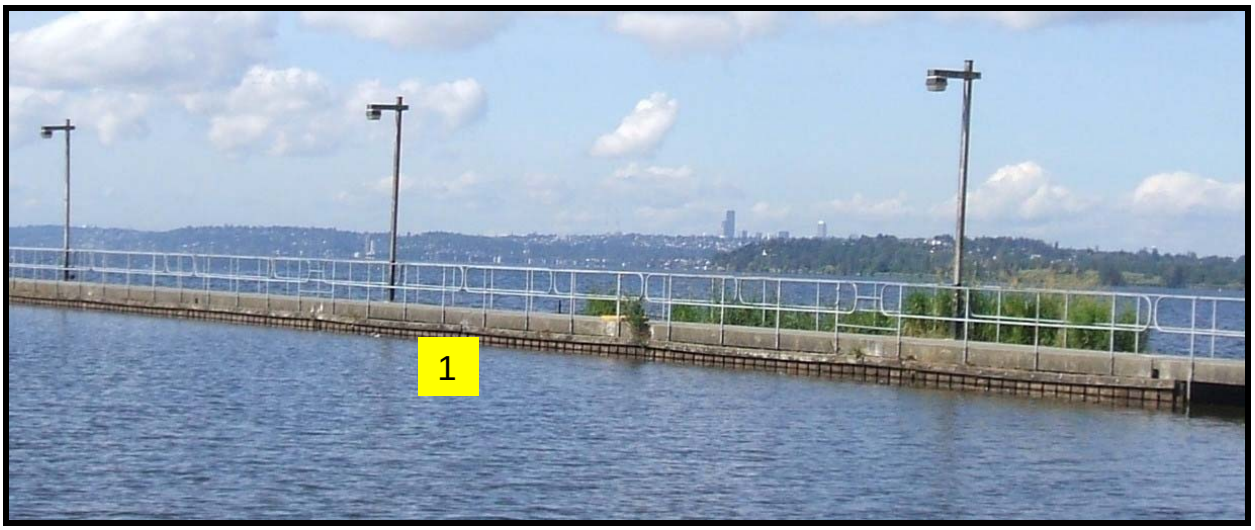
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Number 3
Site Forbes Creek - Juanita Bay Park
Activity Remove invasive vegetation
Description Invasive vegetation, primarily reed canarygrass, purple and garden loosestrife, and Himalayan blackberry in the terrestrial zones and white water lily in the aquatic zone, is currently growing throughout the Forbes Creek riparian corridor and Juanita Bay Park. The primary objective for the less developed landscape zones is removal of invasive species and replacement with native species, as well as supplementation of existing native vegetation to increase species and habitat diversity.

Section A: Ecological Considerations		**Area or Distance**	**Rating**	**Weighting Factor**	**Total**
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	1	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	0.5	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	0.5	1.5
	Section B Subtotal				9
	Grand Total				29.0

Number 4
Site Forbes Creek - Juanita Bay Park
Activity Improve fish passage and habitat
Description The pedestrian trail/trestle across Juanita Bay to the west of 98th Street covers the mouth of Forbes Creek, potentially inhibiting salmon migration. The surface of the walkway could be re-decked with a grated material to reduce shading impacts to the aquatic environment.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				14.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	4	0.5	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9.5
	Grand Total				23.5

Number 5
Site Forbes Creek - Juanita Bay Park
Activity Old pier pile removal

Description Many remnant pier piles located within Juanita Bay could be removed.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	20	1	1	5.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	30	1	0.5	2.5
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	800	1	1	2.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				17.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	0	0.5	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				6.5
	Grand Total				24.0


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Number 6
Site Lake Ave W Street End Park
Activity Remove invasive vegetation
Description This small street-end park consists of primarily lawn area with a moderate amount of shoreline vegetation (trees and shrubs). An abundance of invasive vegetation (ivy/reed canarygrass) could be removed and replaced with additional native vegetation to improve shoreline conditions for juvenile salmonids.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	1000	1	1.4	1.8
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)			0	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A	4	1	4.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				8.8

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				11
	Grand Total				19.8

Number 7
Site Lake Ave W Street End Park
Activity Reduce in-water structures

Description An old remnant moorage slip located near the south property line that is not connected to shore could be removed to reduce in- and overwater structures.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	30	1	1	0.8
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	56	1	0.5	0.5
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	2	1	1	0.5
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	3	1	0.5	0.3
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				3.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9.5
	Grand Total				12.5


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WELCOME TO KIRKLAND
LAKE AVENUE WEST PARK
CLOSED FROM 10:00 PM - DAWN


6

Number 8
Site Waverly Beach Park
Activity Reduce overwater cover

Description Reduction of overwater cover by the existing pier through the installation of deck grating and removing pier skirting as feasible.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				7.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				14.5

Number 9
Site Waverly Beach Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				19.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	4	0.5	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8
	Grand Total				27.0

Number 10
Site Waverly Beach Park
Activity Enhance shoreline vegetation

Description Supplementation of nearshore native vegetation to improve habitat conditions for juvenile salmonids.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				10.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				21.5

Number 11
Site Waverly Beach Park
Activity Reduce stormwater runoff

Description The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				3.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				11.5


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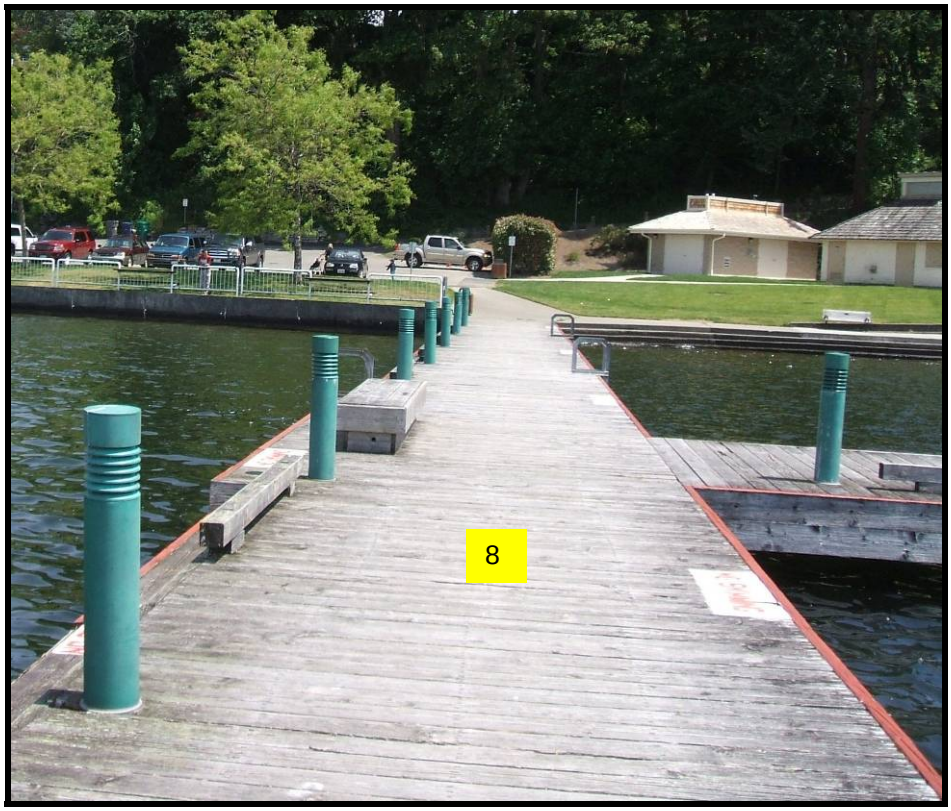
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Number 12
Site Marina Park
Activity Reduce overwater cover

Description Reducing overwater cover through the installation of deck grating on the existing piers.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	200	1	1	5.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.5	2.5
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				13.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				21.0

Number 13
Site Marina Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				19.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	2	0.5	1
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7
	Grand Total				26.0

Number 14
Site Marina Park
Activity Enhance shoreline vegetation

Description Improving nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	2000	1	1.4	3.5
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				6.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				18.0


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Number 15
Site Street-End Park
Activity Reduce stormwater runoff

Description This small street-end park consists of an adjacent parking area located within the shoreline jurisdiction that likely drains surface runoff directly to Lake Washington. Future use of pervious material should be explored any time repairs are proposed.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				2.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	1	0.5	0.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				6
	Grand Total				8.0


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Number 16
Site David Brink Park
Activity Install deck grating

Description Reducing overwater cover through the installation of deck grating on the existing piers.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				5.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	4	0.5	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9
	Grand Total				14.0

Number 17
Site David Brink Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				27.5

Number 18
Site David Brink Park
Activity Reduce in-water structures

Description Removing unused remnant pier piles.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)	5	1	1	1.3
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)	4	1	0.5	0.3
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A	0	1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				2.6

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	2	0.5	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9
	Grand Total				11.6

Number 19
Site David Brink Park
Activity Enhance shoreline vegetation

Description Improving nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				10.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				21.5


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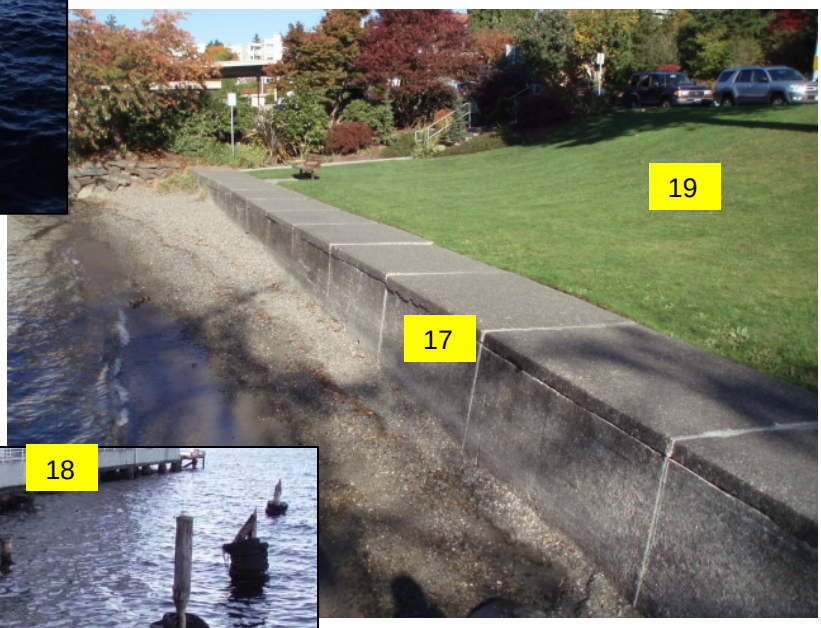
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Number 20
Site Settler's Landing
Activity Enhance shoreline vegetation

Description This small street-end park contains the opportunity to improve shoreline habitat by improving native vegetative cover.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	1000	1	1.4	1.8
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				2.8

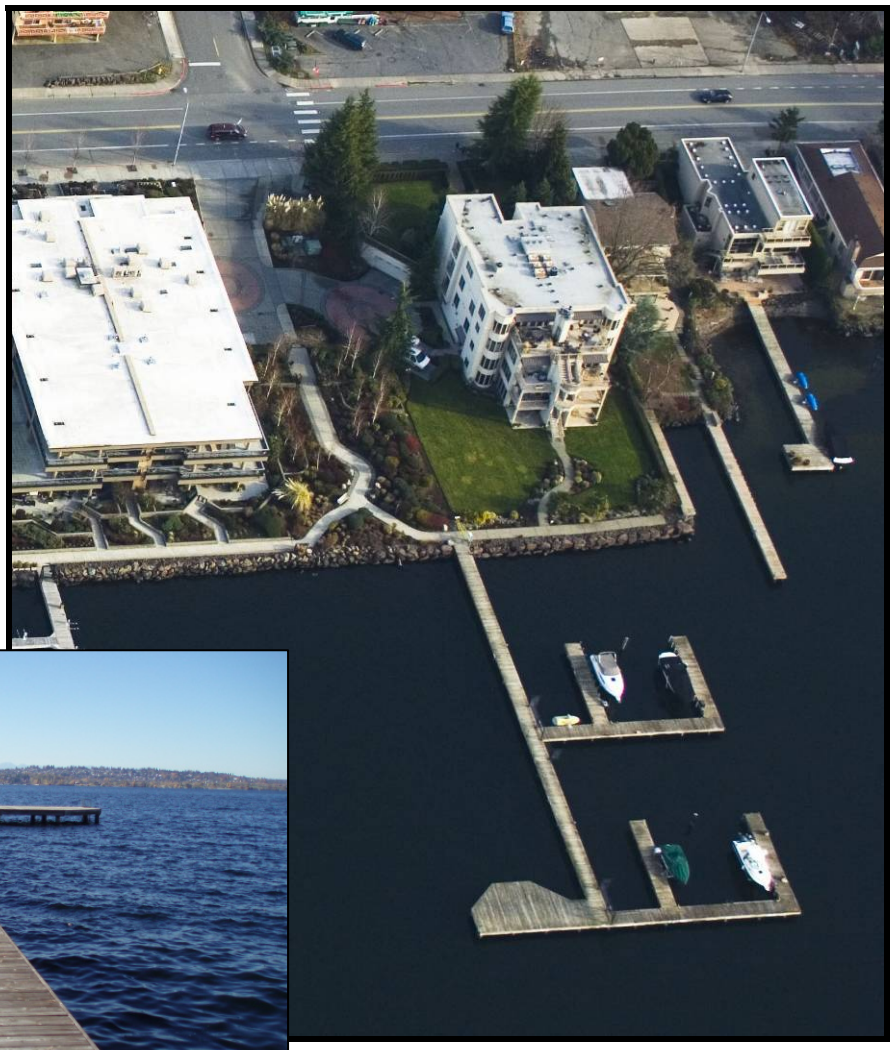
Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	2	0.5	1
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				10
	Grand Total				12.8

Number 21
Site Settler's Landing
Activity Install deck grating

Description The existing shared use pier (public and private) could potentially be re-decked with grated materials to reduce shading impacts.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	180	1	0.4	1.8
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				4.8

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				13.3

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Number 22
Site Marsh Park
Activity Install deck grating

Description Reduction of overwater cover by the existing pier through the installation of deck grating.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				5.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				13.5

Number 23
Site Marsh Park
Activity Reduce shoreline armoring

Description Removal or minimization of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				27.5

Number 24
Site Marsh Park
Activity Enhance shoreline vegetation

Description Improvement of nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				10.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				21.5

Number 25
Site Marsh Park
Activity Reduce stormwater runoff

Description The impact of existing impervious surfaces (paved parking areas) could be reduced through the use of pervious materials, relocation, or minimization.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)		0	1	0.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				3.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				9
	Grand Total				12.0


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Number 26
Site Houghton Beach Park
Activity Install deck grating

Description Reducing overwater cover through the installation of deck grating on the existing piers and removing pier skirting as feasible.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).	200	1	0.4	2.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).	300	1	0.2	1.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	700	1	1	2.3
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				8.3

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				16.8

Number 27
Site Houghton Beach Park
Activity Reduce shoreline armoring

Description Removing or minimizing the impacts of shoreline armoring.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	700	1	1	2.3
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				22.3

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	0	0.5	0
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	0.5	2.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7.5
	Grand Total				29.8

Number 28
Site Houghton Beach Park
Activity Enhance shoreline vegetation

Description Improving nearshore native vegetation.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	700	1	1	2.3
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				12.3

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	5	0.5	2.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	0.5	1.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	0.5	1
	Section B Subtotal				11.5
	Grand Total				23.8


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Number 29
Site Yarrow Bay
Activity Remove invasive vegetation
Description The biological need for control of aquatic invasive species in Yarrow Bay should be assessed. Both Yarrow Shores Condominiums and the Carillon Point Marina and condominiums have permits from Ecology to use chemical controls on milfoil and white water lily, which have become a nuisance to boaters and swimmers.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				20.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	0.5	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	0.5	2.5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	0.5	1.5
	Section B Subtotal				9.5
	Grand Total				29.5


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Number 30
Site OO Denny Park
Activity Reduce shoreline armoring

Description Remnants of a small concrete bulkhead exist along the northern ~550 feet of the park. This bulkhead has shown significant failure in places and no longer functions as intended. Bioengineering techniques, regrading and reshaping could be provided to secure the bank from excessive erosion and improve overall habitat functions.

Section A: Ecological Considerations		**Area or Distance**	**Rating**	**Weighting Factor**	**Total**
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	570	1	1	2.8
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter 1.	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				21.8
Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	3	0.5	1.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	3	0.5	1.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				8.5
	Grand Total				30.3

Number 31
Site OO Denny Park
Activity Reduce shoreline armoring

Description Existing concrete bulkhead (~400 feet long) which fronts the main park shoreline could be replaced with a sinuous more natural shoreline contour. At ordinary high water, the water is >1 foot deep at the bulkhead face. Restoration would potentially include extensive regraded of the immediate uplands to reduce the shoreline gradient transition. Regrading could potentially add to improve shoreline access by lowering the height differential between upland lawns and the water's edge

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)		0	1.4	0.0
A2	Project restores shoreline gradient (yes=1, no=0)	100	1	1	5.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	100	1	2	10.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	140	1	1	4.5
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter 1.	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				23.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	2	0.5	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	0.5	1.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	1	0.5	0.5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	0.5	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	0.5	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	0.5	0
	Section B Subtotal				7
	Grand Total				30.5

Number 32
Site OO Denny Park
Activity Enhance shoreline vegetation
Description Removal of invasives and replanting with natives could occur along most of the northern ~550 feet of shoreline, including the associated wetland, allowing for concentrated areas of public access to Lake Washington. The main shoreline which is fronted by the tall concrete wall is currently void of trees and shrubs. A few large trees are located between 50 and 80 feet from shore. Areas of shoreline revegetation would enhance shoreline functions and still allow for concentrated access to the shoreline.

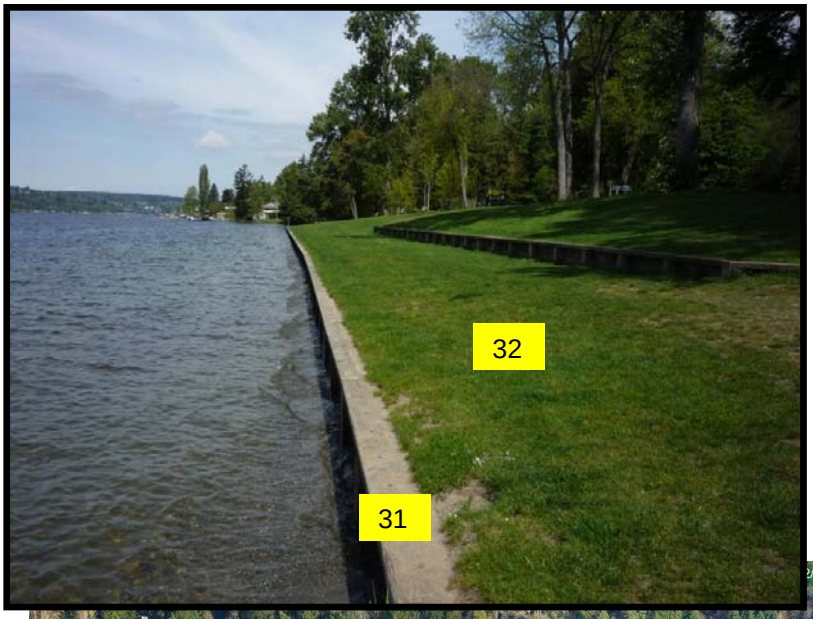
Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	4000	1	1.4	7.0
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter 1.	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				15.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	0.5	2.5
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	4	0.5	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	0.5	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	1	0.5	0.5
	Section B Subtotal				9
	Grand Total				24.0

Number 33
Site OO Denny Park
Activity Enhance shoreline vegetation
Description Native vegetation could be enhanced at the mouth of Denny Creek to bring vegetation further toward the lake. Currently, split rail and chain fencing segregates the riparian community from the lake. Wetland conditions may exist along stream flank near mouth and could be enhanced with native vegetation. The installation of riparian vegetation at the mouth may improve the channel definition and reduce sediment deposition at the mouth which may act as low flow barrier to fish passage during late summer and early fall. First pedestrian bridge upstream from the lake could be redecked with grated decking to replace plywood sheets.

Section A: Ecological Considerations		Area or Distance	Rating	Weighting Factor	Total
A1	Project enhances native riparian vegetation, either nearshore emergent or upland plants within the buffer zone (yes=1, no=0)	2500	1	1.4	4.4
A2	Project restores shoreline gradient (yes=1, no=0)		0	1	0.0
A3	Project reduces artificial shoreline armoring (yes=1, no=0)		0	2	0.0
A4	Project reduces artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A5	Project reduces artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.5	0.0
A6	Project removes in-water structure (i.e. pier piles) from the nearshore (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0)		0	1	0.0
A7	Project removes in-water structure (i.e. pier piles) from off-shore areas (Anywhere beyond 30 feet waterward of OHW; yes=1, no=0)		0	0.5	0.0
A8	Project increases light transmission through an existing artificial overwater cover near the shoreline (Anywhere from 0 to 30 feet waterward of OHW; yes=1, no=0).		0	0.4	0.0
A9	Project increases light transmission through an existing artificial overwater cover in off-shore areas (Areas more than 30 feet from OHW; yes=1, no=0).		0	0.2	0.0
A10	Project is within 1/4 mile of the mouth of a tributary (yes=1, no=0)	0	1	1	5.0
A11	Project is within 1/4 mile of other high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A12	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A13	Is there some ecological risk associated with not conducting restoration at the site (yes=1, no=0).	N/A	0	1	0.0
A14	Urbanization within overall shoreline segment. If the project is in Segment A, enter 4; if it is in Segment B, enter 5; in Segment C, enter 2; in Segment D, enter 1.	N/A		1	0.0
A15	Project identified in, or is consistent with, adopted watershed restoration plans & policies (regional WRIA 8 high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	0.5	0
	Section A Subtotal				12.4

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0)	N/A	5	0.5	2.5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	0.5	2
B3	Cost of the project (high cost = 0, low cost = 5)	N/A	4	0.5	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	0.5	1.5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	0.5	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	1	0.5	0.5
	Section B Subtotal				8.5
	Grand Total				20.9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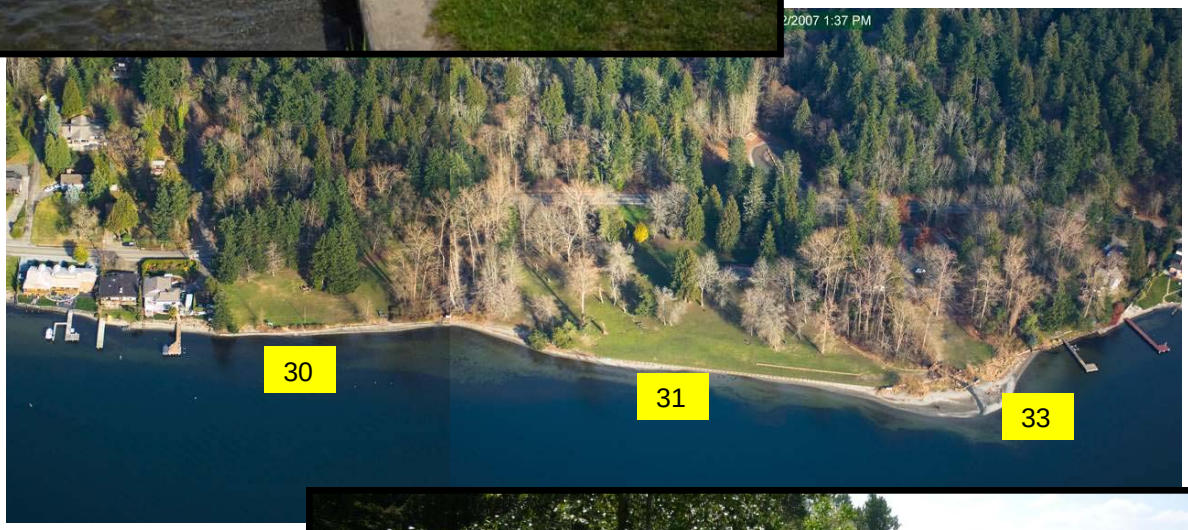
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APPENDIX D

PROPOSED OUTREACH AND EDUCATION ACTIONS

APPENDIX E

FUNDING OPPORTUNITIES

Grant Name	Allocating Entity	Web-Site
Acorn Foundation	Acorn Foundation	http://www.commoncounsel.org/Acorn%20Foundation
Allen Family Foundation, Paul G. – Science and Technology Program	Paul G. Allen Family Foundation	http://www.pgafamilyfoundation.org/
Aquatic Lands Enhancement Account (ALEA)	Washington Recreation and Conservation Office	http://www.rco.wa.gov/rcfb/grants/alea.htm
Salmon Recovery Grant Program	Washington Recreation and Conservation Office	http://www.rco.wa.gov/srfb/grants/salmon_recovery.htm
Freshwater Fish Conservation Initiative and other various programs	National Fish and Wildlife Foundation	http://www.nfwf.org/AM/Template.cfm?Section=Fish_Conservation2
Bullitt Foundation	Bullitt Foundation	http://www.bullitt.org/
Water Quality Program	Washington State Department of Ecology	http://www.ecy.wa.gov/programs/wq/funding/FundingPrograms.html
Sea Program	Washington State Department of Ecology	http://www.ecy.wa.gov/programs/sea/sea-grants.htm
Coastal Protection Account	Washington Department of Ecology	
Washington CZM 309 Improvement Grants Program	Washington Department of Ecology	http://www.ecy.wa.gov/programs/sea/czm/309-improv.html
NOAA Restoration Center Partnerships	NOAA Fisheries: Restoration Center	http://www.nmfs.noaa.gov/habitat/restoration/funding_opportunities/funding_nwr.html
Cooperative Endangered Species Conservation Fund	US Fish and Wildlife Service	http://www.fws.gov/endangered/grants/index.html
Doris Duke Charitable Foundation	Doris Duke Charitable Foundation	http://www.ddcf.org/
Fish America Grant Program	Fish America Foundation	http://www.fishamerica.org/grants/
Various	Environmental Protection Agency	http://www.epa.gov/epahome/grants.htm
Landowner incentive program	Washington State Department of Fish and Wildlife	http://wdfw.wa.gov/grants/lip/
King Conservation District Funds	King Conservation District	http://www.kingcd.org/pro_gra.htm

Grant Name	Allocating Entity	Web-Site
The King County Water Quality Block Grant Fund	King County	http://www.kingcounty.gov/environment/grants-and-awards/grant-exchange/waterworks.aspx
King County Community Salmon Fund	National Fish and Wildlife Foundation	http://www.kingcounty.gov/environment/grants-and-awards/grant-exchange/waterworks.aspx
King County Flood Control District	King County	http://www.kingcounty.gov/environment/waterandland/flooding/flood-control-zone-district.aspx

FINAL

Shoreline Cumulative Impacts Analysis for the City of Kirkland Shoreline Master Program

Prepared for:

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

November 2010
TWC Reference #051011

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FINAL

SHORELINE CUMULATIVE IMPACTS ANALYSIS

for the City of Kirkland Shoreline Master Program

Prepared by:

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Kirkland, WA 98033

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The Watershed Company Reference Number:
051011

The Watershed Company Contact Person:
Amy Summe and Dan Nickel

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The Watershed Company
November 2010

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)]

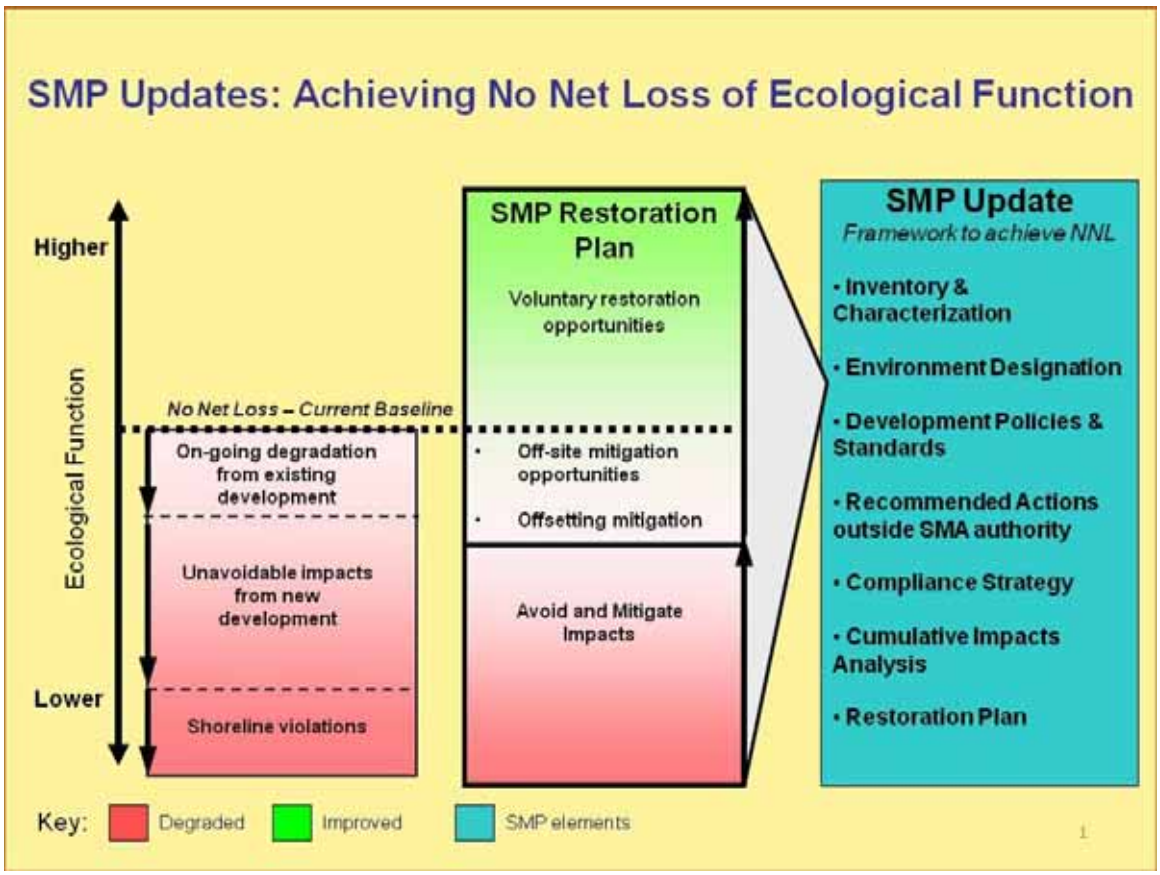
In short, updated SMPs shall contain goals, policies and regulations that prevent degradation of ecological functions relative to the existing conditions as documented in that jurisdiction's characterization and analysis report. For those projects that result in degradation of ecological functions, the 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 Figures A-1 through A-6 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, 27 percent of the City's shoreline frontage, including the annexation area, and over 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 73 percent of the shoreline frontage and just under 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)	16%	143 acres	44%
Urban Conservancy (UC)	5,782 Feet (1.10 Miles)	11%	24 acres	7%
Residential – Low (R-L)	27,115 Feet (5.14 Miles)	51%	102 acres	32%
Residential – Medium/High (R-M/H)	6,477 Feet (1.23 Miles)	12%	31 acres	10%
Urban Mixed (UM)	5,043 Feet (0.96 Miles)	10%	24 acres	7%
TOTAL	**52,729 Feet (10.0 Miles)**	**100%**	**323**	**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 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 located upland of Lake Washington and along Lake Street South and Lake Washington Boulevard 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 CIA-1a-f in Appendix B). The Residential – L environment contains 450 lots, 324 of which abut the water. Twenty-four lots are vacant, including 13 waterfront lots (see Figures CIA-1e/f and CIA-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 CIA-3a-g 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, 53 (22%) of the 242 waterfront parcels have residential structures located less than 30 feet (non-conforming structures) from the OHWM. Of the remaining developed lots, 107 (44%) have residential structures between 30 and 60 feet from OHWM, and 83 (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 Parcels in the City with Waterfront Structures	Number of Parcels in the Annexation Area with Waterfront Primary Structures
Total Waterfront Parcels	**97**	**145**
Structures < 30 ft from OHWM	23	30
Structures 30 - 60 ft. from OHWM	53	54

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

In general, setbacks ranged widely from essentially 0 feet to 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.

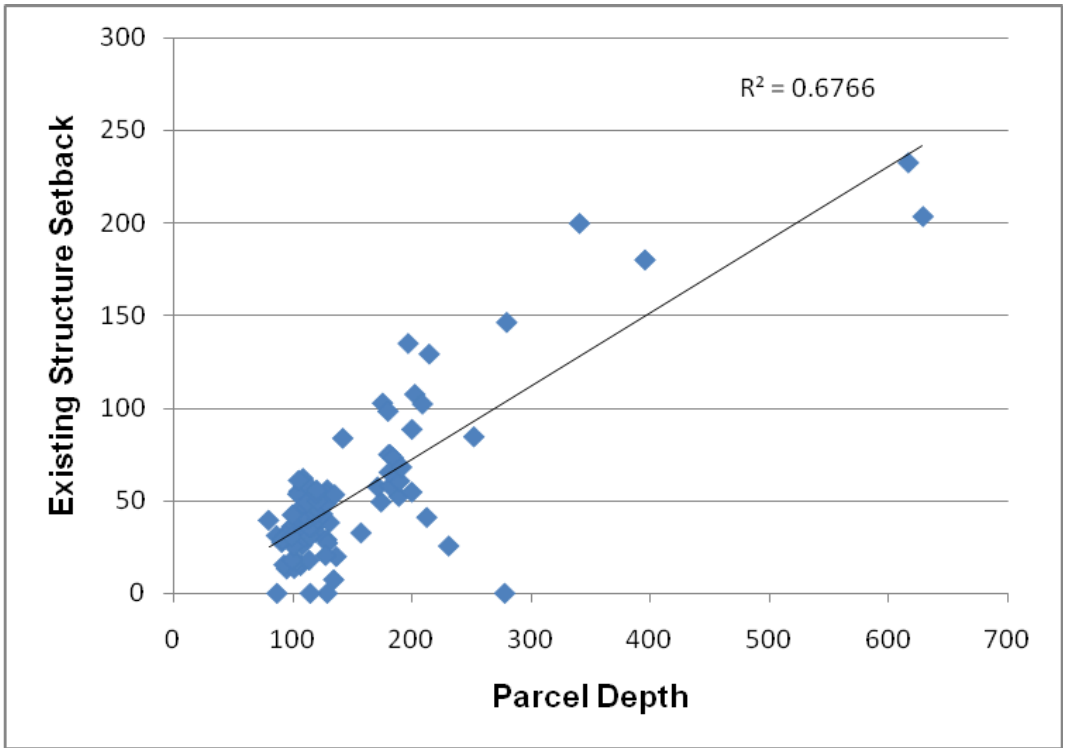


Exhibit 2a. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Low Shoreline Environment within the original City limits.

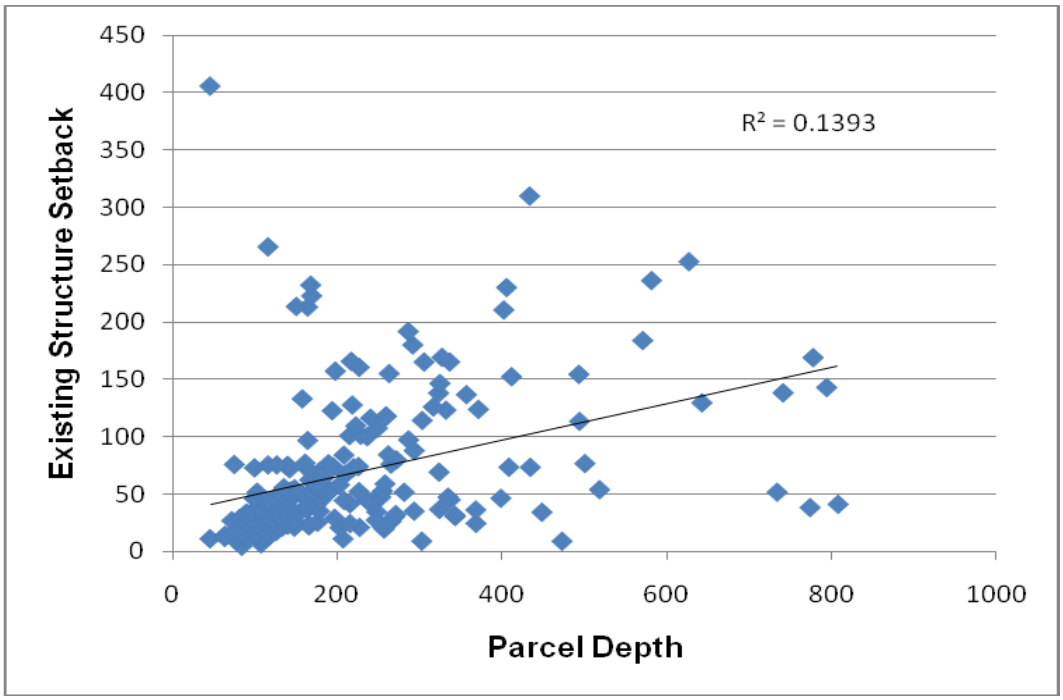


Exhibit 2b. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Low Shoreline Environment within the annexation area.

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 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 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]**
21,818 (80%)	5,297 (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 4. In-water structures in the Residential – L environment.

Total Number of Piers	Average Number of Piers per Mile	Total Overwater Cover
298	58	252,877 ft^2 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 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 located just west of Juanita Beach Park is rated as High functioning. Second and third areas of Residential – M/H environment located just north of Marina Park and further west of Juanita Beach Park are 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 CIA-1a-f in Appendix B). The Residential – M/H environment contains 95 lots, 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 CIA-3a-g 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 (47%) of the 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 (25%) have residential structures between 25 and 40 feet from OHWM, and 16 (27%) 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 Parcels in the City with Waterfront Structures	Number of Parcels in the Annexation Area with Waterfront Primary Structures
Total Waterfront Parcels	**56**	**3**
Structures < 25 ft from OHWM	28	0
Structures 25 - 40 ft. from OHWM	15	0
Structures > 40 ft. from OHWM	13	3

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.

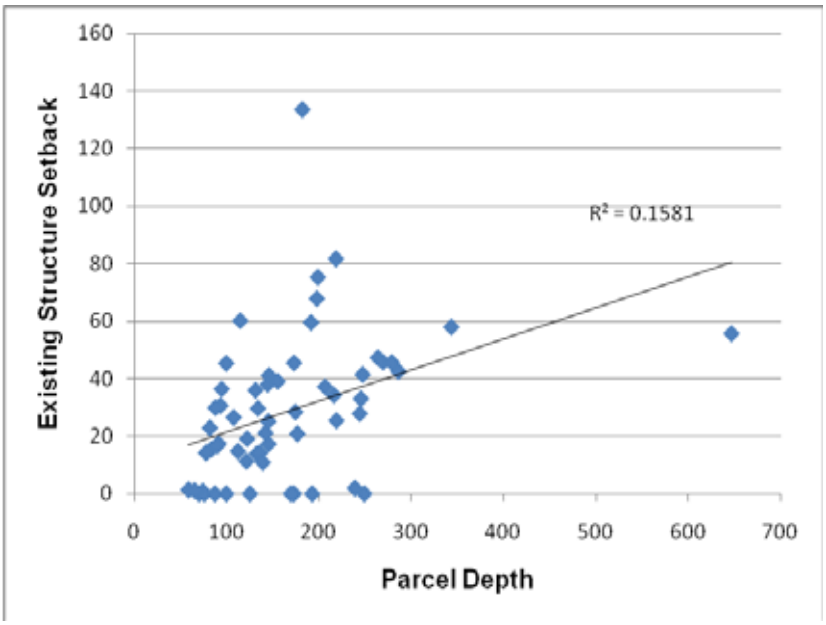


Exhibit 3. Relationship between Parcel Depth and Existing Structure Setback in the Residential – Medium/High Shoreline Environment within the combined original City limits and annexation areas.

2.2.2 Parks and Open Space/Public Access

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

2.2.3 Shoreline Modifications

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

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

Shoreline Condition (feet / % of shoreline)	
Armored[1]	**Natural / Semi-Natural[2]**
5,737 (89%)	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
52	42	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, 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 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 CIA-3a-g in Appendix B). In the annexation area, O.O. Denny Park has its closest waterfront structure at 189 feet. There are 15 parcels in the Urban Conservancy environment, 11 of which abut the water. Nine lots are vacant (likely undeveloped street-ends or parks), including six waterfront lots (see Figure CIA-2 in Appendix B).

2.3.2 Parks and Open Space/Public Access

The 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 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]
3,489 (60%)	2,293 (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	16	23,206

2.4 Urban Mixed

Approximately 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 CIA-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 CIA-3a-g 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 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 CIA-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 CIA-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, Yarrow Creek, Denny Creek, and Champagne Creek, are known to support salmonids. 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

Year	# of Cases	Pier		Bulkhead Mod.	Upland Structure	Upland Park Mod.	Utilities	Permit Type			
		Extension/ Mod.	New/ Replacement					SDP	SCUP	Variance	Unknown
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, 24 lots in Residential - L are vacant, including 13 waterfront lots (see Figure CIA-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).

In the Residential – L environment, there are eight lots that have capacity for further subdivision to create additional building lots, with a total capacity of approximately 22 lots. In addition, in the Residential – L environment, approximately 128 waterfront lots (roughly 41% percent) are considered to have strong redevelopment potential (see Figures CIA-1a-f 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 45 feet.

For the original City limits, 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 CIA-4b-e 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 CIA-4a in Appendix B). The recently annexed area has multiple setback schemes assigned to specific areas (Figures CIA-4f-l), 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, 25-foot minimum
- 15% average parcel depth, 25-foot minimum and 80-foot maximum
- 15% average parcel depth, 15-foot minimum
- 15 feet minimum

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 feet.

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 37 feet. This reduction in the median setback results in a conversion of a maximum of 8.7 acres of space between the primary structure and the OHWM to a greater level of development.

In the Residential – M/H environment, approximately 22 waterfront lots (roughly 35% percent, including the vacant lots) and approximately 27 overall lots within the shoreline jurisdiction are considered to have strong redevelopment potential (see Figures CIA-1a-f 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 in the original City limits, including four waterfront lots (see Figure CIA-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.

In the annexation area, two of the three multifamily lots appear fully developed. The third lot contains several vacant, older, small structures and is for sale as of the preparation date of this document.

The existing median primary structure setback in the Residential – M/H environment is 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 CIA-5a-e in Appendix B). In the annexation area, the SMP proposes a residential setback of 45 feet. 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. This minor (0.3 feet) reduction in the average setback results in a conversion of a maximum of 0.80 acre of space between the primary structure and the OHWM to a greater level of development.

These conversion numbers overestimate both area and assumed corresponding function as primary structures are never as wide as the lot. The numbers also do 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 3.76 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 CIA-1a-e 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 CIA-5a-e 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 15 lots and 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 CIA-1a-e 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 for O.O. Denny Park), 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	204 (with approximately	32 (including three	16 (15 single-

Shoreline Environment	# of Lots with Pier(s)	# of Lots without Pier(s)	Probable New Piers
	11 existing joint piers)	waterfront street ends)	family and 1 joint-use)
Residential – M/H	48 (with approximately 3 existing joint piers)	12 (including one waterfront street end)	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
			22

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 50 percent of the pier support piles along with pier decking or sub-structure 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 effective[1] overwater cover would decline by at least 5.4 percent over a 20-year time period. Additional reductions in overwater cover (both actual and effective) may be realized as several parcels appear to have more than one

[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.

pier and several have boathouses. If those parcels propose major repair or replacement of their existing primary pier or a pier addition, the secondary over-water structures, and in some cases a nearshore boathouse, will be removed. Nearshore and off-shore boathouses may also be eliminated over time when new homes or a major home addition are constructed on the property, although that is not specifically factored into the calculations below. The light-blocking capacity of some boathouses could also be reduced if property owners replace solid walls or roof with transparent/translucent material.

Table 15. Summary of Pier Analysis

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
Total existing overwater coverage (square footage)	**500,708**
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
Total effective overwater coverage at buildout (square footage)	**473,671**
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
TOTAL CHANGE IN EFFECTIVE OVERWATER COVER AT BUILDOUT	**-27,037**
PERCENTAGE DECREASE IN OVERWATER COVER AT BUILDOUT	**-5.4%**

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 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 approximately 44 percent of the total shoreline area, is the most restrictive, but closely followed by the Urban Conservancy environment. 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 and south of NE Juanita Drive.
[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]
[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 CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
Automotive Service Center	X	X	X	X	X	X
Dry land boat storage	X	X	X	X	X	X
Industrial Uses						
Water-dependent uses	X	X	X	X	X	See adjacent upland environments
Water-related uses	X	X	X	X	X	X
Nonwater-oriented uses	X	X	X	X	X	X
Recreational Uses						
Water-dependent uses						
Marina[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 CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
Convalescent Center or Nursing Home	X	X	X	CU[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, 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.

The chart is coded according to the following legend. SD = Substantial Development CU = Conditional Use X = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	Natural	Urban Conservancy	Residential - L	Residential – M/H	Urban Mixed	Aquatic
Nonwater-oriented						
Arterials, Collectors, and neighborhood access streets	CU	SD[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 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 decided to use 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.

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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			
This segment is dominated by single-family homes and is almost entirely built out. Nearly the entire shoreline has been altered with a variety of armoring and alteration types, including piers, boatlifts, boathouses, and moorage covers. Approximately 93 percent of all residences already have a pier and the shoreline is approximately 88 percent armored.	**FUTURE DEVELOPMENT** in the Residential – L environment will consist of new development (on subdividable lots), completion of new residences on formerly developed "vacant" lots, and remodeled or expanded existing residences. Twenty-four vacant lots (just under 4% of all shoreline parcels) exist in shoreline jurisdiction, 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 128 (41 percent) of existing developed lots will likely redevelop. No change in uses is anticipated. **FUNCTIONS/PROCESSES IMPACTED**: As described in Section 3.2, new and re-development may be accompanied by: 1. *Impervious surface increases* 2. *Vegetation removal* 3. *Chemical contaminant increases* 4. *External lighting impacts* Additional impacts could occur with associated new pier development and shoreline modification; these are cumulatively discussed in Sections 3.5 and 3.6. These impacts may affect: 5. *Growth of aquatic vegetation* 6. *Juvenile salmon migration and behavior* 7. *Sediment movement* 8. *Chemical contamination* 9. *External lighting impacts on overwater structures* 10. *Shoreline complexity*	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 128 lots, the median residential setback would change from 45 feet to 37 feet. 1. *Impervious surface increases* 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 128 lot redevelopment potential mentioned above, approximately 8.7 acres of land area between existing primary structures and the water's edge would become impervious while 2.9 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. *Vegetation Removal* 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 significant trees within the shoreline setback	**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. Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline. **Non-Regulatory Restoration Actions** Although no specific restoration projects have been identified in the Residential – L environment, the City's Shoreline Restoration Plan does include goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. Examples of specific items include: • Encourage salmon friendly shoreline design during new construction or redevelopment • Offer incentives for voluntary removal of bulkheads, beach improvement, riparian revegetation • Encourage low impact development through regulations, incentives, education/training, and 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
	11. Wave attenuation	shall be mitigated at varying ratios depending on tree size and type. 3. *Chemical contaminant increases* 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. 4. *External lighting impacts* Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (**SMP 83.470**) (Note: items 5-11 addressed in Sections 3.5 and 3.6)	
Residential – M/H			
This segment is almost entirely built out and dominated by multi-family housing with some single-family uses spread throughout. Nearly the entire shoreline has been altered with a variety of armoring and alteration types, including piers, boatlifts, boathouses, and moorage covers. 81 percent of all lots already have a pier and the shoreline is approximately 89 percent armored.	**FUTURE DEVELOPMENT** in the Residential – M/H environment will likely be restricted to remodeled or expanded single- and multi-family residences since only four vacant lots (0.6% of total shoreline parcels) exist in shoreline jurisdiction. Based on residential development capacity and a ratio of land value to structure value, the City anticipates that approximately 22 (36 percent) of existing waterfront developed lots will likely redevelop. Although some change in use may occur from property to property, no net change in functional uses are anticipated throughout the Residential – M/H environment. **FUNCTIONS/PROCESSES IMPACTED:**	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 22 lots, the median setback would be reduced from 25.3 feet to 25.0 feet. See discussion above under Residential – L environment for expanded details as to how the SMP Provisions address the following impacts. *1. Impervious surface increases* No change in impervious surface	**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 the upcoming Programmatic (designed to be consistent with Kirkland's regulations) to review small residential pier projects or joint-use proposals involving no more than three residences. Projects which involve larger overwater structures would likely require a Biological Assessment for consultation with the federal Services. The programmatic Biological Evaluation for shoreline stabilization would likely apply to both single- and multi-family property within the City. As mentioned above, these agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts. Stormwater management, as described above under Residential – L environment, would likely minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline. **Non-Regulatory Restoration Actions** Although no specific restoration projects have been identified in the Residential – M/H environment, the City's Shoreline Restoration Plan does include goals and objectives with an emphasis on public education and involvement intended to promote voluntary shoreline enhancement and restoration on private land. See the Residential – L discussion above for examples.

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
	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: 1. *Impervious surface increases* 2. *Vegetation removal* 3. *Chemical contaminant increases* 4. *External lighting impacts* 5. *Growth of aquatic vegetation* 6. *Juvenile salmon migration and behavior* 7. *Sediment movement* 8. *Chemical contamination* 9. *External lighting impacts on overwater structures* 10. *Shoreline complexity* 11. *Wave attenuation*	requirements are proposed under the new SMP. Based on the redevelopment potential mentioned above, approximately 0.80acres 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. *Vegetation Removal* 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 varying ratios depending on tree size and type. 3. *Chemical contaminant increases* Shoreline setback reduction alternatives (**SMP 83.380**) include landscape best management practices and may limit lawn area. 4. *External lighting impacts* Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (**SMP 83.470**). 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)**). (Note: items 5-11 addressed in Sections 3.5 and 3.6)	
Urban Conservancy			
This segment contains land areas in shoreline jurisdiction generally dominated by public parks and open spaces. These areas include: the western portion of Juanita Beach Park, Kiwanis Park, Waverly Park, Lake Ave West Street-end Park, Street-end Park, David Brink Park, Settler's	**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 improvements, including implementation of the Juanita Beach Park Master Plan (which includes	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 assess overall impacts to ecological function as they relate the items listed below. Structure setbacks are regulated under **SMP 83.180** and	**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

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
Landing, Marsh Park, Houghton Beach Park, and O.O. Denny Park.	stream and wetland restoration), repairs to overwater structures (including conversions to grated decking), and enhancements to armored shorelines. No change in uses is anticipated. **FUNCTIONS/PROCESSES IMPACTED:** The anticipated alterations to parks are expected to alter, in most cases beneficially, the following upland functions. 1. *Impervious surface* 2. *Vegetation/habitat* 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: 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*	**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. Several of the parks have streams and wetlands, which have additional protections under **SMP 83.500** and **SMP 83.510**. 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. (Note: items 3-9 addressed in Sections 3.5 and 3.6)	also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts. Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline. **Non-Regulatory Restoration Actions** The *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* (WRIA 8 Steering Committee 2005) includes potential restoration of the mouth of Juanita Creek through the removal of bank armoring and returning the mouth to a more natural outlet as Project C296 on the "Lake Washington - Tier I - Initial Habitat Project List." It is identified as a low-priority project, however, because of its limited benefit to chinook salmon and perceived low feasibility. 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. 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. 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). 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. 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. 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. 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.

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			
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.	**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. **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: 1. *Impervious surface alterations* 2. *Vegetation alteration* 3. *Chemical contaminant alterations* 4. *External lighting impacts* 5. *Growth of aquatic vegetation* 6. *Juvenile salmon migration and behavior* 7. *Sediment movement* 8. *Chemical contamination* 9. *External lighting impacts on overwater structures* 10. *Shoreline complexity* 11. *Wave attenuation*	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. See discussion above under Residential – L environment for expanded details as to how the SMP Provisions address the following impacts. 1. *Impervious surface alterations* 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. *Vegetation alteration* 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. 3. *Chemical contaminant increases*	**Other Regulatory Programs:** Any in- or over-water proposals, primarily piers and shoreline reconstruction, would require review not only by the City of Kirkland, but also by the WDFW, the U.S. Army Corps of Engineers (Corps), and/or Ecology. Each of these agencies is charged with regulating and/or protecting streams, lakes, and wetlands, and would impose certain design or mitigation requirements on applicants. Due to Endangered Species Act consultation requirements with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, the Corps has developed recommendations to minimize project impacts. These include Regional General Permit 3 (RGP-3) for overwater structures and a Programmatic Biological Evaluation for shoreline stabilization. WDFW also follows similar design standards as the Corps and the City of Kirkland has included many of these standards within the proposed SMP. These agencies would also impose certain design and mitigation requirements on a proposed project to minimize adverse impacts. Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline. **Non-Regulatory Restoration Actions** 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. 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. 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.

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
		Shoreline setback reduction alternatives (**SMP 83.380**) include landscape best management practices and may limit lawn area. 4. *External lighting impacts* Lighting shall be controlled to minimize adverse effects on fish and wildlife and their habitats (**SMP 83.470**). 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)**). (Note: items 5-11 addressed in Sections 3.5 and 3.6)	
Natural			
The shoreline within the Natural environment is entirely park/open space with no existing development, containing only 1 percent impervious surface. It is comprised entirely of the Yarrow Bay wetlands and Juanita Bay Park and Forbes Creek wetland corridors.	**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. **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. 1. *Vegetation/habitat*	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**. 1. *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 development.	**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 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. Outside of the immediate shoreline zone, short- and long-term stormwater management per the latest Ecology Stormwater Manual would minimize/eliminate construction-related stormwater runoff impacts and may slowly improve the quality of any waters reaching the shoreline. **Non-Regulatory Restoration Actions** 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). 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. Other enhancements to the shoreline parks are possible through Capital Improvement Program funds,

Existing Conditions	Likely Development / Functions or Processes Potentially Impacted	Effect of SMP Provisions	Effect of Other Regulatory Programs and Non-Regulatory Restoration Actions
			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. 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.

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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

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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

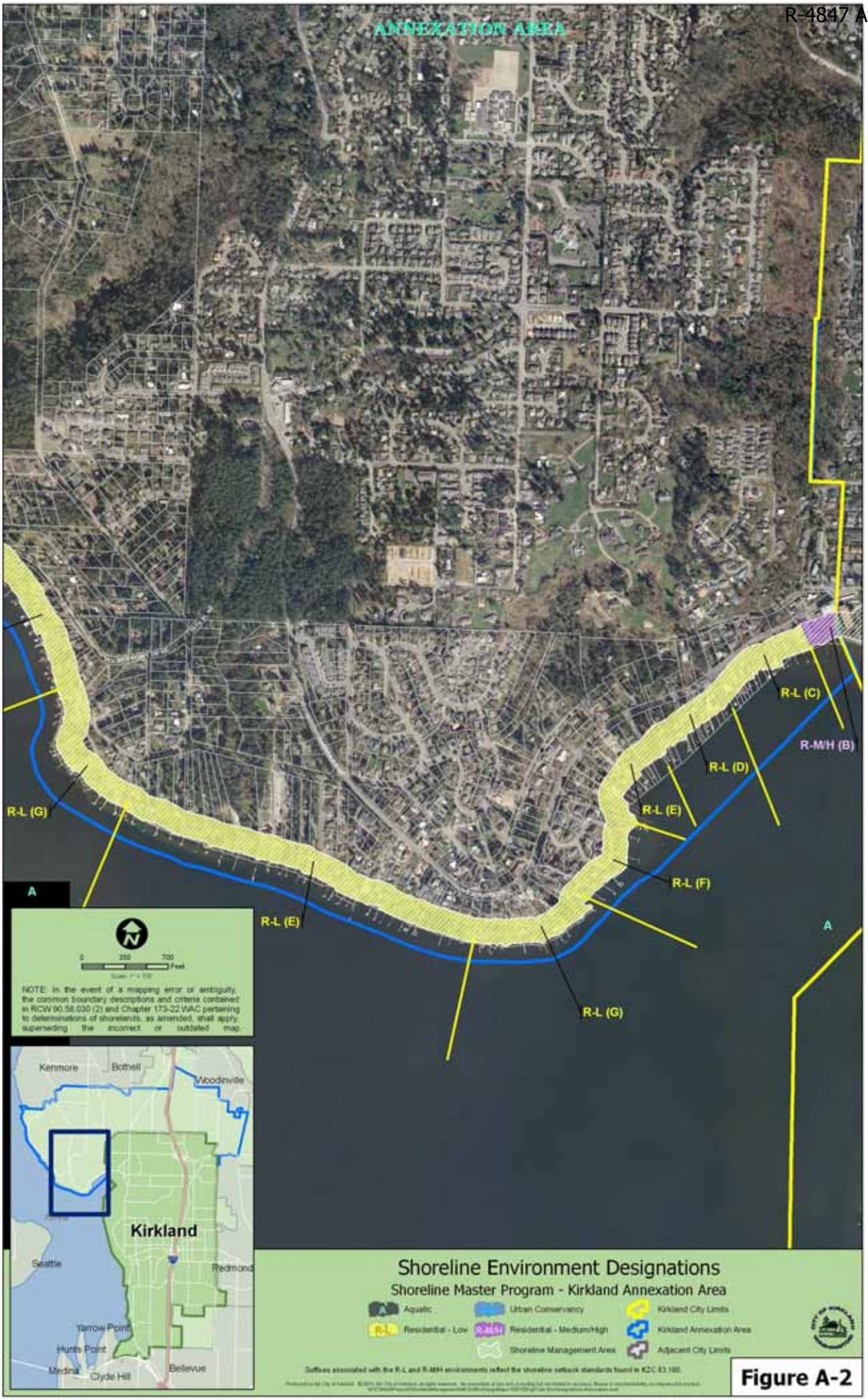
OHWM..... ordinary high water mark

SMP..... Shoreline Master Program

WDFW..... Washington Department of Fish and Wildlife

APPENDIX A – ENVIRONMENT DESIGNATION MAPS

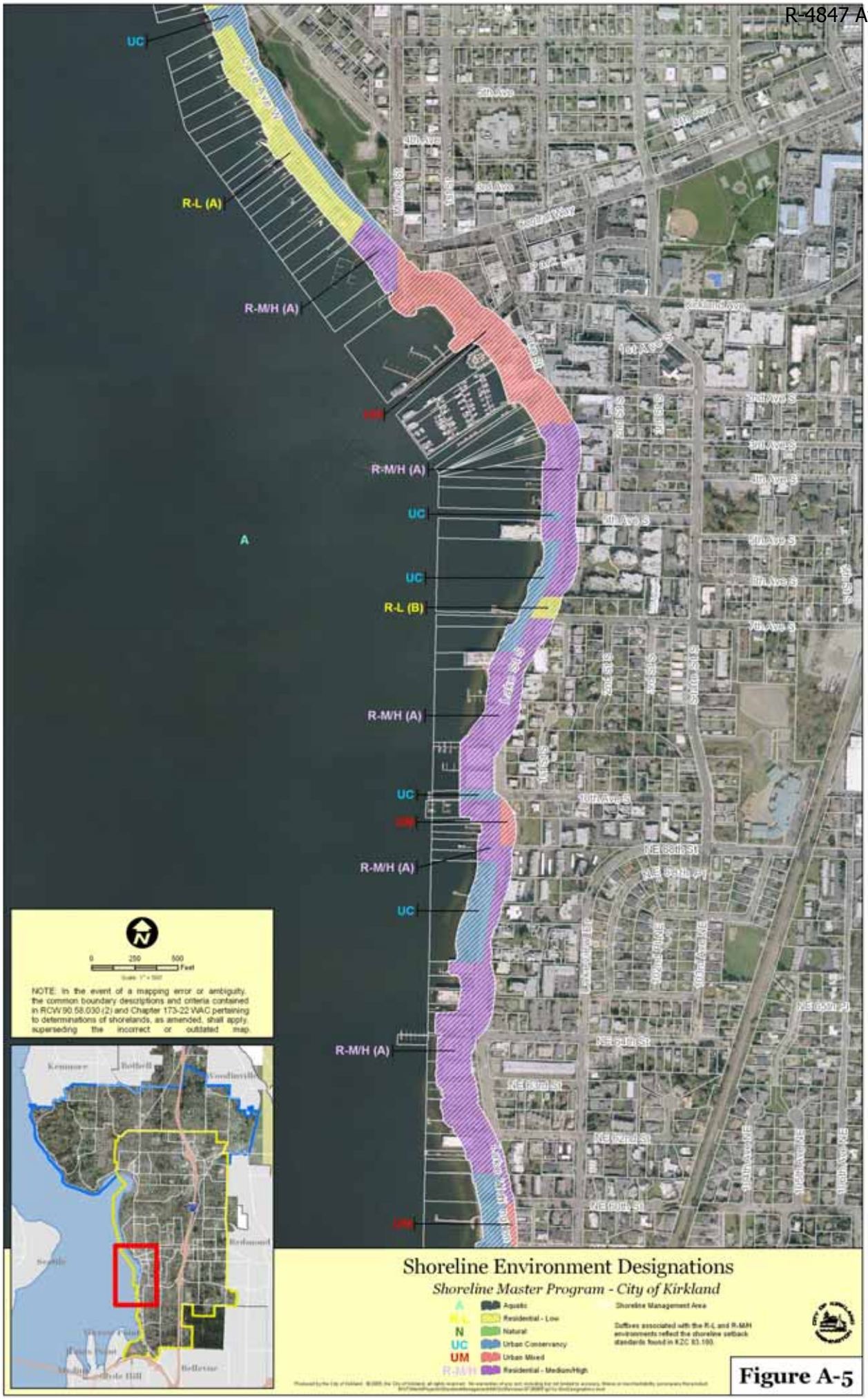

Kenmore
R-L (E)
R-L (J)
R-L (I)
A
UC
R-L (H)
R-L (E)
A
R-L (G)
0 350 700 Feet
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.
Kenmore
Bothell
Woodinville
KING
Kirkland
Seattle
Redmond
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Shoreline Environment Designations
Shoreline Master Program - Kirkland Annexation Area
Aquatic
Urban Conservancy
Kirkland City Limits
R-L
Residential - Low
R-M/H
Residential - Medium/High
Kirkland Annexation Area
Shoreline Management Area
Adjacent City Limits
Suffixes associated with the R-L and R-M/H environments reflect the shoreline setback standards found in KZC 83.160.
Figure A-1

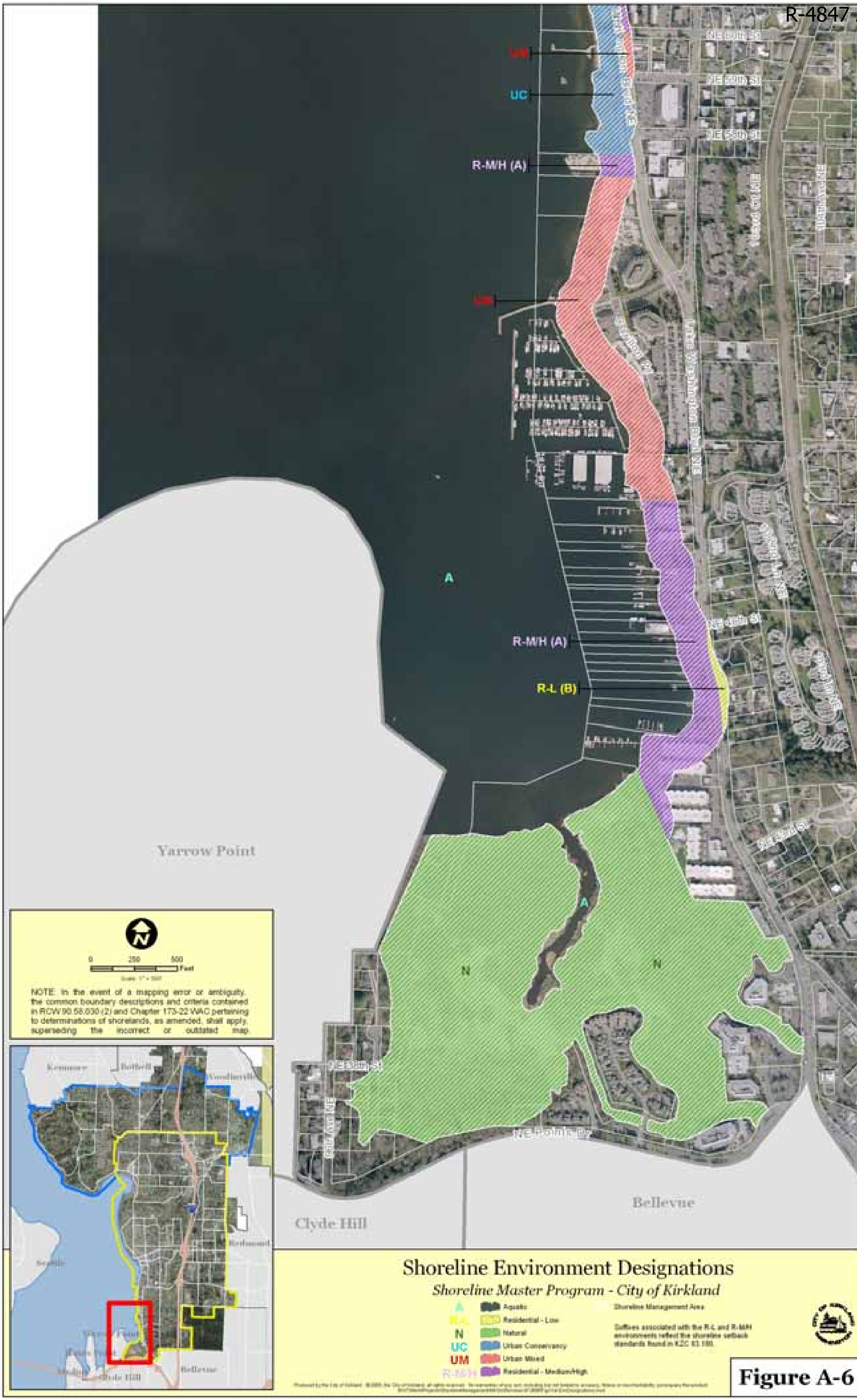

ANNEXATION AREA
R-L (C)
R-M/H (B)
R-L (D)
R-L (E)
R-L (F)
R-L (G)
R-L (E)
R-L (G)
A
A
0 350 700 Feet
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.
Kenmore
Bothell
Woodinville
Kirkland
Seattle
Redmond
Yarrow Point
Hunts Point
Medina
Clyde Hill
Bellevue
Shoreline Environment Designations
Shoreline Master Program - Kirkland Annexation Area
Aquatic
Urban Conservancy
Kirkland City Limits
R-L Residential - Low
R-M/H Residential - Medium/High
Kirkland Annexation Area
Shoreline Management Area
Adjacent City Limits
Suffixes associated with the R-L and R-M/H environments reflect the shoreline setback standards found in KZC 83.160.
Figure A-2


NE Juanita Dr
R-M/H (B)
R-M/H (A)
UC
UM
N
R-L (B)
Lake Washington
0
250
500
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 Environment Designations
Shoreline Master Program - City of Kirkland
A Aquatic
R-L Residential - Low
N Natural
UC Urban Conservancy
UM Urban Mixed
R-M/H Residential - Medium/High
Shoreline Management Area
Buffers associated with the R-L and R-M/H environments reflect the shoreline setback standards found in KZC 83.180.
Figure A-3

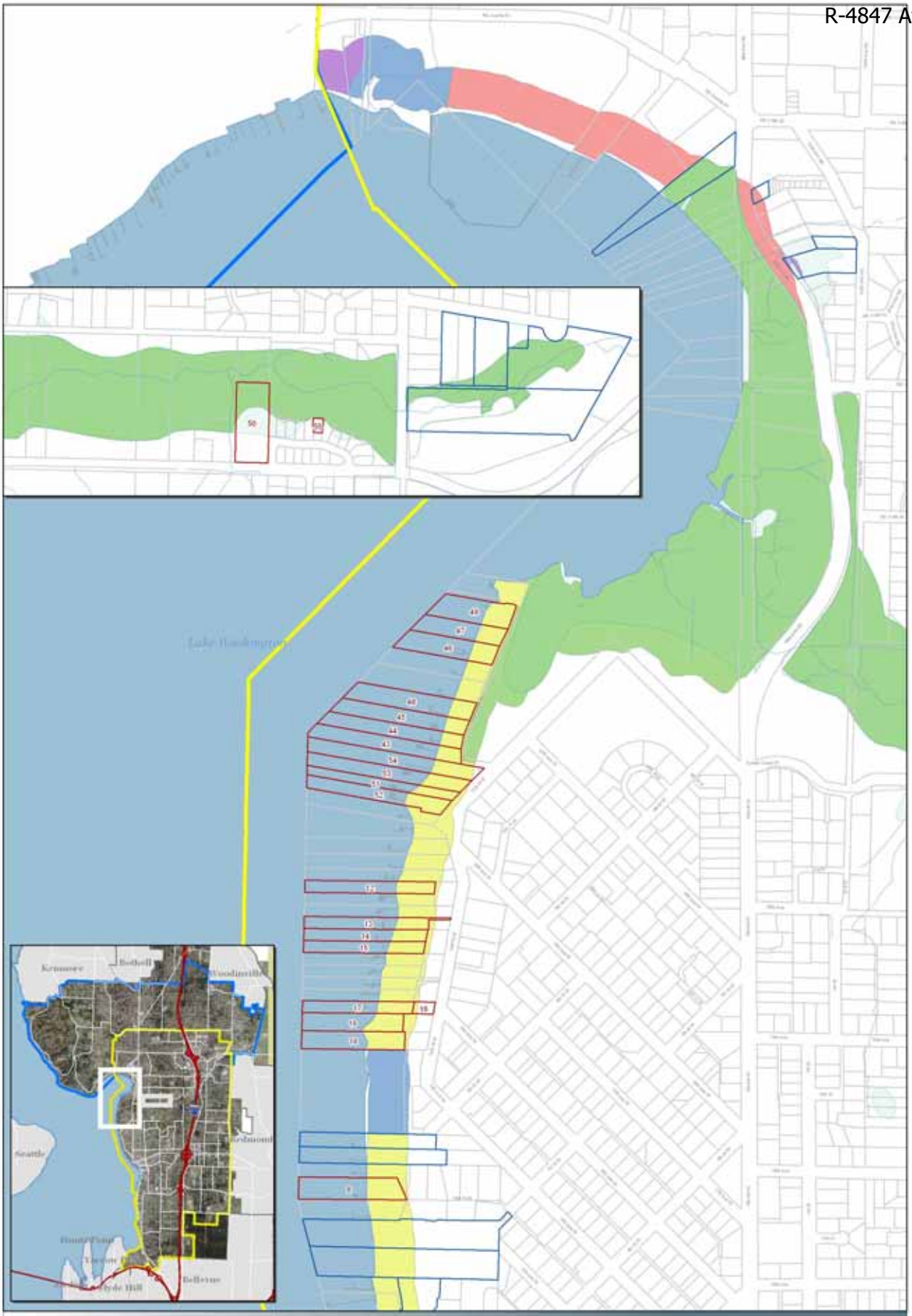

R-L (B)
UC
R-L (B)
UC
R-L (B)
A
UC
R-L (A)
R-M/H (A)
UM
0 250 500 Feet
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.
Shoreline Environment Designations
Shoreline Master Program - City of Kirkland
A Aquatic
R-L Residential - Low
N Natural
UC Urban Conservancy
UM Urban Mixed
R-M/H Residential - Medium/High
Shoreline Management Area
Suffixes associated with the R-L and R-M/H environments reflect the shoreline setback standards found in KZC 83.180.

Figure A-4


UC
R-L (A)
R-M/H (A)
UM
R-M/H (A)
UC
A
UC
R-L (B)
R-M/H (A)
UC
UM
R-M/H (A)
UC
R-M/H (A)
UM
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.
0 250 500 Feet
Shoreline Environment Designations
Shoreline Master Program - City of Kirkland
A Aquatic
R-L Residential - Low
N Natural
UC Urban Conservancy
UM Urban Mixed
R-M/H Residential - Medium/High
Shoreline Management Area
Suffixes associated with the R-L and R-M/H environments reflect the shoreline setback standards found in KZC 83.180.
Figure A-5


UM
UC
R-M/H (A)
UM
A
R-M/H (A)
R-L (B)
Yarrow Point
A
N
N
NE Points Dr
Clyde Hill
Bellevue
0 250 500 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.
Kenmore
Bothell
Woodinville
Redmond
Seattle
Bellevue
Clyde Hill
Shoreline Environment Designations
Shoreline Master Program - City of Kirkland
A Aquatic
R-L Residential - Low
N Natural
UC Urban Conservancy
UM Urban Mixed
R-M/H Residential - Medium/High
Shoreline Management Area
Suffixes associated with the R-L and R-M/H environments reflect the shoreline setback standards found in KZC 83.180.
Figure A-6

APPENDIX B – FIGURES


Kirkland Shoreline - Redevelopable Parcels
Shoreline Master Program - City of Kirkland
Redevelopable Parcels*
Stream in Pipe
Open Stream
Wetlands
*Based on 2006 Assessor's Data
Natural
Residential - Low
Urban Conservancy
Urban Mixed
0
225
450
900
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.
CIA - 1a

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.

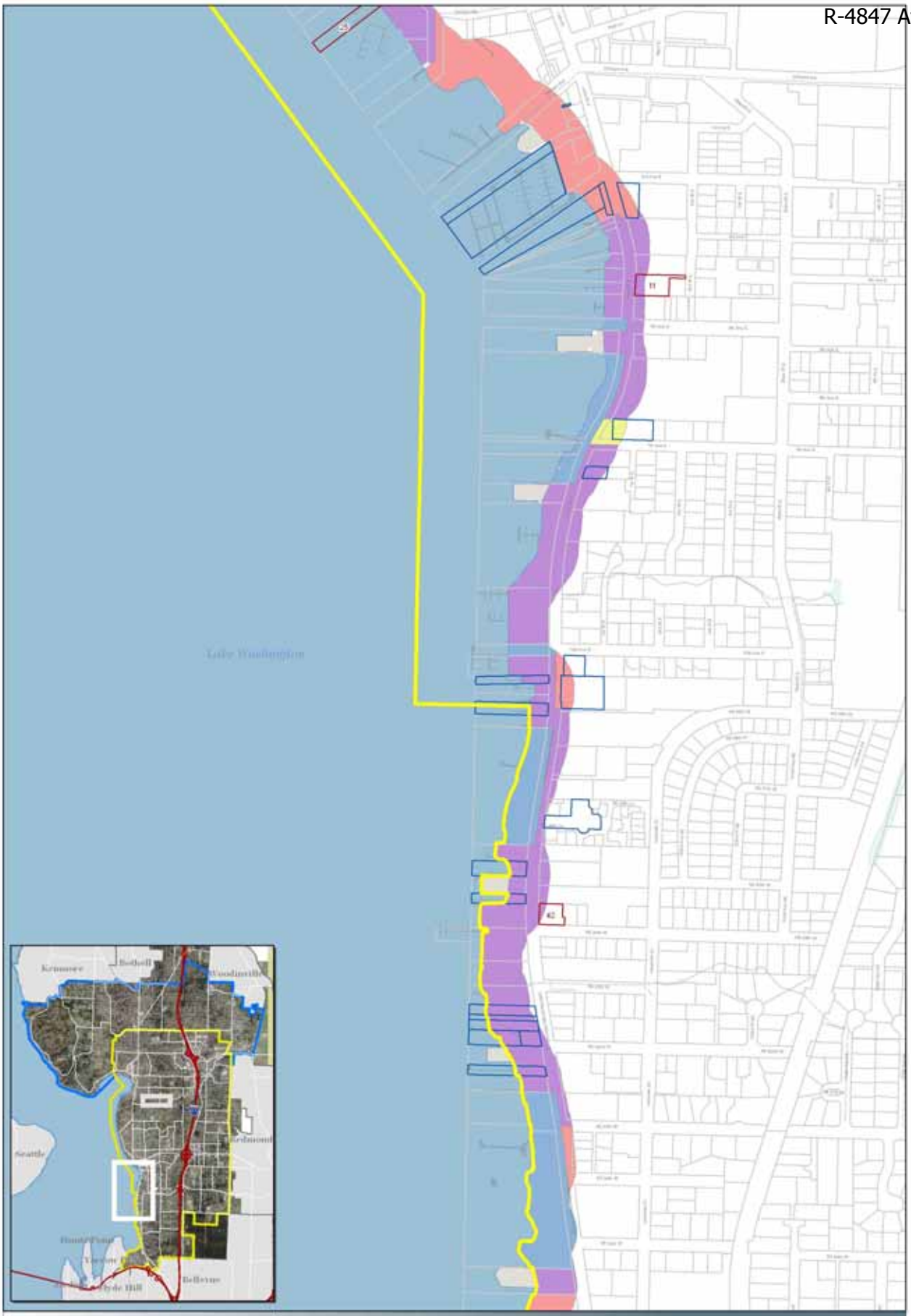
Kirkland Shoreline - Redevelopable Parcels

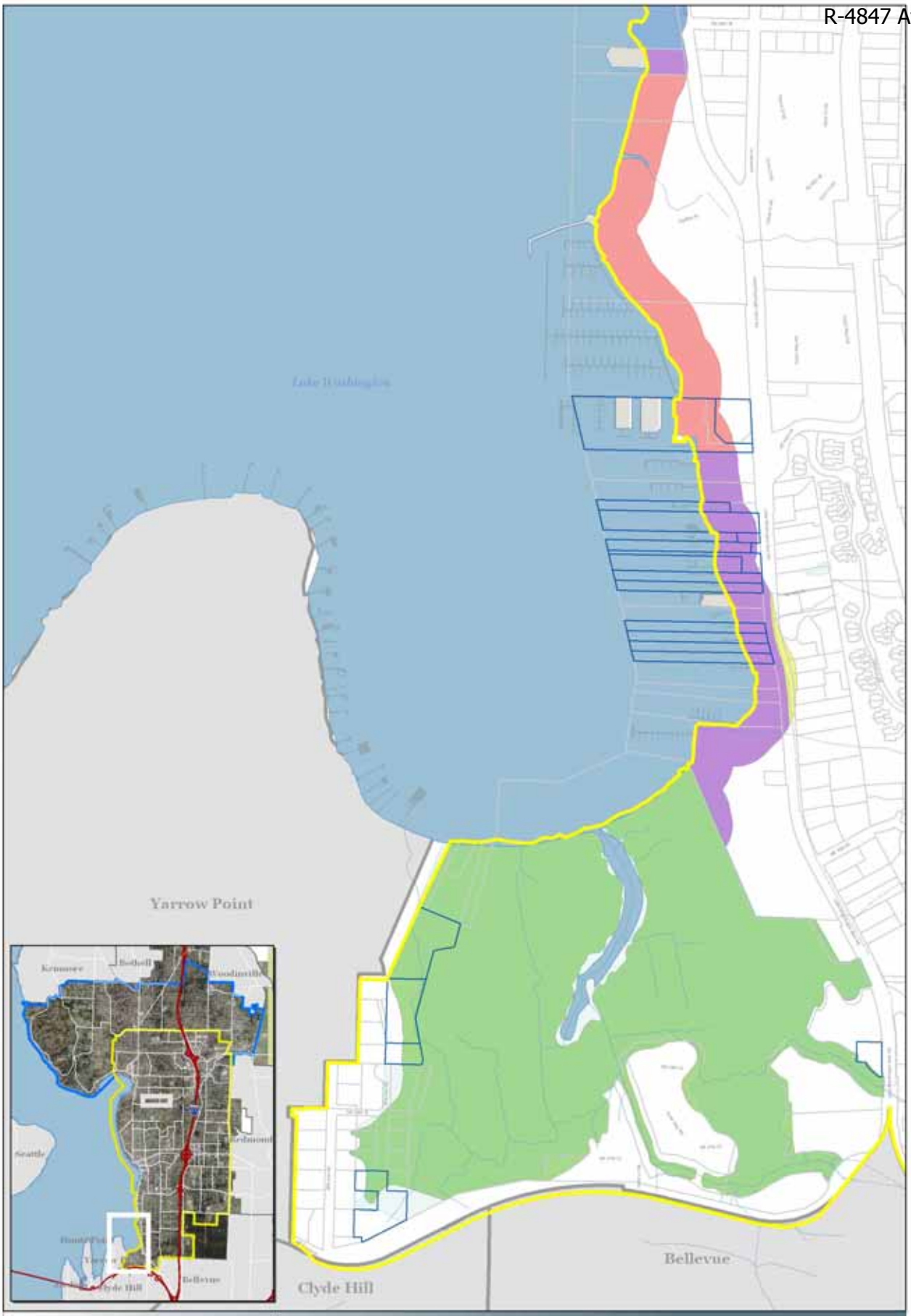
Shoreline Master Program - City of Kirkland

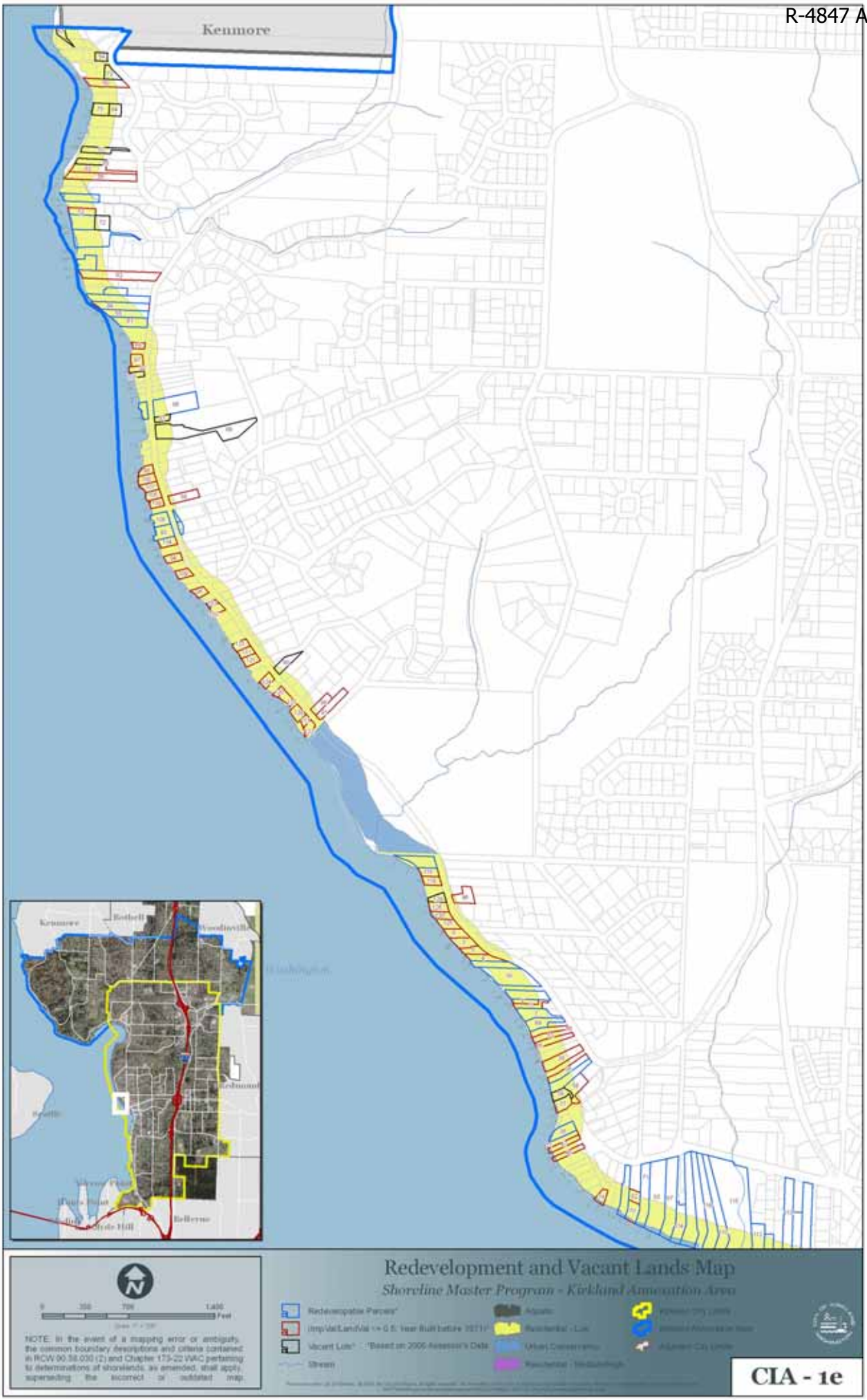
Redevelopable Parcels*
Stream in Pipe
Open Stream
Wetlands
*Based on 2006 Assessor's Data

Natural
Residential - Low
Urban Conservancy
Urban Mixed

CIA - 1b


Lake Washington
Kenmore
Bothell
Woodinville
Seattle
Mercer Island
Bellevue
Kirkland Shoreline - Redevelopable Parcels
Shoreline Master Program - City of Kirkland
Redevelopable Parcels*
Stream in Pipe
Open Stream
Wetlands
*Based on 2006 Assessor's Data
Natural
Residential - Low
Urban Conservancy
Urban Mixed
0
225
450
900
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.
CIA - 1c

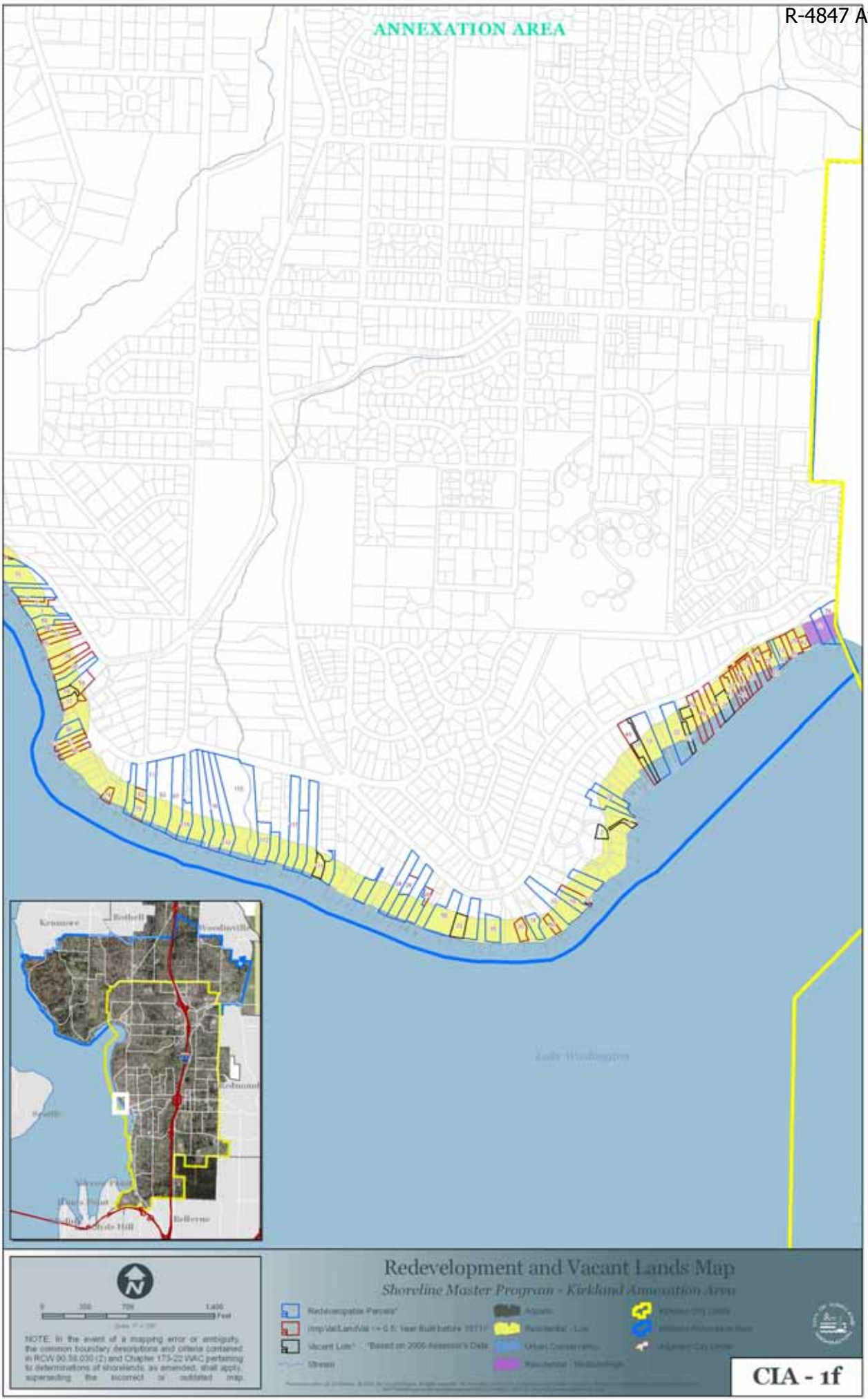

Lake Washington
Yarrow Point
Clyde Hill
Bellevue
Kirkland Shoreline - Redevelopable Parcels
Shoreline Master Program - City of Kirkland
Redevelopable Parcels*
Stream in Pipe
Open Stream
Wetlands
*Based on 2006 Assessor's Data
Natural
Residential - Low
Urban Conservancy
Urban Mixed
0 225 450 900 Feet
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.
CIA - 1d

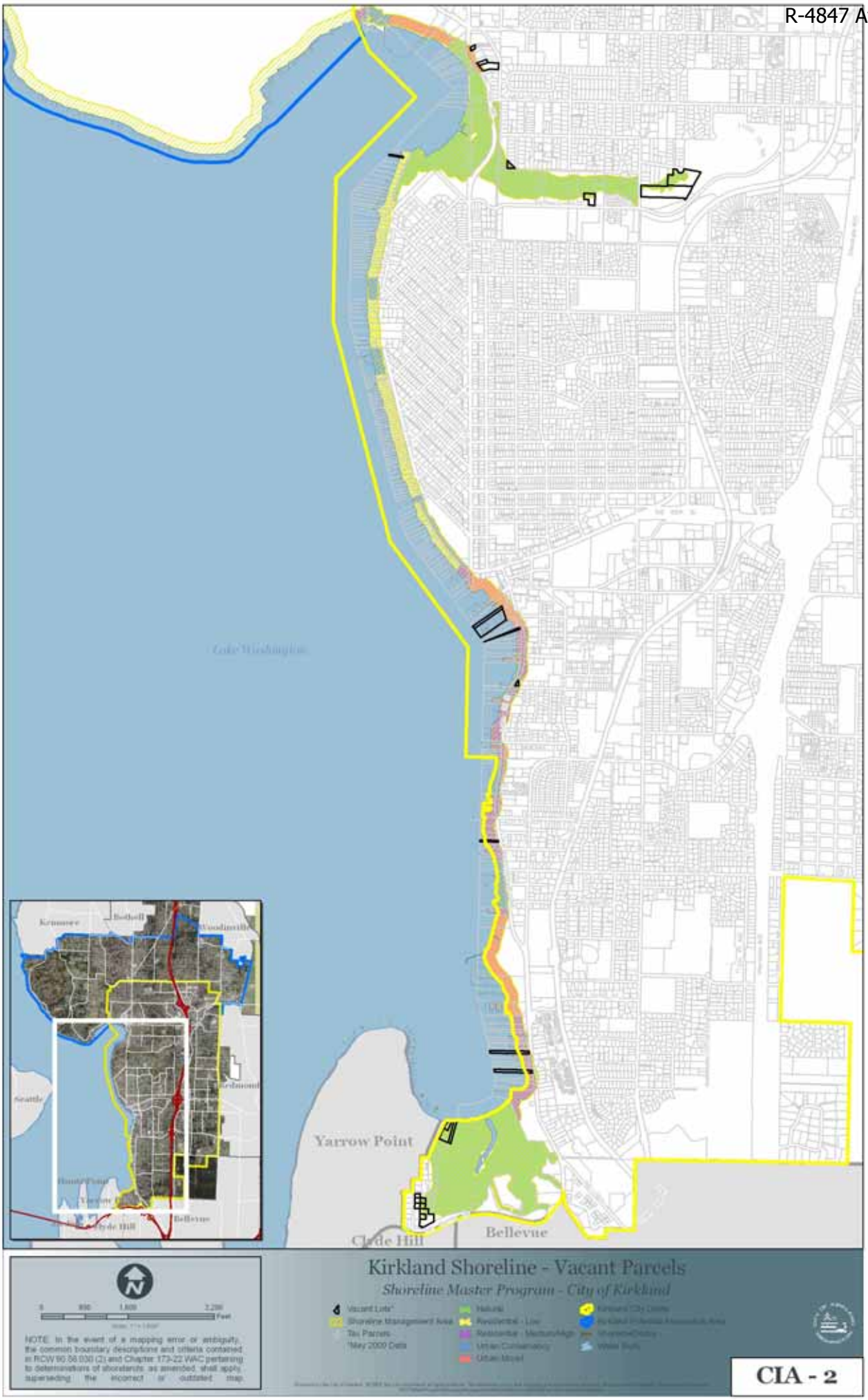


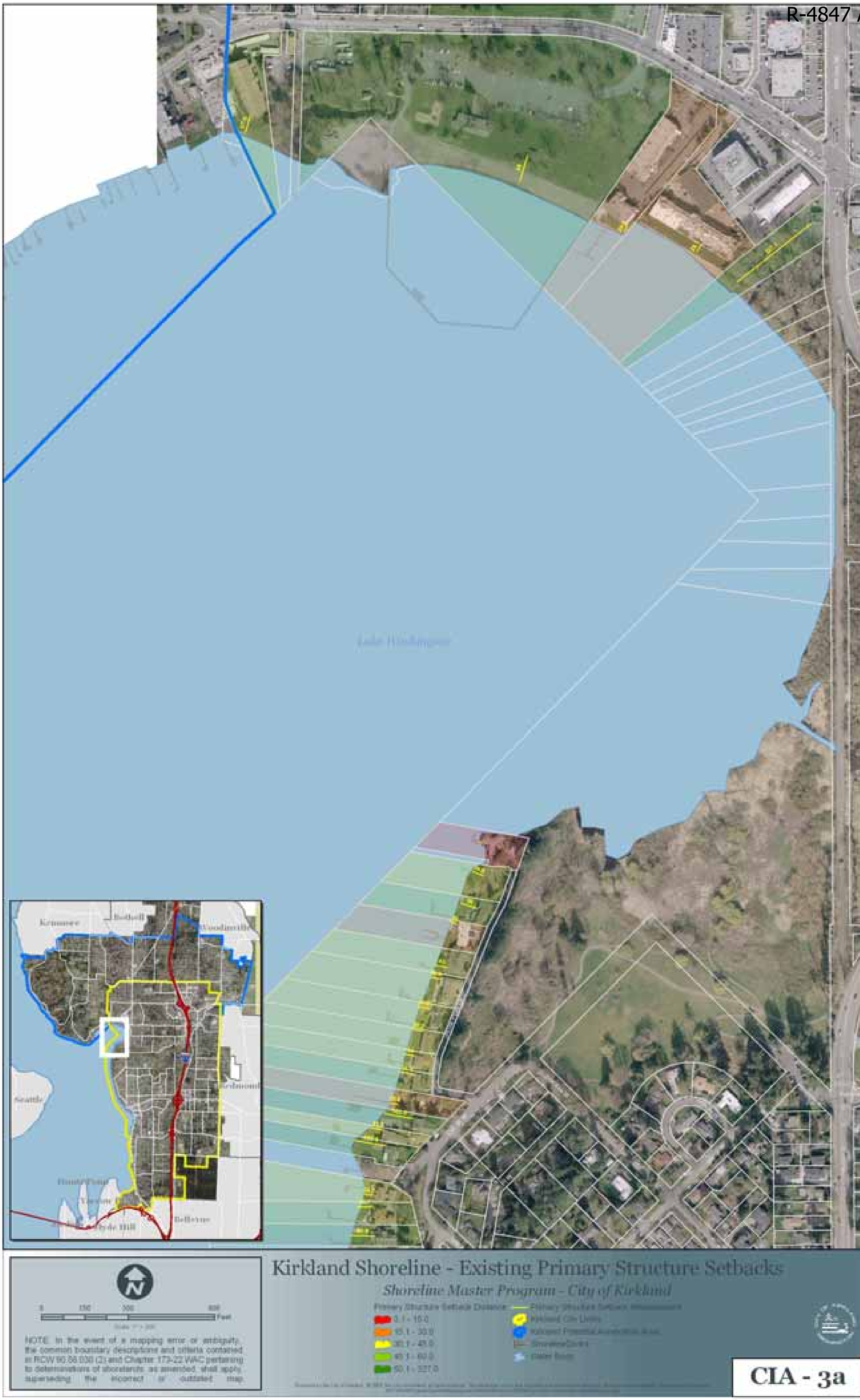
Redevelopment and Vacant Lands Map

Shoreline Master Program - Kirkland Annexation Area

CIA - 1e


ANNEXATION AREA
Redevelopable Parcels*
Vacant Lots*
*Based on 2006 Assessor's Data
Stream
Aquatic
Residential - Low
Urban Conservancy
Residential - Medium
Kirkland City Limits
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.
Redevelopment and Vacant Lands Map
Shoreline Master Program - Kirkland Annexation Area
CIA - 1f


Lake Washington
Yarrow Point
Clyde Hill
Bellevue
Kenmore
Bothell
Woodinville
Seattle
Mercer Island
Medina
Hunts Point
Yarrow Point
Clyde Hill
Bellevue
0
800
1,600
2,200
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.
Kirkland Shoreline - Vacant Parcels
Shoreline Master Program - City of Kirkland
Vacant Lots*
Shoreline Management Area
Tax Parcels
*May 2009 Data
Natural
Residential - Low
Residential - Medium/High
Urban Conservancy
Urban Mixed
Kirkland City Limits
Kirkland Potential Annexation Area
Shoreline Overlay
Water Body
CIA - 2


Kenmore
Bothell
Seattle
Bellevue
Kirkland Shoreline - Existing Primary Structure Setbacks
Shoreline Master Program - City of Kirkland
0
150
300
600
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.
Primary Structure Setback Distance
0.1 - 15.0
15.1 - 30.0
30.1 - 45.0
45.1 - 60.0
60.1 - 227.0
Primary Structure Setback Measurement
Kirkland City Limits
Kirkland Potential Annexation Area
Water Body
CIA - 3a

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.

Kirkland Shoreline - Existing Primary Structure Setbacks

Shoreline Master Program - City of Kirkland

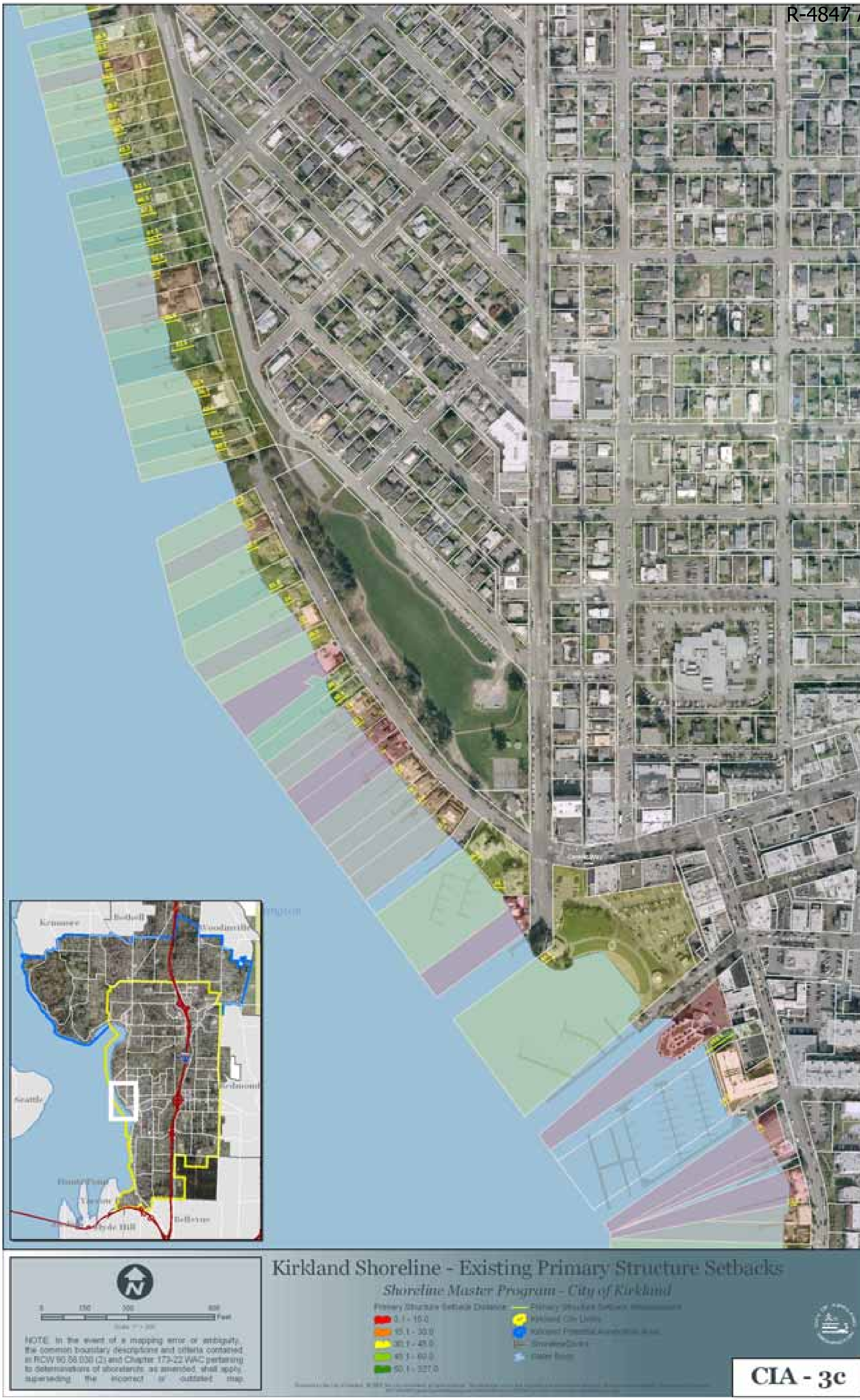
Primary Structure Setback Distance

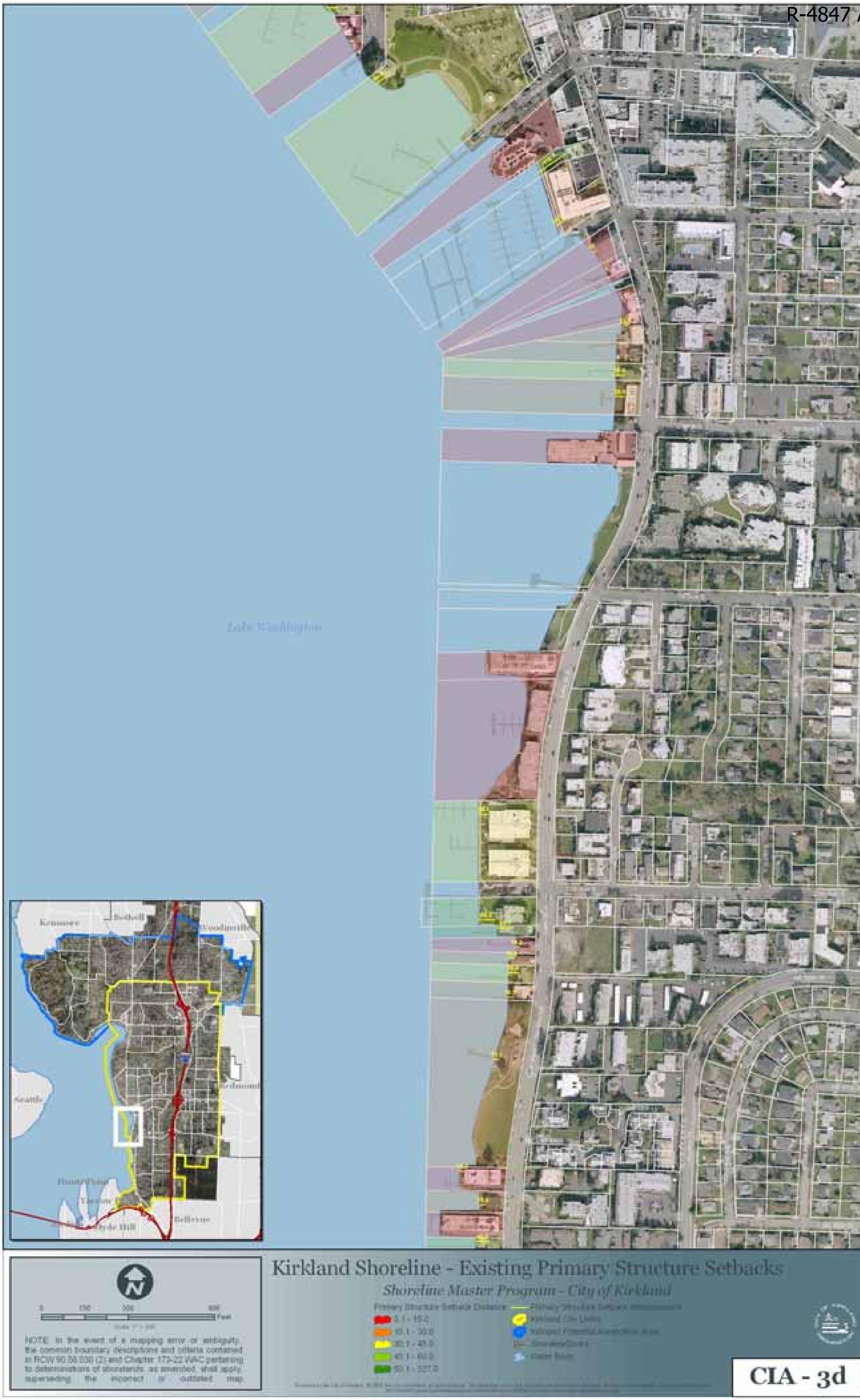
- 0.1 - 15.0
- 15.1 - 30.0
- 30.1 - 45.0
- 45.1 - 60.0
- 60.1 - 327.0

Primary Structure Setback Measurement

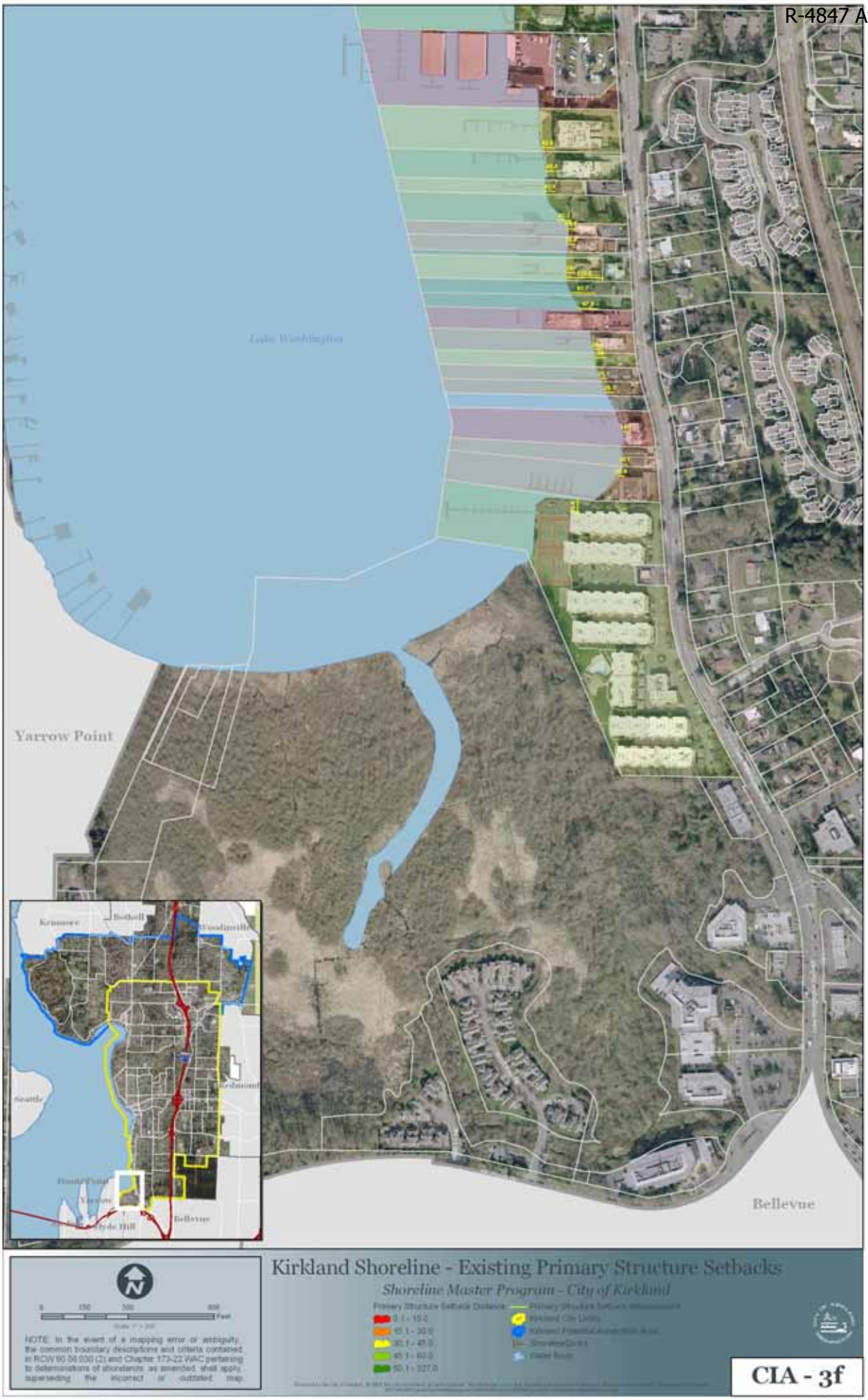
- Kirkland City Limits
- Kirkland Potential Annexation Area
- Shoreline Centers
- Water Body

CIA - 3b

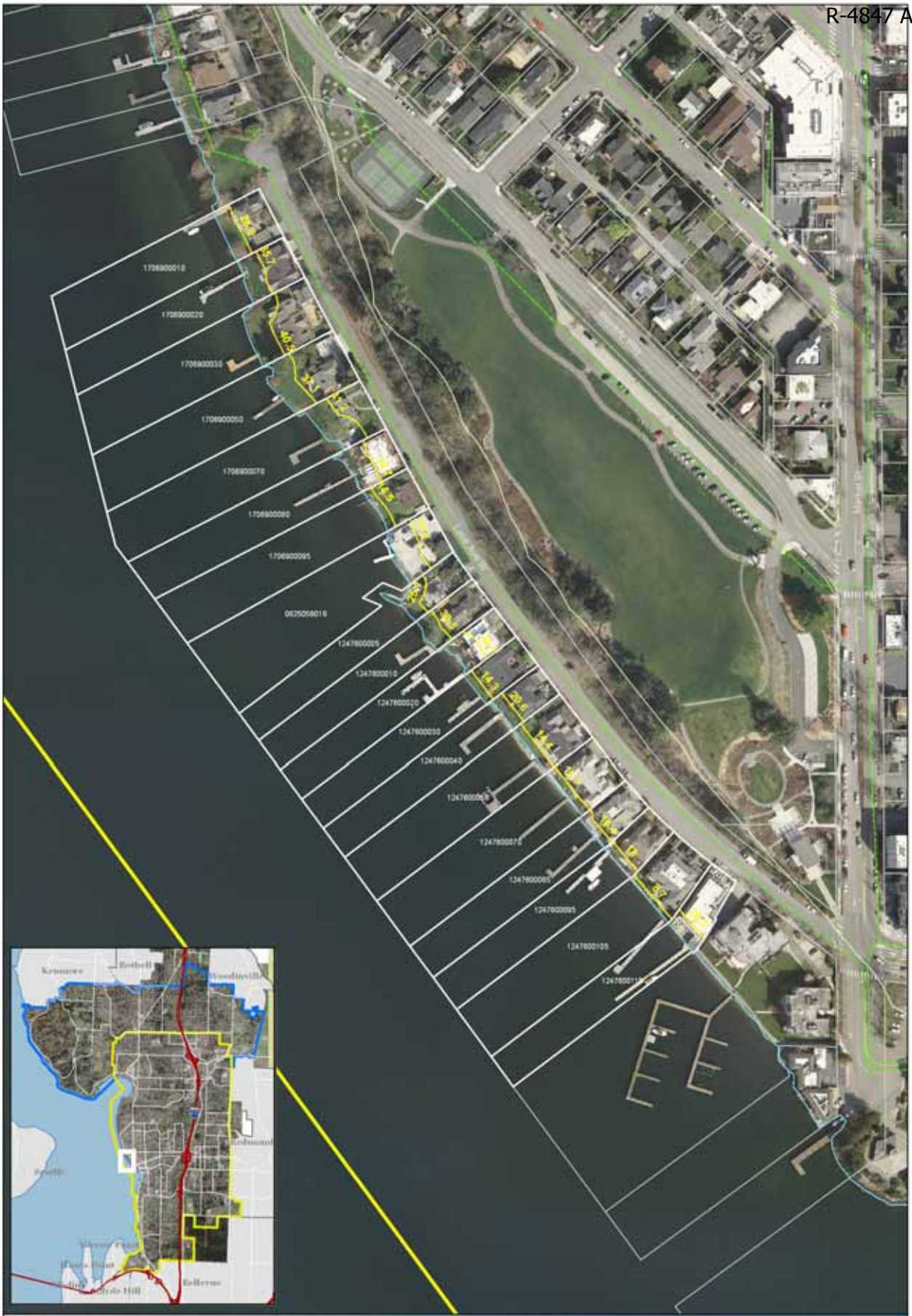

Kirkland Shoreline - Existing Primary Structure Setbacks
Shoreline Master Program - City of Kirkland
Primary Structure Setback Distance
Primary Structure Setback Measurement
Kirkland City Limits
Water Body
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria 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.
Kenmore
Bothell
Woodinville
Seattle
Redmond
Bellevue
CIA - 3c


Lake Washington
Kenmore
Bothell
Woodinville
Seattle
Redmond
Hunts Point
Clyde Hill
Bellevue
0
150
300
600
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.
Kirkland Shoreline - Existing Primary Structure Setbacks
Shoreline Master Program - City of Kirkland
Primary Structure Setback Distance
0.1 - 15.0
15.1 - 30.0
30.1 - 45.0
45.1 - 60.0
60.1 - 327.0
Primary Structure Setback Measurement
Kirkland City Limits
Kirkland Potential Annexation Area
Water Body
CIA - 3d


Lake Washington
Kenmore
Bothell
Woodinville
Redmond
Seattle
Mercer Island
Bellevue
Clyde Hill
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.
Kirkland Shoreline - Existing Primary Structure Setbacks
Shoreline Master Program - City of Kirkland
Primary Structure Setback Distance
0.1 - 15.0
15.1 - 30.0
30.1 - 45.0
45.1 - 60.0
50.1 - 327.0
Kirkland City Limits
Shoreline Overlay
Water Body
CIA - 3e


Lake Washington
Yarrow Point
Bellevue
Kenmore
Bothell
Woodinville
Seattle
Bellevue
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.
Kirkland Shoreline - Existing Primary Structure Setbacks
Shoreline Master Program - City of Kirkland
CIA - 3f


Kenmore
ANNEXATION AREA
Kenmore
Bothell
Woodinville
Redmond
Seattle
Mercer Island
Bellevue
Clyde Hill
N
0
550
1,100
2,200
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.
Existing Primary Structure Map
Shoreline Master Program - Kirkland Annexation Area
Structure Setback Distance*
< 30 feet
30 - 60 feet
60 - 110 feet
110 - 200 feet
> 200 feet
Shoreline Management Area
King County Setback (100 Feet)
Kirkland City Limits
CIA - 3g



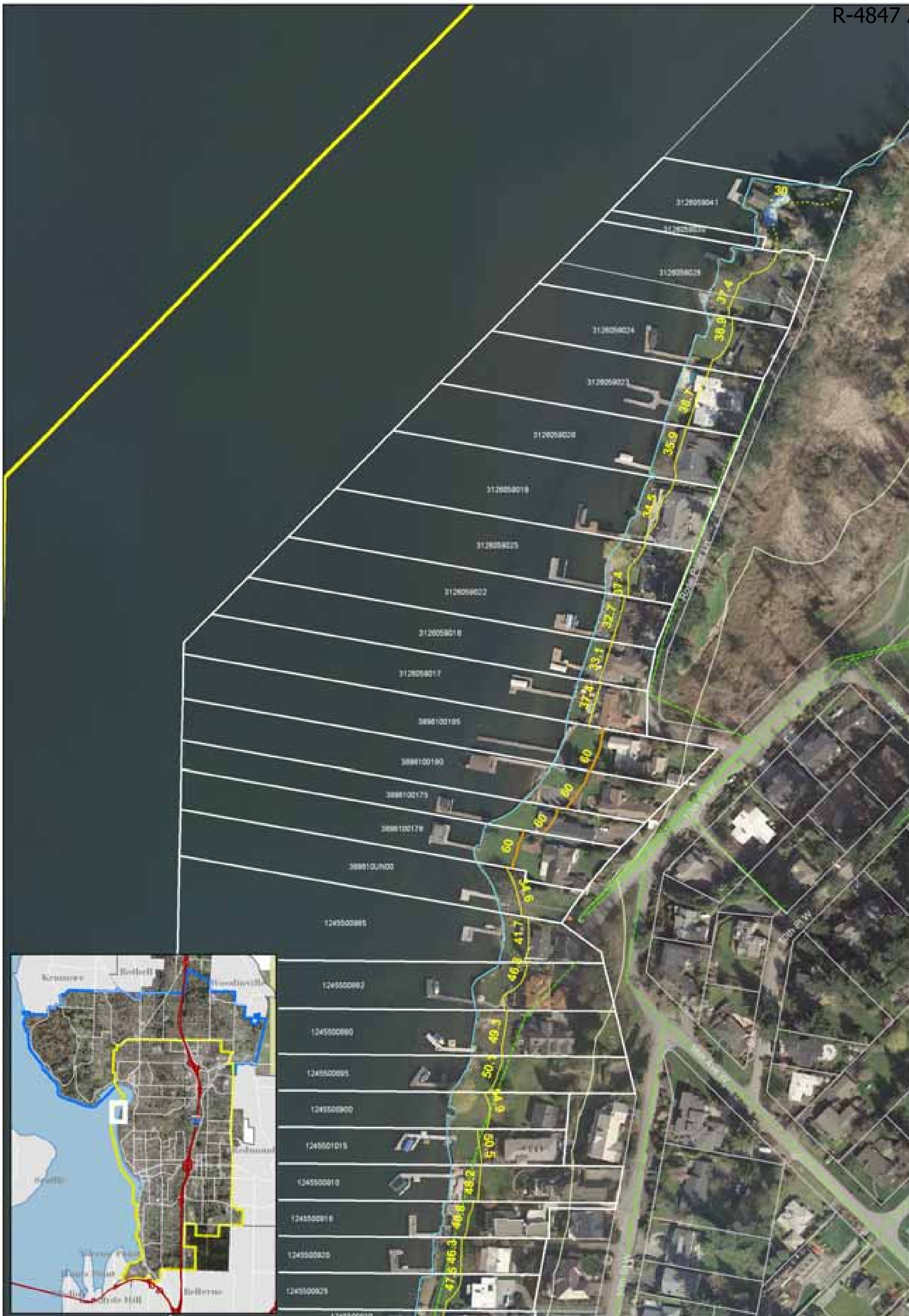
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands as amended, shall apply, superseding the incorrect or outdated map.

Residential R-L for Lake Avenue West
(Average Setback w/ 15' Minimum)

Shoreline Master Program - City of Kirkland

Average Primary Structure Setback
Shoreline Management Area
Sanitary Sewer Pipe
Ordinary High Water Mark
Kirkland City Limits

CIA - 4a

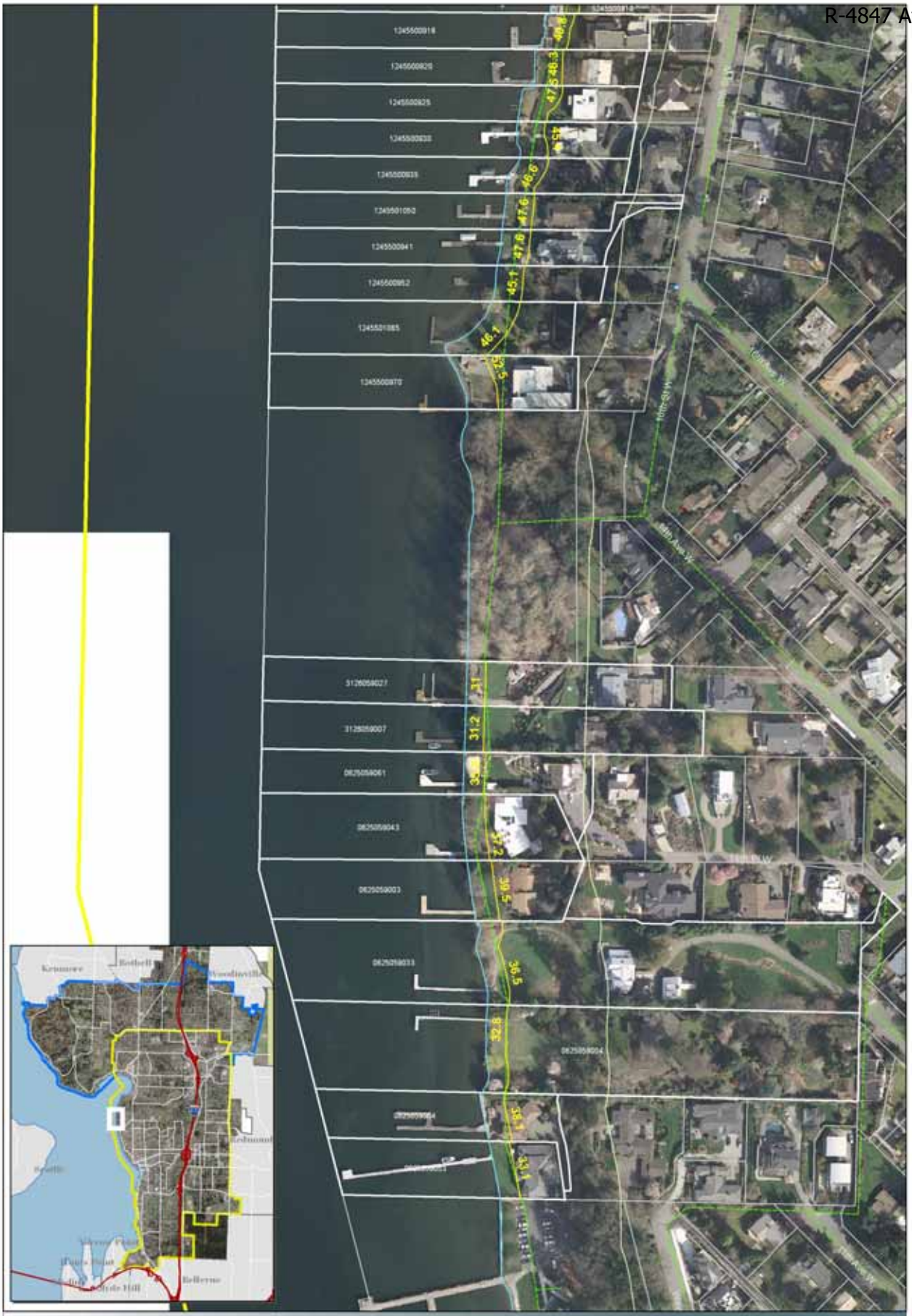


Residential R-L for 30% Average Parcel Depth
w/ 30' Minimum and 60' Maximum

Shoreline Master Program - City of Kirkland

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.

CIA - 4b

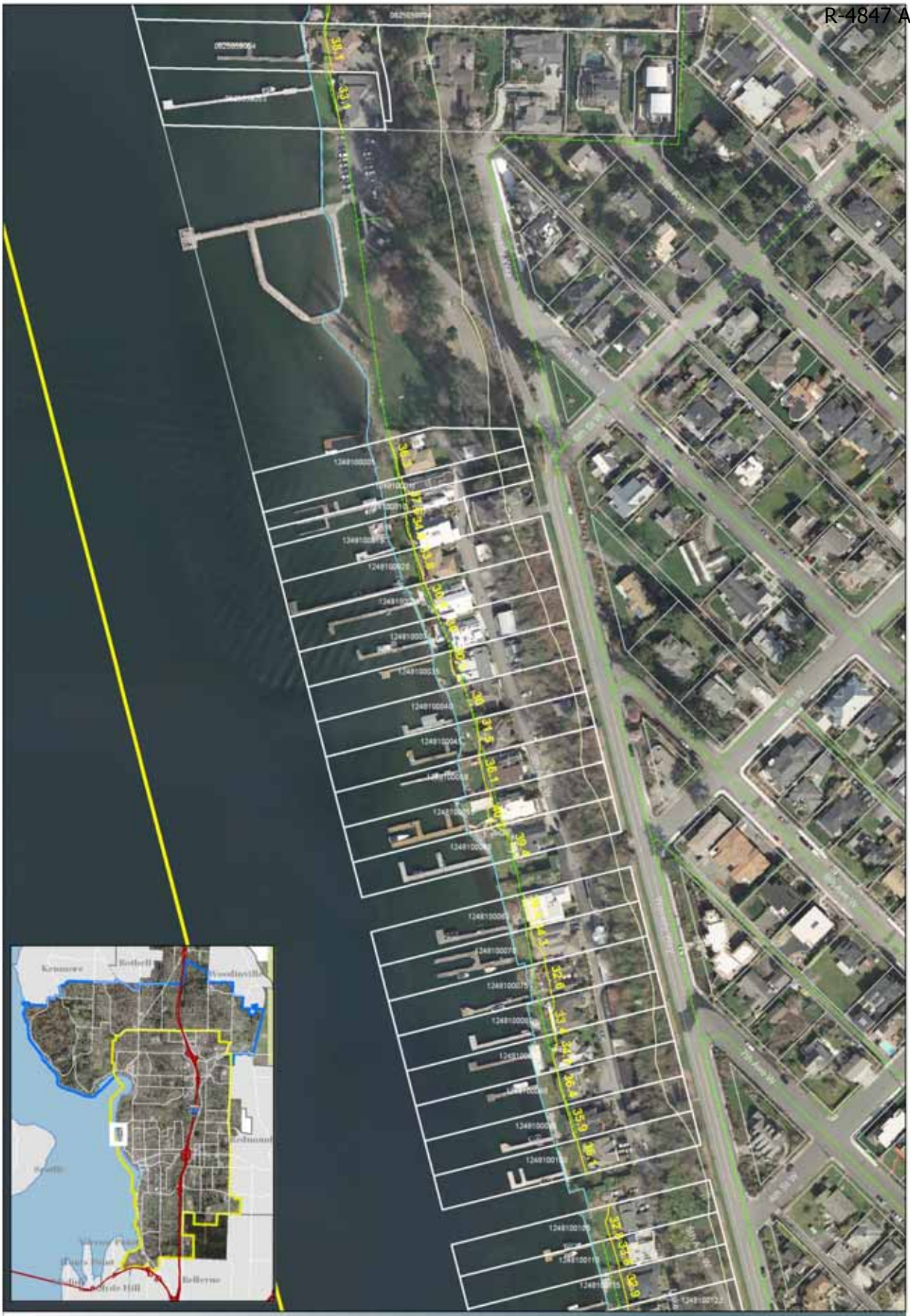


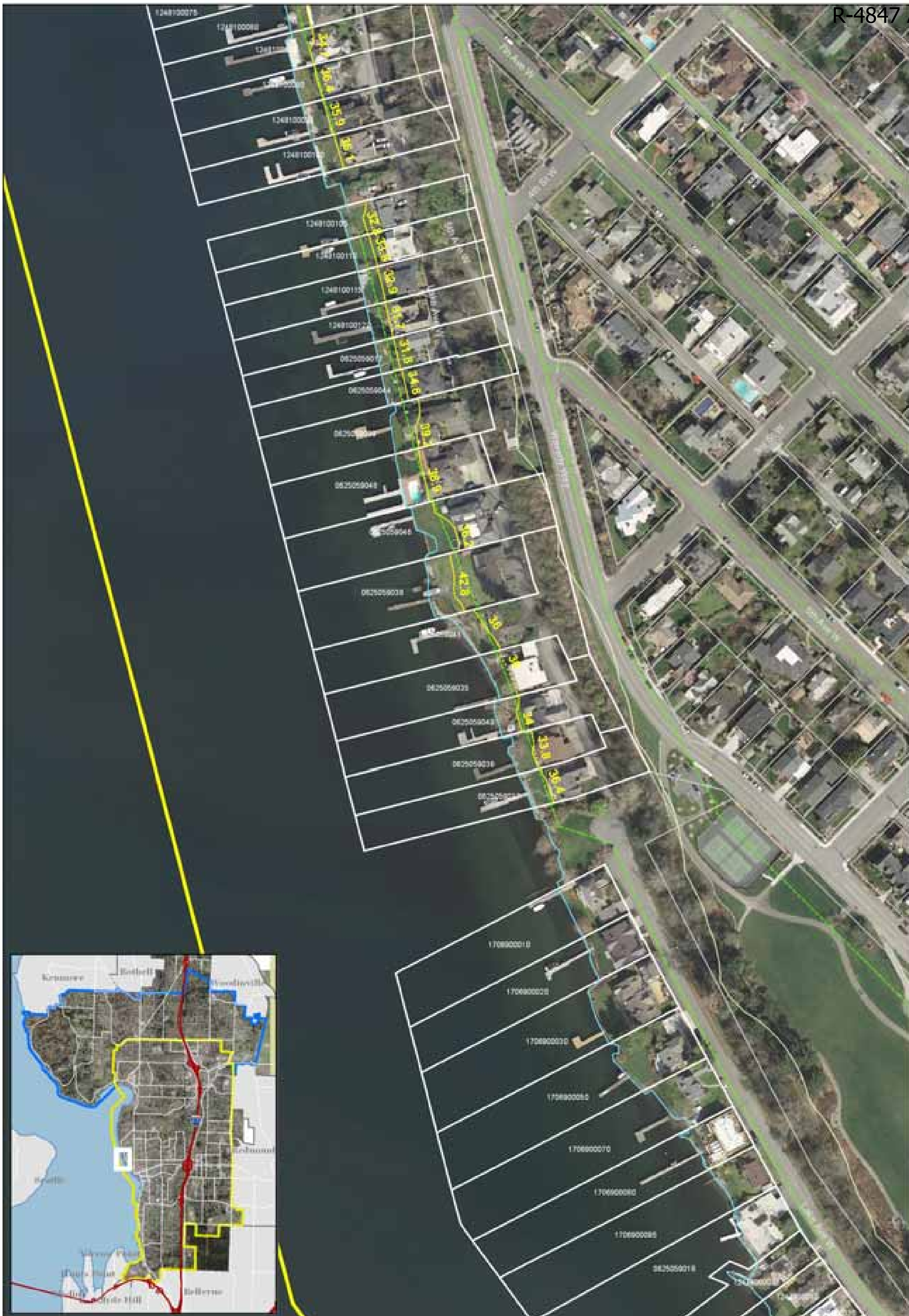
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.

Residential R-L for 30% Average Parcel Depth w/ 30' Minimum and 60' Maximum

Shoreline Master Program - City of Kirkland

CIA - 4c

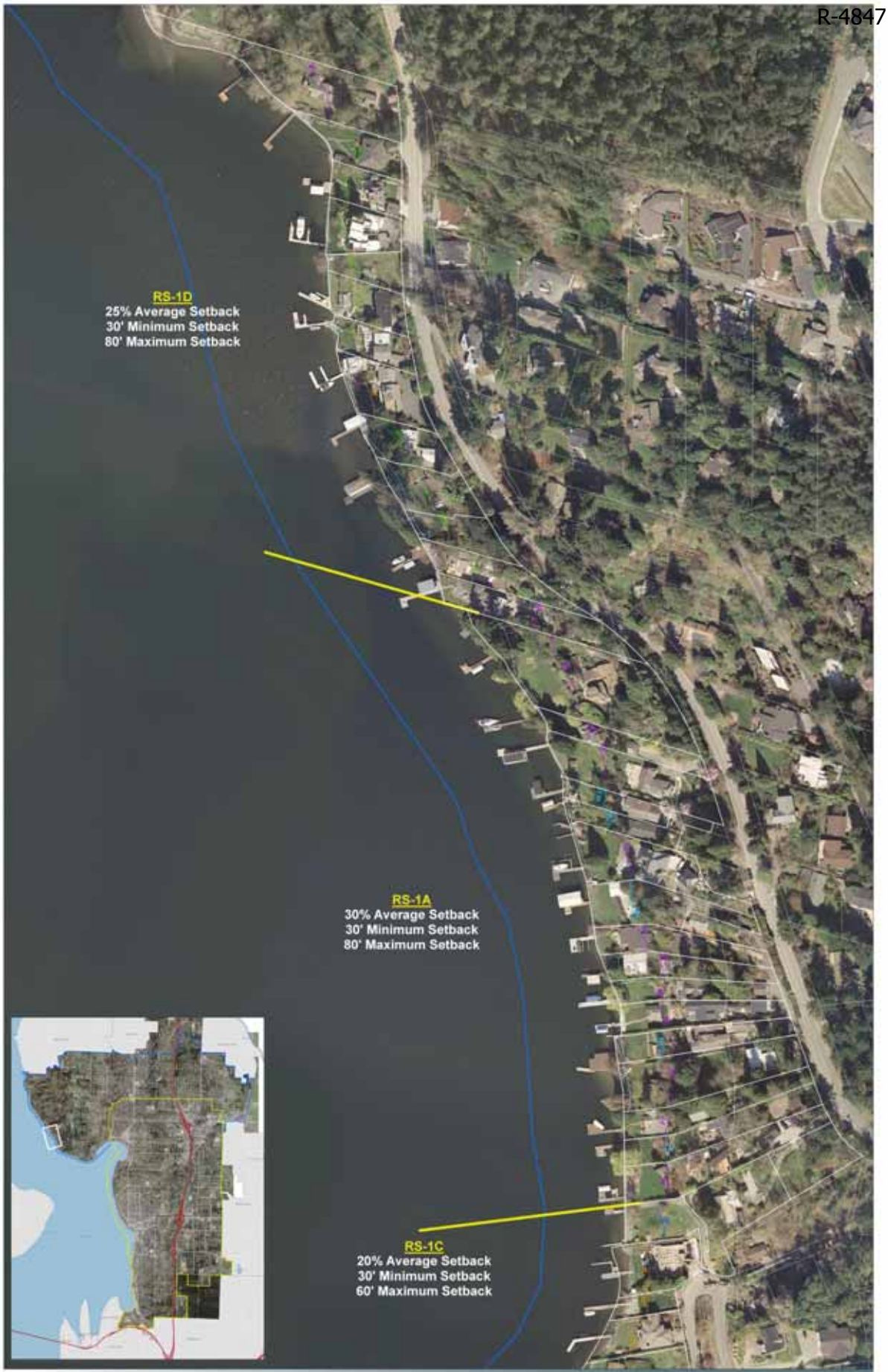

Residential R-L for 30% Average Parcel Depth
w/ 30' Minimum and 60' Maximum
Shoreline Master Program - City of Kirkland
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.
CIA - 4d



Residential R-L for 30% Average Parcel Depth w/ 30' Minimum and 60' Maximum

Shoreline Master Program - City of Kirkland

CIA - 4e


RS-1D
25% Average Setback
30' Minimum Setback
80' Maximum Setback
RS-1A
30% Average Setback
30' Minimum Setback
80' Maximum Setback
RS-1C
20% Average Setback
30' Minimum Setback
60' Maximum Setback
0 90 180 270 360 450
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 Regulations for R-L Environment South of O.O. Denny Park - Variable Setback Area
Shoreline Master Program - Kirkland Annexation Area
CIA - 4f

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 Regulations for R-L Environment South of O.O. Denny Park - Variable Setback Area

Shoreline Master Program - Kirkland Annexation Area

CIA - 4g


RS-1A
30% Average Setback
30' Minimum Setback
80' Maximum Setback
RS-1C
20% Average Setback
30' Minimum Setback
60' Maximum Setback
RS-1B
15% Average Setback
15' Minimum Setback
0 90 180 330 360 450
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 Regulations for R-L Environment South of O.O. Denny Park - Variable Setback Area
Shoreline Master Program - Kirkland Annexation Area
CIA - 4h

Shoreline Regulations for R-L Environment South of O.O. Denny Park - Variable Setback Area

Shoreline Master Program - Kirkland Annexation Area

CIA - 4i

0 90 180 270 360 450
Feet

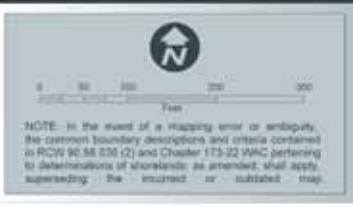
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands, as amended, shall apply, superseding the incorrect or outdated map.

Shoreline Regulations for R-L Environment North of O.O. Denny Park - 20% Average Parcel Depth w/ 25' Minimum Setback

Shoreline Master Program - Kirkland Annexation Area

25' Minimum Setback
20% Average Lot Depth
Ordinary High Water Mark
Shoreline Management Area
Tax Parcels
Kirkland City Limits
Adjacent City Limits
Kirkland Annexation Area

CIA - 4j



Shoreline Regulations for R-L Environment North of O.O. Denny Park - 15' Minimum Setback Area

Shoreline Master Program - Kirkland Annexation Area

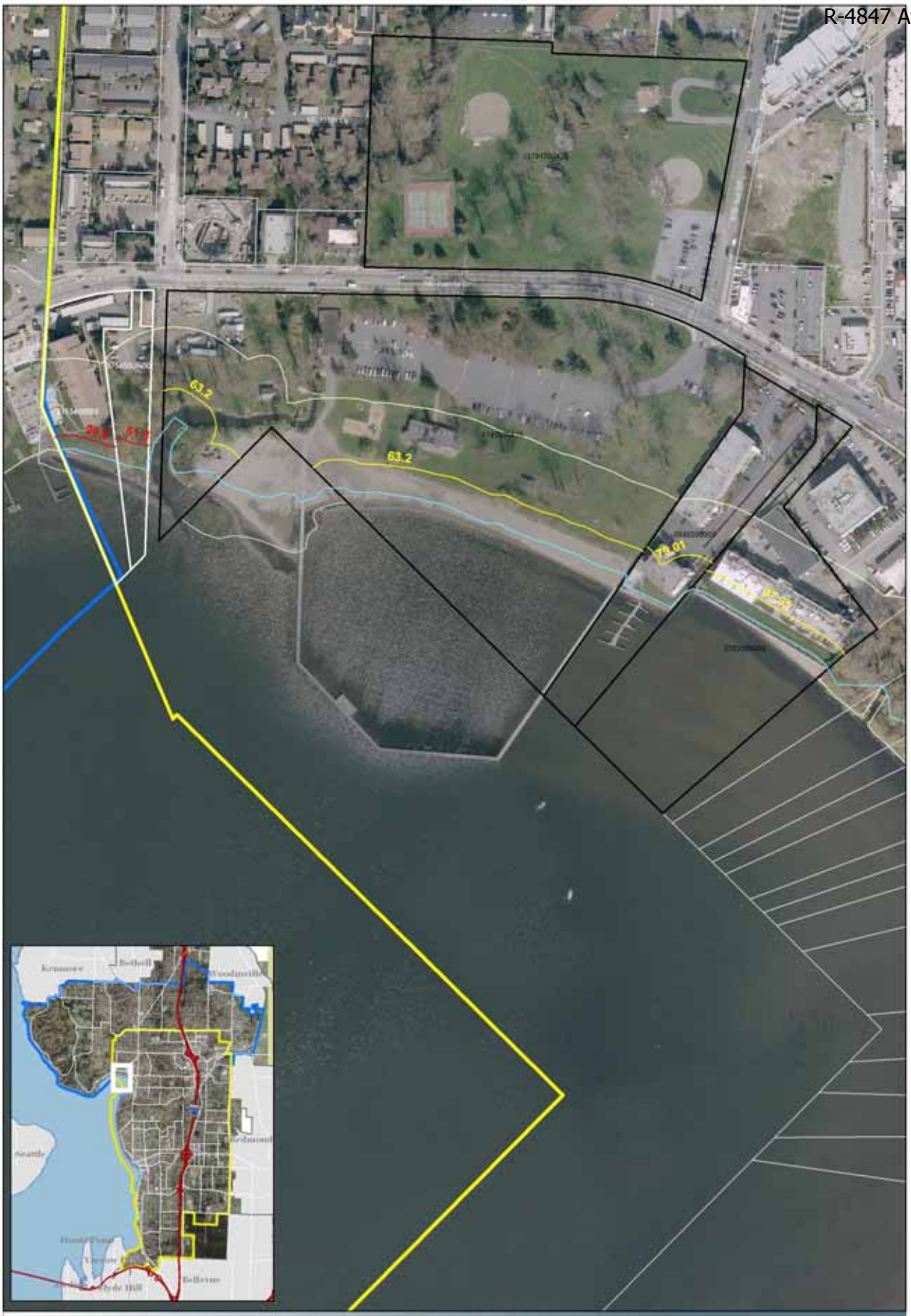
CIA - 4k

Shoreline Regulations for R-L Environment North of O.O. Denny Park - 30% Average Parcel Depth w/ 30' Min and 80' Max Setback

Shoreline Master Program - Kirkland Annexation Area

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.

CIA - 4l



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 R-M/H and UM Environments - 15% Average Parcel Depth w/ 25' Minimum

Shoreline Master Program - City of Kirkland

CIA - 5a

Shoreline Setback Regulation for R-M/H and UM Environments - 15% Average Parcel Depth w/ 25' Minimum

Shoreline Master Program - City of Kirkland

R-M/H Setbacks
25' Minimum Setback
15% Average Lot Depth
R-M/H Parcels

UM Setbacks
25' Minimum Setback
15% Average Lot Depth
UM Parcels

0 100 200 400 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.

CIA - 5b

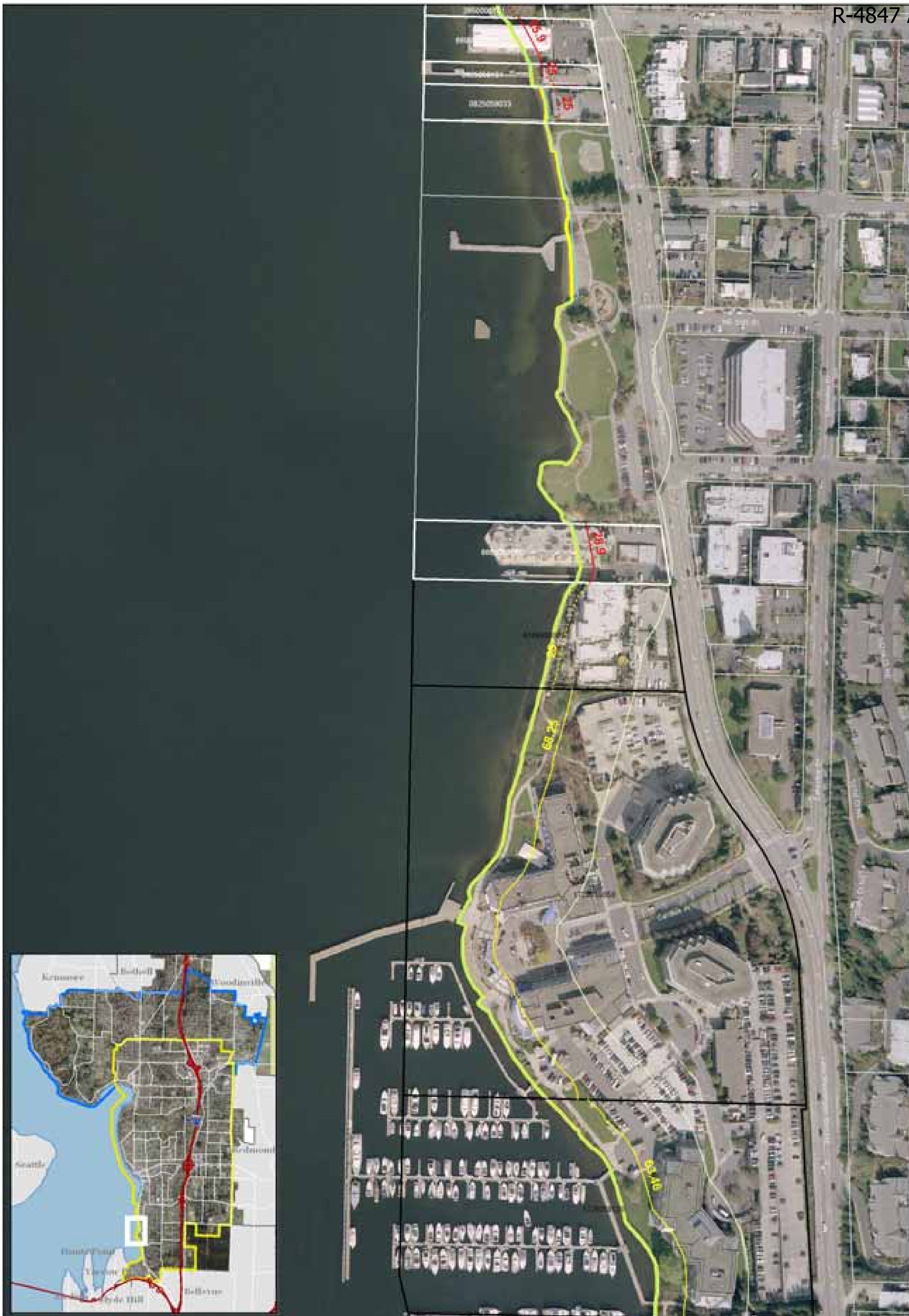
NOTE: In the event of a mapping error or ambiguity, the common boundary descriptions and criteria contained in RCW 90.58.030 (2) and Chapter 173-22 WAC pertaining to determinations of shorelands as amended, shall apply, superseding the incorrect or outdated map.

Shoreline Setback Regulation for R-M/H and UM Environments - 15% Average Parcel Depth w/ 25' Minimum

Shoreline Master Program - City of Kirkland

R-M/H Setbacks
25' Minimum Setback
15% Average Lot Depth
R-M/H Parcels
UM Setbacks
25' Minimum Setback
15% Average Lot Depth
UM Parcels
C3

CIA - 5c



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 R-M/H and UM Environments - 15% Average Parcel Depth w/ 25' Minimum

Shoreline Master Program - City of Kirkland

R-M/H Setbacks
25' Minimum Setback
15% Average Lot Depth
R-M/H Parcels

UM Setbacks
25' Minimum Setback
15% Average Lot Depth
UM Parcels

CIA - 5d

Shoreline Setback Regulation for R-M/H and UM Environments - 15% Average Parcel Depth w/ 25' Minimum

Shoreline Master Program - City of Kirkland

0 100 200 400 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.

CIA - 5e

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

Shoreline Master Program - Kirkland Annexation Area

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.

CIA - 5f

APPENDIX C – PIER ANALYSIS

The Watershed Company
November 2010

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
Percentage of existing piers to be replaced with grated decking in nearshore 30 feet (240 sf/pier)	5%
Total square footage of decking to be replaced with grating	336
Effective overwater coverage of replaced decking (40% open space)	202
Effective reduction in overwater coverage as result of repair	**134**

New Multi-Family Overwater Structures	
Total # of new multi-family piers possible	6
Total square footage estimated for new community pier	2,000
Total square footage fully grated	2,000
Total new square footage for new piers	12,000
Total new effective overwater square footage (40% open space)	7,200
Total square footage of non-grated section	4,800
Total effective square footage of overwater cover for new multi-family piers	**7,200**
Total square footage of existing multi-family piers	62,661
Reduction of effective overwater cover based on repairs	-134
Increase in effective overwater cover based on new piers	7,200
TOTAL FINAL EFFECTIVE OVERWATER COVER	**69,727**
NET CHANGE IN EFFECTIVE OVERWATER COVER	**7,066**

Repair of Commercial Overwater Structures	
Total # of existing commercial structures	11
Total square footage of structures	133,516
Average square footage of commercial structures	12,138
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	792
Effective overwater coverage of replaced decking (40% open space)	475
Effective reduction in overwater coverage as result of repair	**317**
Total square footage of existing commercial piers	133,516
Reduction of effective overwater cover based on repairs	-317
TOTAL FINAL EFFECTIVE OVERWATER COVER	**133,199**
NET CHANGE IN EFFECTIVE OVERWATER COVER	**-317**

Repair of Public Overwater Structures	
Total # of existing public structures	9
Total square footage of structures	32,218
Average square footage of public structures	3,580
Percentage of existing decking to be replaced with grated decking	100%
Total square footage of decking to be replaced	32,218
Effective overwater coverage of replaced decking (40% open space)	19,331
Effective reduction in overwater coverage as result of repair	**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
Effective increase in overwater coverage for additions	**1,489**
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
TOTAL FINAL EFFECTIVE OVERWATER COVER	**20,820**
NET CHANGE IN EFFECTIVE OVERWATER COVER	**-11,398**

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
Total existing overwater coverage (square footage)	**500,708**

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
Total effective overwater coverage at buildout (square footage)	**473,671**

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
TOTAL CHANGE IN EFFECTIVE OVERWATER COVER AT BUILDOUT	**-27,037**
PERCENTAGE DECREASE IN OVERWATER COVER AT BUILDOUT	**-5.4%**

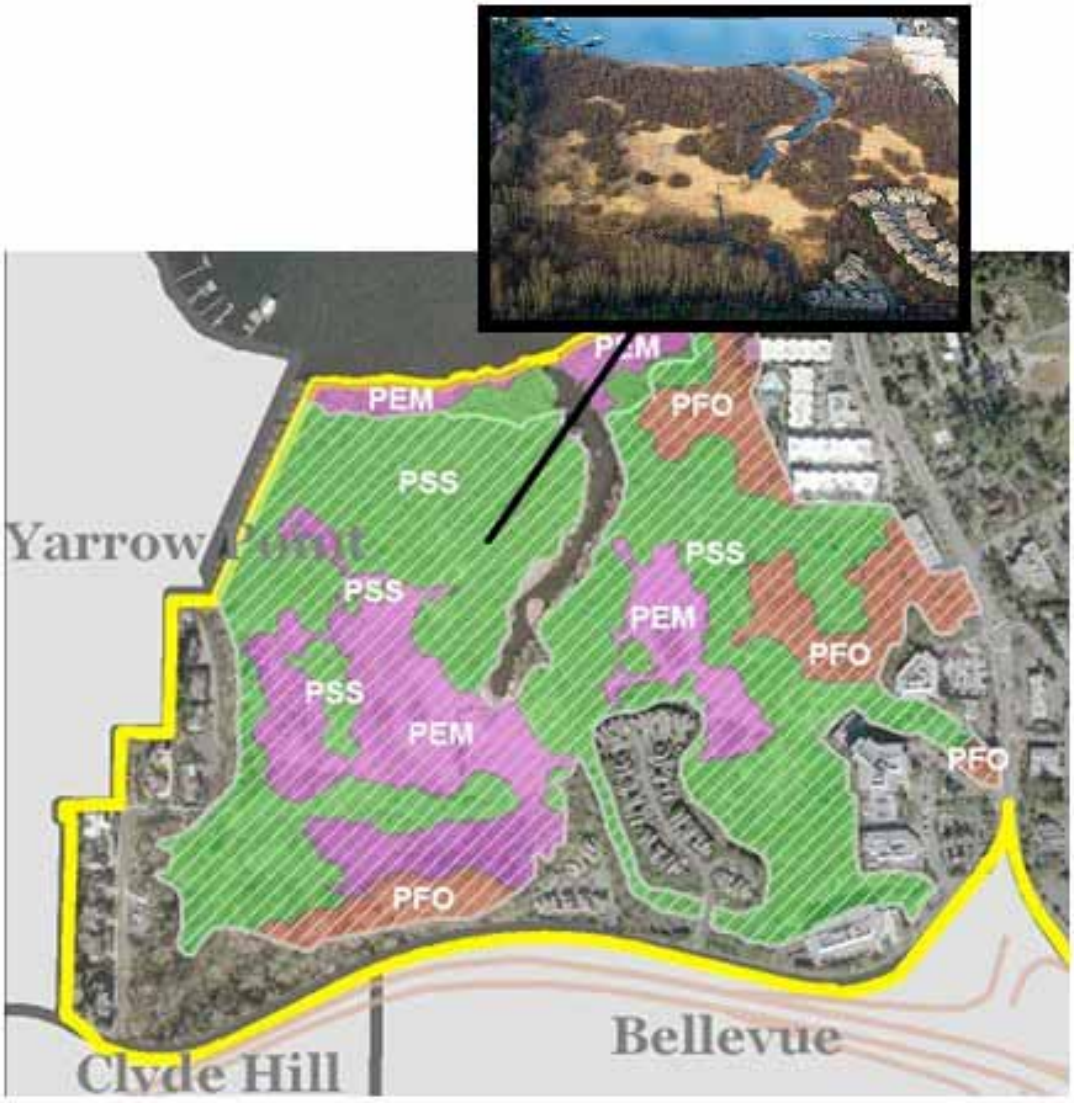
APPENDIX D – VEGETATION DETAILS

Vegetation Detail
Juanita Bay Wetland

Vegetation Detail
Residential - L Environment

Vegetation Detail
Urban Mixed Environment

Vegetation Detail
Residential - M/H Environment



Vegetation Detail
Yarrow Bay Wetlands