WORKING DRAFT

CITY OF BELLEVUE
SHORELINE RESTORATION PLAN

Prepared for:

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1 INTRODUCTION

The Washington State Legislature, in the first lines of the "Shoreline Management Act (SMA)," finds *that the shorelines of the state are among the most valuable and fragile of its natural resources and that there is great concern throughout the state relating to their utilization, protection, restoration, and preservation*.

Bellevue is graced with abundant natural resources. It is located on the shores of both Lake Washington and Lake Sammamish, and contains numerous fish-bearing streams surrounded by significant wetlands. These assets add immeasurably to Bellevue's desirability as a place to live, work and play. Unfortunately, these natural features spur growth and development that can pose a risk to these resources and the benefits they provide. For this reason, the SMA and the Bellevue's Shoreline Master Program (SMP) are in place to prevent the inherent harm in an uncoordinated and piecemeal development.

Bellevue's SMP applies to all activities in the 200-foot shoreline jurisdiction zone and requires that activities that adversely affect ecological functions and values be mitigated by the proponent. It is understood that some uses and developments cannot always be mitigated fully, resulting in incremental and unavoidable degradation of the baseline condition. How then can shoreline processes and functions be protected when the baseline condition is incrementally degraded over time?

The answer is, "restoration."

Section 173-26-201(2)(f) of the Shoreline Master Program Guidelines (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, shoreline degradation also results from pre-SMP activities, unregulated activities and exempt development. Because of this, the Guidelines also state 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." Again, restoration is seen a viable solution.

The Guidelines define restoration as, "The reestablishment or upgrading of impaired ecological shoreline processes or functions…accomplished through measures including, but not limited to, revegetation, removal of intrusive shoreline structures and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions." Instead, it encompasses a suite of strategies that can be approximately delineated into four categories:

- Creation (of a new resource)
- Restoration (of a converted or substantially degraded resource)
- Enhancement (of an existing degraded resource)
- Protection (of an existing high-quality resource).

The restoration opportunities identified in this plan are focused primarily on publicly-owned open spaces and natural areas. There are, however, many other restoration opportunities throughout the city on private property. These opportunities would be similar to those available on public lands, but would occur only through voluntary means or through re-development proposals.

As directed by the Guidelines, the following discussions provide a summary of baseline shoreline conditions, list restoration goals and objectives, discuss existing or potential programs and projects that positively impact the shoreline environment, and provide an analysis of restoration priorities. Finally, anticipated scheduling, funding, and monitoring of these various comprehensive restoration elements are provided. In total, implementation of the Shoreline Master Program (with mitigation of project-related impacts) in combination with this Shoreline 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 Bellevue's shoreline environment in the long-term.

In addition to meeting the requirements of the Guidelines, this Shoreline 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.

2 RESTORATION GOALS AND OBJECTIVES

This section presents the goal and objectives of this plan and the framework used to develop them by summarizing goals, policies, and regulations identified in various other plans and city documents. The goals and objectives represent the general public interest of the citizens of Bellevue, and are consistent with the intent of the Shoreline Management Act.

2.1 Shoreline Restoration Goals and Objectives

Considering the city's current Comprehensive Plan, existing regulatory framework, and contributing regional efforts to sustain and improve ecological functions, the following goals and objectives have been developed for this Shoreline Restoration Plan.

Goal 1 – Provide a balance between the protection and enhancement of shoreline ecological functions and the desire of the community to preserve and improve public access and water-oriented recreation opportunities in this unique environment.

Goal 2 – Maintain, restore or enhance watershed processes, including sediment, water, wood, light and nutrient delivery, movement and loss.

Goal 3 – Maintain or enhance fish and wildlife habitat during all life stages and maintain functional corridors linking these habitats.

Objectives

The following objectives support the goals listed above and are intended to be specific, measurable and action-oriented items. A discussion of performance measurement related to these objectives is included in Section 8 of this Plan.

A. Improve shoreline ecological functions by managing the quality and quantity of stormwater runoff, consistent at a minimum with the latest WDOE Stormwater Management Manual for Western Washington. Make any additional efforts to meet and maintain state and county water quality standards in tributary streams.

B. 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.

C. Identify hardened and eroding lakeshores and streambanks, and improve to the extent feasible with bioengineered stabilization solutions.

D. Increase quality, width and diversity of native vegetation in riparian areas to improve fish and wildlife habitat by providing food, nest sites, shade, perches, and organic debris.

E. Control and reduce populations of non-native aquatic and riparian vegetation that are harmful to native vegetation or habitats.

F. Reconnect and enhance small creek mouths as juvenile salmon refuge and rearing areas.

G. Improve stream ecological functions by eliminating old and preventing new fish passage barriers.

H. Educate the property owners in the shoreline zone and the remainder of the city about the impacts of land management practices and other unregulated activities (such as vegetation removal, pesticide/herbicide use, car washing) on fish and wildlife habitats.

2.2 Existing City Goals and Policies

The *City of Bellevue Comprehensive Plan* (2008) is designed to be a readable, functional document that will guide Bellevue's future development and fulfill the city's regional responsibilities in growth management. In the city's 2025 vision, Bellevue is described as a "City in a Park." They are "a dedicated steward of environmental quality, where key natural features are preserved and restored." Therefore the *City of Bellevue Comprehensive Plan* (2008) includes an Environmental Element with the goal:

> "To integrate the natural and developed environments to create a sustainable urban habitat with clean air and water, habitat for fish and wildlife, and comfortable and secure places for people to live and work."

Other specific, relevant goals in the Comprehensive Plan are as follows:

- Environmental Stewardship Goal: "To promote a sustainable urban environment by weighing environmental concerns in all decision-making processes."
- Water Resources Goal: "To preserve and enhance water resources."
- Earth Resources and Geologic Hazards Goal: "To preserve and enhance vegetation and earth resources."
- Fish and Wildlife Habitat Conservation Areas Goal: "To provide fish and wildlife habitat of sufficient diversity and abundance to sustain existing indigenous wildlife populations."
- Air Quality Goal: "To meet federal, state, regional, and local air quality standards through coordinated, long-term strategies that address the many contributors to air pollution."
- Noise Goal: "To control the level of noise pollution in a manner which promotes the use, value, and enjoyment of property; sleep and repose; and a quality urban environment."

2.3 Existing City Regulations

The Bellevue City Code contains numerous chapters and sections enacted over the years to protect the quality of Bellevue's environment. For example, these regulations include: the Environmental Procedures Code, the Storm and Surface Water Utility Code, the Clearing and Grading Code, and the Critical Areas Overlay District of the Land Use Code.

Environmental Procedures Code (BCC 22.02)

The purpose of these procedures is to implement the requirements of the State Environmental Policy Act of 1971 (SEPA), Chapter 43.21C RCW, as amended, and the SEPA rules adopted by the WDOE. These procedures establish principles, objectives, criteria and definitions to provide an efficient overall citywide approach for implementation of the State Environmental Policy Act and Rules. These procedures also designate the responsible official, where applicable, and assign responsibilities within the city under the National Environmental Policy Act (NEPA).

Storm and Surface Water Utility Code (BCC 24.06)

The purpose of this code is to provide for the planning, security, design, construction, use, maintenance, repair and inspection of the public and private storm and surface water system; to establish programs and regulations to assure the quality of the water in such system, to preserve the integrity of the system, and to minimize the chance of flooding; and to provide for the enforcement of the provisions of this code. This code supplements other city ordinances and regulations regarding protection of the storm and surface water system, including but not limited to the wetland and riparian corridor regulations included in Part 20.25H LUC, the Sensitive Area Overlay District.

Clearing and Grading Regulations (BCC 23.76)

The purpose of this code is to enact regulations consistent with the environmental element of the city's comprehensive plan to protect water and earth resources, fish and wildlife habitat, and public health and safety from the potential adverse impacts associated with clearing and grading private and public land in the city.

In addition to implementing goals of the environmental element, these regulations implement best management practices required to meet federal and state environmental law requirements.

These regulations focus on prevention of potential adverse impacts associated with clearing and grading activities through a proactive approach rather than remediation of (or a reactive approach to) adverse impacts. The intent and purpose of these Clearing and Grading regulations is to provide for and promote the health, safety, and welfare of the general public.

Critical Areas Overlay District (LUC 20.25H)
The Critical Areas Overlay District is a mechanism by which the city recognizes the existence of natural conditions which affect the use and development of property. Through this part, the city designates and classifies ecologically sensitive and hazard areas and imposes regulations on the use and development of affected property in order to protect the functions and values of these areas and the public health, safety and welfare, and to allow the reasonable use of private property.

The City of Bellevue has a long history of protecting environmentally critical areas, with its first Sensitive Areas regulations adopted in 1987. In 2001, the city began the process of updating their policies and regulations to protect streams, wetlands, shorelines and steep slopes, ensuring the city's response to the GMA fits with long-standing Bellevue principles. On June 26, 2006, the City Council adopted an ordinance amending the Bellevue Land Use Code to update critical areas regulations.

2.4 Contributing Plans

The *Final Lake Washington/ Cedar/ Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* (July 2005) identifies the following conservation strategies for the protection of chinook salmon and their habitat.

- Protect and restore habitat chinook salmon use during all of the life stages that are spent in the WRIA 8 watershed, from egg to fry to smolt to adult;
- Protect and restore the natural processes that create this habitat, such as natural flow regimes and movement of sediments and spawning gravels;
- Maintain a well-dispersed network of high-quality habitat to serve as centers for the population;
- Provide safe connections between those habitat centers to allow for future expansion.

The development of these strategies are based partly on findings from the *Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin (Water Resource Inventory Area 8)* (Kerwin 2001) which identified the following limiting habitat factors and impacts for Lake Washington and Lake Sammamish:

- The riparian shoreline of Lake Washington is highly altered from its historic state. Current and future land use practices all but eliminate the possibility of the shoreline to function as a natural shoreline to benefit salmonids;
- Introduced plant and animal species have altered trophic interactions between native animal species;
- The known historic practices and discharges into Lake Washington have contributed to the contamination of bottom sediments at specific locations;
- The presence of extensive numbers of docks, piers and bulkheads have highly altered the shoreline; and
- Riparian habitats are generally non-functional.

- Eurasian water milfoil locally degrades water quality by reducing dissolved oxygen levels below minimum requirements for salmonids. The invasive nature of Eurasian water milfoil has likely decreased the overall diversity of macrophytes throughout Lake Sammamish

The City of Bellevue has approved and committed support for the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* (WRIA 8 Steering Committee 2005). Not only does this document provide guidance and recommended actions to conserve and recover chinook salmon and other anadromous fish, but it also recognizes the multiple benefits to people and fish of its implementation including water quality improvement; flood hazard reduction; open space protection, and maintaining a legacy of future generations, including commercial, tribal and sport fishing, quality of life, and cultural heritage.

3 SHORELINE INVENTORY SUMMARY

3.1 Introduction

The city completed a comprehensive inventory of its shorelines in 2008, as an element of its Shoreline Master Program update. The purpose of the shoreline inventory was to gain a greater understanding of the existing condition of Bellevue's shoreline environment to ensure the updated Shoreline Master Program policies and regulations are well-suited in protecting ecological processes and functions. The inventory describes existing physical and biological conditions in the shoreline zones within city limits, including recommendations for restoration of ecological functions where they are degraded. The *Shoreline Analysis Report* (TWC and Makers 2009) is summarized below.

3.2 Shoreline Boundary

As defined by the Shoreline Management Act of 1971, shorelines include streams whose mean annual flow is 20 cubic feet per second (cfs) or greater and lakes whose area is greater than 20 acres, plus their associated uplands extending landward for 200 feet as measured from the ordinary high water mark and associated wetlands. Shorelines in Bellevue include Lake Sammamish, Lake Washington, Phantom Lake, Kelsey Creek, Mercer Slough, and their associated wetlands (Table 1). Complete definitions for shorelines and shorelands can be found in RCW 90.58.030.

As part of the shoreline inventory, jurisdictional boundaries were recently adjusted according to new information regarding associated wetlands and stream waterflow volume. Six areas along the city's shorelines contain wetlands, including Meydenbauer Bay, Mercer Slough, Lower Kelsey Creek, Newcastle Beach Park, Phantom/Larsen Lakes, and Lake Sammamish (for more details see the *Shoreline Analysis Report - Technical Appendix Volume I* (TWC and Makers 2009)). Also, per a recent U.S. Geological Survey (USGS) study, the location of 20 cfs flow for Kelsey Creek has been adjusted slightly upstream, near the confluence with Richards Creek.

3.3 Inventory and Analysis

The City of Bellevue's shoreline inventory consists of approximately 960 acres (1.5 square miles) along 19.7 miles of stream and lakeshore (Table 1). The following inventory and analysis information is summarized from the *Shoreline Analysis Report*. Key statistics (Table 1) and maps (Figures 1 and 2) are provided for the four *Shoreline Analysis Report* sub-sections (Lake Washington, Kelsey Creek/Mercer Slough, Lake Sammamish, and Phantom Lake).

Table 1. Area of shoreline jurisdiction within the City of Bellevue.

	Shoreline	Units	Lake Washington	Kelsey Creek/Mercer Slough	Lake Sammamish	Phantom Lake	Total
Inventory Data	Length of Shoreline	miles	9.12	3.74	4.96	1.88	19.70
	Total Area	acres	219	449	119	173	960
		sq. miles	0.34	0.70	0.19	.027	1.50
	Associated Wetlands	% of area	10	92	NA[1]	87	N/A
	Vegetative Cover	% of area	57	83	55	94	76
Land Use	Single-Family Res	% of area	76	6	94	17	N/A
	Multi-Family Res	% of area	3	<1	2	0	N/A
	Park	% of area	13	71	4	83	N/A
	Marina	% of area	7	0	0	0	N/A
	Commercial	% of area	<1	23	<1	0	N/A
Shoreline Modifications	Impervious Surface	% of area	41	18	39	7	24
	Shoreline Armoring	% of length	81	--[2]	71	2	55
	Piers	#/mile	38	--[2]	67	15	36

[1]Wetlands inventory not completed along Lake Sammamish shoreline
[2]Shoreline armoring and piers not inventoried as part of the GIS database.

Figure 1. Map of the Lake Washington and Kelsey Creek/Mercer Slough Shoreline Jurisdictional Areas

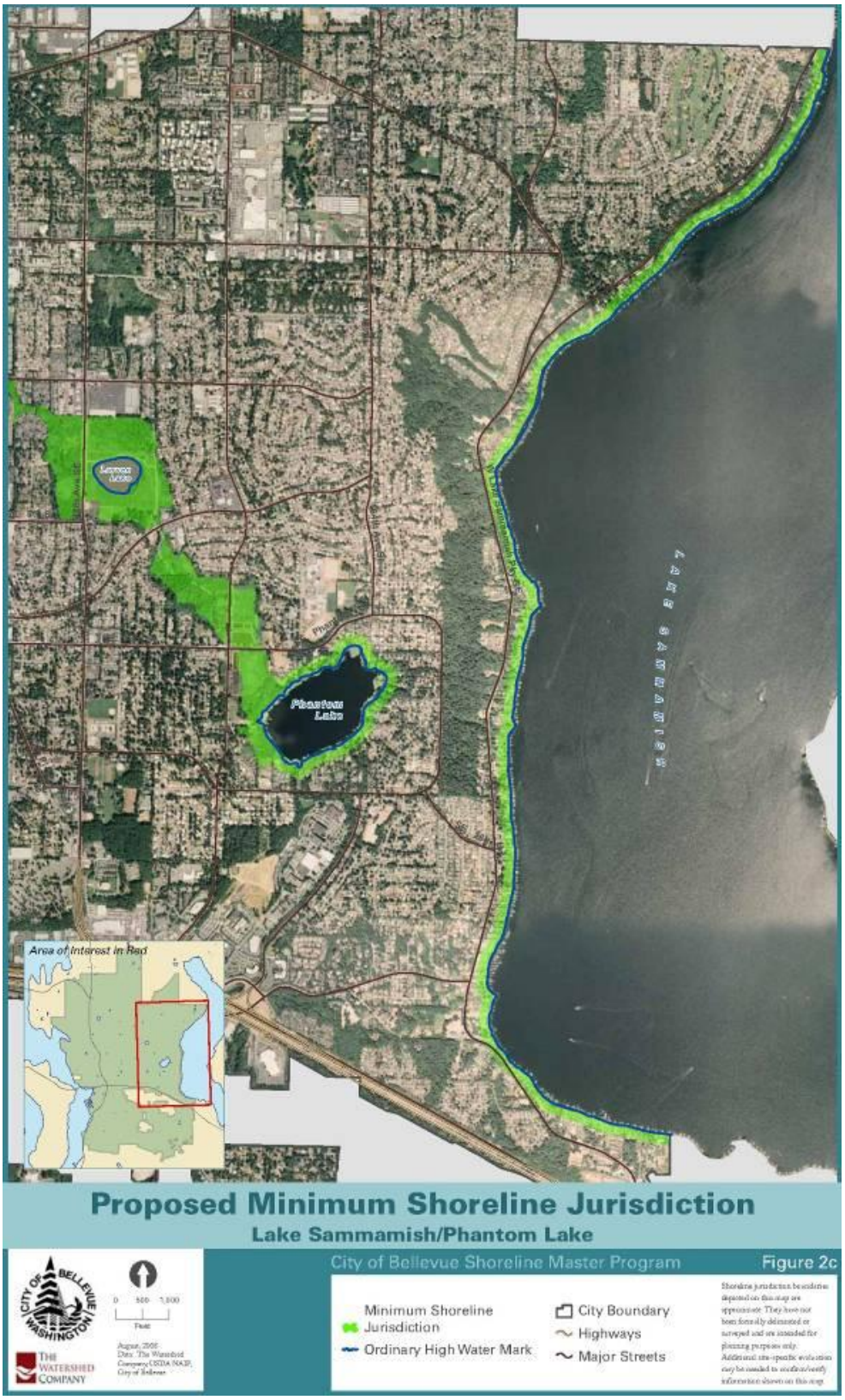


Figure 2. Map of the Lake Sammamish and Phantom Lake Shoreline Jurisdictional Areas

3.3.1 Lake Washington

Land Use and Physical Condition

The City of Bellevue is bordered on its western boundary by just over 9 miles of Lake Washington shoreline. The shoreline is made up almost exclusively of single-family residences (with the exception of one multi-family use property within Meydenbauer Bay), several marinas and yacht clubs, and public park facilities. Nearly completely developed, this shoreline has only approximately 23 small vacant/undeveloped lots sporadically spread along the shoreline, all of which are located within residential areas. There are also three unimproved street ends (Killarney Drive, SE 60th Street, and SE 62nd Street) that terminate at the shoreline of Lake Washington, all of which appear to be utilized by neighboring properties. In total, over 10 percent of shoreline jurisdiction is used as park/open space area. The city is actively pursuing the acquisition of additional waterfront properties to expand public access and better meet the city goal of increasing shoreline public access.

Biological Resources, Critical Areas, and Ecological Functions

The City of Bellevue's Lake Washington shoreline has several low-functioning and/or lake fringe wetlands located in Meydenbauer Beach Park, Newcastle Beach Park, and near the mouths of Meydenbauer Creek, Coal Creek, and Mercer Slough (see the *Shoreline Analysis Report - Technical Appendix Volume I* for more detail).

The City of Bellevue has eight recognized streams that empty into Lake Washington, including Meydenbauer Creek, Kelsey Creek, Coal Creek, Lakehurst Creek, and several other unnamed tributaries. Several of these streams are known to support fish use and contain fish habitat for chinook, coho, and sockeye salmon, winter steelhead, and resident cutthroat trout.

WDFW mapping of Priority Habitat and Species (WDFW 2007) identifies bald eagle nests in or adjacent to shoreline jurisdiction and an osprey nest near Meydenbauer Beach Park. There is little to no area of significant overhanging vegetation throughout the majority of shoreline jurisdiction, with the exception of high quality overhanging vegetation within parklands and along Mercer Slough. Most of the upland habitats within the Lake Washington shoreline jurisdiction are considered to be moderate, again with the exception of parklands, Mercer Slough (reserve habitat) and a few isolated properties that have high habitat value. Shoreline parks contain areas of significant forest patches or fragmented forest that provides improved urban habitat value. Areas of sedimentation have been noted in Meydenbauer Bay and the Newport Shores communities, as historical dredging occurred in both locations. Aquatic invasive species, particularly Eurasian water milfoil are known to be very problematic along the

Lake Washington shoreline. The City of Bellevue has a permit for treatment at high use public access areas, including the SE 40th Boat Launch and Newcastle Beach Park.

In general the ecological function of the Lake Washington shoreline is of low/moderate value, with pocket areas of moderate or higher rated shorelines near the mouths of both Mercer Slough and Coal Creek due mostly to a fairly intact vegetated condition and lack of shoreline modifications. Throughout the remainder of the city's Lake Washington shoreline, ecological functions have been impacted by urban development, through the loss of shoreline vegetation and increased impervious surface area (e.g. reduced terrestrial and aquatic habitat, poor nutrient and pollutant uptake rates, and diminished erosion control), and extensive shoreline armoring (e.g. diminished nearshore aquatic habitat, limited wave attenuation, and loss of substrate recruitment).

3.3.2 Kelsey Creek/Mercer Slough

Land Use and Physical Condition

Within shoreline jurisdiction, land use is dominated by parklands (primarily within Mercer Slough Nature Park) and single-family, multi-family, light industrial, and office land use designations. There are approximately 8 vacant or undeveloped lots within the Kelsey Creek/Mercer Slough shoreline jurisdiction, which includes lots that may already be encumbered by associated wetland areas. Kelsey Creek and Mercer Slough are relatively free of shoreline modifications with the majority of creek protected as public parkland, offering natural stream channel and extensive habitat features. There is some in-water structure and shoreline armoring associated with roadways and properties used for light industrial and office, but this information has not been mapped for inventory calculations. There are a few small docks found along Mercer Slough shorelines, primarily used for public access.

Biological Resources, Critical Areas, and Ecological Functions

The Mercer Slough area contains a large and unique shoreline wetland system that currently extends from just north of Coal Creek at its southern edge, northward to SE 6th Street near downtown Bellevue. The Mercer Slough Wetland is approximately 400 acres in size and provides important functions to the city's shoreline, even though it has been fragmented from alterations within the watershed. Additional, high functioning wetlands, are located in and adjacent to the shoreline jurisdiction of Lower Kelsey Creek, including areas along Sturtevant Creek. Nearly the entire Kelsey Creek/Mercer Slough area and associated wetlands are located within a 100-year floodplain. More detail on shoreline wetlands within city jurisdiction for Kelsey Creek and Mercer Slough can be found in the *Shoreline Analysis Report - Technical Appendix Volume I*.

WDFW classifies four separate areas as Priority Habitat within the Kelsey Creek shoreline corridor, as either urban natural open space or wetlands (WDFW 2007). According to WDFW, the urban natural open space area is described as "Relatively

densely forested tracts. Some steep hillsides." Associated wetlands along the north side of Kelsey Creek contain several areas rich in snags, and the lower portion of Mercer Slough contains areas of fragmented forest and significant perch trees. Nearly the entire length of Kelsey Creek/Mercer Slough within shoreline jurisdiction contains overhanging vegetation. Priority species noted by WDFW (2007) include a great blue heron colony located alongside Mercer Slough in addition to the anadromous and resident fish species present in Mercer Slough, Kelsey Creek and Richards Creek that includes fall chinook, coho and sockeye salmon, resident coastal cutthroat and rainbow trout.

Ecological function of Kelsey Creek/Mercer Slough is generally very good. With the exception of the Bellefield Office Park and the I-405 highway corridor, this area possesses a high percentage of natural shoreline with abundant overhanging vegetation and little shoreline armoring and impervious surfaces. However, there are large areas of invasive species in the associated wetlands.

3.3.3 Lake Sammamish

Land Use and Physical Condition

The City of Bellevue is bordered on its eastern boundary by approximately 5 miles of Lake Sammamish shoreline (Figure 2). The shoreline is made up almost exclusively of single-family residences, with the exception of small pockets of multi-family residential, several small retail establishments, and private park facilities. The shoreline is nearly completely developed with approximately 21 vacant/undeveloped lots in shoreline jurisdiction, all within residential areas.

The City of Bellevue currently has no developed parks or public access sites around Lake Sammamish. Due to the fact that the Lake Sammamish shoreline is primarily privately owned and dominated by residential uses, there is very little opportunity for public access. City of Bellevue standards propose that 10 to 20 percent of the city's shoreline be available for public access, therefore land acquisition of these waterfront properties is being pursued. Currently the city owns three adjacent parcels containing approximately 190 lineal feet of shoreline.

Biological Resources, Critical Areas, and Ecological Functions

No major wetland areas have been identified along the Lake Sammamish shoreline within the City of Bellevue. However, there are likely many small, minor, lake-fringe wetlands marking the edge of the lake in some locations.

At least ten recognized streams flow into Lake Sammamish within the City of Bellevue. Most of these streams flow through culverts beneath West Lake Sammamish Parkway before entering Lake Sammamish. The more significant streams include Phantom Creek and Vasa Creek, both of which are known to support fish use.

The entire Lake Sammamish shoreline is considered to be within a 100-year floodplain (up to 36.6 feet elevation [NAVD 88]). Additionally, the areas surrounding the mouth of Vasa Creek and areas upland approximately 0.5 miles have also been identified to be within a floodplain area.

WDFW did not classify any areas of Priority Habitat within Lake Sammamish shoreline jurisdiction. The shoreline is generally void of significant forest areas and is limited to only small fragmented forest with very little overhanging vegetation. Eurasian water milfoil (*Myriophyllum spicatum*) is a significant problem species with widespread infestations around the lake.

Similar to the Lake Washington shoreline, the ecological function of the Lake Sammamish shoreline is of low/moderate value, with only pocket areas with higher functions. Ecological functions have been impacted by urban development, through the loss of shoreline vegetation and increased impervious surface area (e.g. reduced terrestrial and aquatic habitat, poor nutrient and pollutant uptake rates, and diminished erosion control), and extensive shoreline modifications (e.g. diminished nearshore aquatic habitat, limited wave attenuation, and loss of substrate recruitment). Although only two significant fish bearing streams are present in the Shoreline Jurisdiction (Vasa and Phantom Creeks), many small tributaries flow into Lake Sammamish and may provide vital areas for juvenile salmon rearing.

3.3.4 Phantom Lake

Land Use and Physical Condition

Phantom Lake is located in eastern Bellevue and is surrounded by public open space and single-family residential housing (Figure 2). The lake itself is approximately 65 acres, and drains near its northeast corner to Phantom Creek, which flows into Lake Sammamish. There are approximately 15 vacant/undeveloped lots in Phantom Lake shoreline jurisdiction, including the areas around Larsen Lake and their associated wetlands.

Although primarily surrounded by residential uses, Phantom Lake has two park sites along its shoreline and other expansive public open spaces throughout its associated wetland areas. The Robinsglen Nature Park (225 lineal feet of shoreline frontage) and a portion of the Lake Hills Greenbelt (935 lineal feet of shoreline frontage) provide public shoreline access opportunities to Phantom Lake. Both offer limited shoreline access due to shoreline vegetation and associated wetlands. The remainder of the Phantom Lake shoreline jurisdiction is made up entirely of public open space contained within the Lake Hills Greenbelt, north of SE 16th Street. In total, the Lake Hills Greenbelt offers over 150 acres of open space, over three miles of trails, picnic areas, non-motorized water access, fishing, blueberry farms and seasonal produce stands.

Biological Resources, Critical Areas, and Ecological Functions

Historically, a 170-acre wetland complex extended north approximately 1.8 miles from the south edge of Phantom Lake to the area northwest of Larsen Lake. This wetland complex has now been divided by human alterations into four distinct wetland units that are considered to be hydrologically associated with the Phantom Lake shoreline jurisdiction. Additionally, the majority of Phantom Lake's perimeter contains fringe wetlands. Nearly the entire area within Phantom Lake's shoreline jurisdiction has been mapped as a flood hazard area, but is void of any geologically hazardous areas.

WDFW mapping of Priority Habitat and Species classifies eleven separate areas as Priority Habitat within the Phantom Lake corridor. These areas are categorized as riparian zones, urban natural open space, or wetlands (WDFW 2007). Areas surrounding Larsen Lake are rich in snags and overhanging vegetation. In 1985 Phantom Lake was found to be eutrophic and suffering from deteriorating water quality caused by very high nutrient concentrations (primarily excessive inputs of phosphorus), low water clarity, a severe dissolved oxygen deficiency, and was dominated by nuisance concentrations of blue-green algae. Several restoration efforts were implemented in the early 1990's to address these issues (see *Shoreline Analysis Report* for more details).

Ecological functions within the Phantom and Larsen Lake areas rate moderate/high to high primarily due to the large associated wetland system that connects the two waterbodies which subsequently provides many functions such as hydrologic storage, support of an extensive vegetative community, terrestrial and aquatic habitats, and water quality improvement. While the residential areas which surround most of Phantom Lake have some impacted shoreline functions, they are generally unarmored and maintain some semblance of lake fringe wetlands. However, similar to Mercer Slough, there are large areas of invasive species in the associated wetlands which surround both Phantom and Larsen Lakes which impacts both habitat and vegetative functions.

4 Ongoing City Programs

4.1 Utilities – Stream Team

The city's Stream Team mission is to provide information, increase community involvement and awareness, and initiate changes that will protect the quality of the city's water systems and fish and wildlife habitat. Stream Team volunteers can learn about local streams, and fish and wildlife habitat in a variety of ways through volunteering to plant stream corridors with native trees and shrubs, observing streams for returning adult salmon, helping to collect stream bug samples (macroinvertebrate) for water quality monitoring, or by inviting a Stream Team staff member to speak at a

local school or club. Stream Team volunteers play a vital role in preserving fish and wildlife habitat and are able to be a part of the following volunteer groups: Salmon Watchers, Peamouth Patrol, Earth Day/Arbor Day, and Macroinvertebrate Workshop and Field Collection.

4.2 Utilities – Stormwater Management and Planning

To protect water quality, Bellevue manages stormwater runoff in a number of ways. The city follows "best management" practices and operates under a NPDES Phase II Municipal Stormwater Permit issued by Ecology in January 2007. This permit is a requirement of the Federal Clean Water Act. The best management practices in the permit are collectively referred to as the NPDES Stormwater Management Program. 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 (i.e. spills, illegal dumping, and 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 describes their Storm and Surface Water Utility in the Utilities Element of the *City of Bellevue Comprehensive Plan* (2008).

The following table (Table 2) outlines some of the general surface water improvement projects excerpted from the City of Bellevue's *2009-15 Capital Investment Program* (2009):

Table 2. General surface water improvement projects.

CIP Plan Number	Project Name	Description	Funding	Timeline
D-59	Minor Storm and Surface Water Capital Improvement Projects	Program to fund minor capital improvements to the city's storm drainage system which are generally too small to justify as separate CIP projects, and oftentimes can't be anticipated.	$2,334,000 ($1,174,000 appropriated to date)	Ongoing
D-64	Storm Water System Conveyance Infrastructure Rehabilitation	Program to rehabilitate or replace defective storm drainage pipelines and ditches identified in the Utility's condition assessment program or other means. Projects are prioritized based on the severity of deterioration, the risk and consequence of failure, and coordination with planned street improvement projects.	$12,394,000 ($6,251,000 appropriated to date)	Ongoing
D-94	Flood Control Program	This program will construct improvements to drainage systems to alleviate flooding where the Utility's goal for level of service for protection from flooding is not met.	$5,372,000 ($1,603,000 appropriated to date)	Ongoing

		Project improvements could involve increasing conveyance capacity; re-routing drainage; or adding detention, infiltration, or other runoff control mechanisms.		

4.3 Utilities – Other Programs

City Utilities provides numerous services to the community and residents, including garbage and recycling, drinking water conservation, flood prevention, water pollution prevention, storm and surface water planning/management and salmon and stream conservation. One of the city's Utilities goals is to "promote and encourage the provision of reliable utility service in a way that balances the public's concerns about safety and health impacts of utility infrastructures, consumers' interest in paying no more than a fair and reasonable price for the utility's product, Bellevue's natural environment and the impacts that utility infrastructures may have on it, and the community's desire that utility projects be aesthetically compatible with surrounding land uses."

The following table (Table 3) lists proposed and current broad-scale programs and projects that are either in shoreline jurisdiction or have the propensity to affect shoreline ecological functions:

Table 3. Proposed or current broad-scale programs.

CIP Plan Number	Project Name	Description	Funding	Timeline
D-81	Fish Passage Improvement Program	This program corrects migration barriers, such as culverts, debris jams, and beaver dams that prevent salmonids and other fish species from utilizing upstream habitat suitable for spawning and rearing. This includes several sections of Kelsey Creek.	$3,239,000 ($958,000 appropriated to date)	Ongoing
S-58	Sewer Lake Line Replacement Program	This ongoing program will have an initial construction project to replace approximately 1,150 feet of sewer line (currently under Meydenbauer Bay) with on-shore pipe between Grange Pump Station and Meydenbauer Beach Park. It would also provide ongoing condition assessment of critical pipe segments, to provide pre-design information for future sewer lake line replacement projects.	$3,012,000	Ongoing
D-74	Lower Newport Creek - Stream	This project will place large woody debris and boulders and replant	$714,000	Completed in 2008,

	Channel Modification	natives along approximately 1,500 feet of the stream to stabilize the streambed, reestablish stream meander, reduce bank erosion, improve pool to riffle ratios, and fish and riparian habitat.	($660,000 appropriated to date)	permit compliance monitoring through 2011.

4.4 Parks and Community Services

The Parks and Community Services Department manages 60 percent of Bellevue's wetlands, 30 percent of the riparian corridors and 10 percent of its shorelines. Environmental stewardship is woven into Park programs to acquire land and to sensitively manage its natural resources. Parks must balance opportunities for stewardship against other fundamental missions, including providing parks, recreation and public access opportunities. Programs may address degraded habitat conditions resulting from existing land use and the cumulative impacts of ongoing urban development.

Of particular relevance to the objective of improving shoreline function is the Park Redevelopment element of the city's CIP (City of Bellevue 2009). This includes numerous projects that provide fish passage improvement, bioengineered streambank stabilization, restoration of armored streambanks, flood abatement, water quality improvement, and riparian vegetation enhancement among others. Many of these projects are planned "upstream" of shoreline jurisdiction, but will still have positive effects on the shoreline environment. Some of these projects have been included in Table 4 below.

Table 4. Park Redevelopment CIP Plan Elements.

CIP Plan Number	Project Name	Description	Funding	Timeline
P-AD-15	Property Acquisition	This project allows additional properties to be purchased as future opportunities arise, to meet existing and future park and open space demand. The city is also interested in providing a Lake Sammamish waterfront park, that would accommodate swimming, picnicking, and support facilities. The city owns three adjacent properties within Lake Sammamish shoreline jurisdiction, totaling 190 lineal feet of shoreline, which may be developed into a public park sometime in the future when funding sources allow.	$66,682,000 ($56,594,000 appropriated to date)	Ongoing
P-AD-27	Planning/Design for Existing and	The Parks and Community Services Department will prepare master	$5,112,000	Ongoing

CIP Plan Number	Project Name	Description	Funding	Timeline
	Future Park Facilities	plans and/or updates to existing master plans for park sites in response to changing needs, site conditions, and community issues. In some cases, master plans may be prepared for new park sites. Current initiatives include completion of master plans for the Meydenbauer Bay waterfront, Boeing/I-90 property, Bellevue Botanical Garden visitor center, Surrey Downs and Ashwood Park.	($3,394,000 appropriated to date)	
P-AD-34	Trail Development	This trail project will identify, design, build and sign "missing links" in or connecting to the Lake to Lake Greenway Trail, Richards Valley Trail and South Bellevue Greenway and Trail system connecting Lake Washington to Lake Sammamish and many of the city's major parks and open spaces. Connections and enhancements are planned for Meydenbauer Bay to Wilburton Hill, Mercer Slough to Wilburton Hill, Woodridge to Richards Valley, Richards Valley to Robinswood Park, Kelsey Creek to the Lake Hills Greenbelt, Coal Creek Park to Newport Hills, Sunrise Park to Lewis Creek and the South Bellevue Trail system.	$2,245,000 ($821,000 appropriated to date)	Ongoing

Additional projects not specifically listed in the city's 2009 CIP, but located along or adjacent to city-owned property, include:

Mercer Slough – Restoration along 112th Avenue SE

This restoration effort consists of the removal of an extensive stand of noxious Himalayan blackberry in order to create a park-like setting. A soft surface path and pedestrian bridge will cross a small creek, and native riparian trees, shrubs, and groundcover will be planted and monitored. Restoration efforts also include added complexity to the streambank and wetlands throughout the property.

West Kelsey Open Space – Revegetation Plan

Located east of Mercer Slough between I-405 and Kelsey Creek Park, the West Kelsey Open Space contains a segment of Kelsey Creek, two tributaries, and one wetland. A revegetation plan was developed to manage vegetation within the buffers of wetlands and streams in the Open Space, located on the south side of SE 8th Street between 121st

Avenue SE and Lake Hills Connector Road. The proposed project involves removing twelve existing trees, thinning an alder grove, and removing invasive weeds. Native plantings will in-fill areas where invasive plants are removed to increase plant diversity in the buffer thereby improving habitat. Large woody debris from the hazard trees and thinned alder grove will be left on-site for habitat value.

Chism Beach Park

As part of the master planning process, four concept redesign options were completed of the lower terrace and waterfront area of Bellevue's 15-acre Chism Beach Park. Plans include: a reinvigorated and reprogrammed sandy beach, play areas, 1,200 lineal feet of shoreline restoration, and interpretive opportunities. Several low impact development techniques including rain gardens, green roofs, and green walls have been included in the designs. The City of Bellevue is working to balance opportunities for habitat enhancement with the need for continued public beach assess.

Clyde Beach Park

Also part of the master planning process, concept design options are currently being developed for Meydenbauer Bay's Clyde Beach Park (The Watershed Company 2009). Design will include the removal of an old boat house and associated docks, and shoreline restoration and improved beach access for park users.

5 POTENTIAL PROJECTS

5.1 Recommended Projects

The following list of potential projects (Tables 5-8) is developed from opportunity areas identified within the *Shoreline Analysis Report*, collaboration and input from various city departments, and the city's current CIP list. This information is intended to contribute to improvement of impaired functions on public property. The majority of proposed projects are on public property; however, a number of projects are on private land. It is important to recognize that these projects represent potential ideas for voluntary restoration, and they are not required. The list of potential projects is further evaluated, prioritized, and conceptualized in Section 9 of this report.

Table 5. List of Recommended Projects along Lake Washington.

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
LW-1	Clyde Beach Park	Lake	Restore ~160 feet of armored shoreline and riparian zone using bioengineered solution to enhance ecological function. Plant native plants but maintain public beach access and general character of park.	Public

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
LW-2	Meydenbauer Beach Park	Lake	Implement Meydenbauer Bay Park Plan - Plan calls for the restoration of approx. 800 linear feet of shoreline currently armored, a 35% reduction of overwater coverage by removing a portion of the docks, enhancement of public access and recreation amenities, revegetation of over 4,000 s.f. and the daylighting of a native stream.	Public
LW-3	Meydenbauer Marina	Lake	Convert Meydenbauer Marina into a fish friendly marina by improving light penetration (install deck grating, remove large canopies or install windows to allow light through), reducing predator habitat (remove unnecessary piles), and improving water circulation (grated decking, pile size and quantity minimization, elevated pier decking, etc)	Public and Private
LW-4	Meydenbauer Creek	Stream	Restore creek outfall to the lake to improve fish and wildlife habitat - install LWD for in-stream stabilization and fish rearing habitat.	Private
LW-5	Chism Beach Park	Lake	Restore large section of shoreline by removing riprap, restabilizing shoreline using bioengineered solution, and planting native vegetation (up to ~1,200 linear feet). Maintain public beach access but focus park user activity to central location.	Public
LW-6	Burrows Landing, Just South of Chism Beach Park	Lake	Shoreline is small, approximately 45 feet wide. The immediate shoreline area contains an approximately 150 square foot planting area that could be enhanced along with ~23 linear feet of shoreline armoring improvements. Reduce pier impacts by reducing overwater cover through installation of deck grating on existing pier.	Public
LW-7	Sisters of Saint Joseph, South of Chism Beach Park	Lake	Opportunity to restore large section of shoreline (~600 feet long) by removing riprap, restabilizing shoreline using bioengineered solution, and planting native vegetation.	Private
LW-8	Chesterfield Beach Park- SE 25th St Street End	Lake	Restore shoreline ecological function across small, approximately 60 feet wide shoreline, ~30 feet of which could be improved by reducing shoreline armoring.	Public
LW-9	Enatai Beach Park	Lake	Limited opportunity to restore shoreline ecological function due to location of boathouse and swimming beach. However, the potential to remove or	Public

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
			minimize the impacts of shoreline armoring and improve nearshore native vegetation exists further north and under I-90.	
LW-10	Newcastle Beach Park	Lake	Opportunities to restore shoreline ecological functions include reducing overwater cover through installation of deck grating on existing pier, removing or minimizing the impacts of shoreline armoring, and improving nearshore native vegetation. Small wooden bulkhead near the wetland could be removed and shoreline restored.	Public

Table 6. List of Recommended Projects along Kelsey Creek/Mercer Slough.

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
MS-1	Mercer Slough at I-90	Stream	Remove creosote wall near I-90 (~250 feet long) - replace with something inert if necessary.	Public
MS-2	Mercer Slough	Stream	Remove invasive vegetation and replant with native trees and shrubs to improve overhanging vegetation along slough.	Public
MS-3	Mercer Slough-Bellefield Tributary and West Channel	Stream	Remove invasives and revegetate with native successional forest plants such as cottonwood, dogwood and willow with cedar, spruce, etc. where soils permit. Place LWD along edges and create off-channel habitat.	Private
MS-4	Mercer Slough - Bellefield Office Complex	Stream	Restore buffer, remove invasive vegetation and replant with native riparian species along Mercer Slough to provide dense overhead cover and shade to reduce heating. Develop and implement aquatic weed management plan.	Private
MS-5	Mercer Slough - Sturtevant Creek	Stream	Enhance confluence of Sturtevant Creek and Mercer Slough with LWD and native plants/ trees.	Private
MS-6	Kelsey Creek-Between I-405 and Lake Hills Connector	Stream	Between I-405 and the culverts under Lake Hills Connector (~1,700), install LWD to provide hydraulic refuge areas during peak flows, remove non-native vegetation and revegetate with native trees/shrubs, remove rip-rap.	Public
MS-7	Kelsey Creek	Stream	Knotweed, reed canarygrass, and	Public

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
	Park- 401 130th Pl SE		policeman's helmet removal and native replanting in Kelsey Creek Park Wetland, upstream of Lake Hills Connector. Initiate a reforestation program which includes wetland willow rehabilitation project & LWD on banks.	
MS-8	Kelsey Creek- South of SE 7th Pl	Stream	Acquire parcels just south of SE 7th along north side of the West Tributary and Kelsey Creek confluence and associated wetland buffer and replant riparian zone with native trees and shrubs.	Private
MS-9	West Tributary- Kelsey Creek Park and SE 7th Pl	Stream	Reduce invasive, non-native plants, replant with natives, install LWD and improve floodplain in lower West Tributary stream corridor through the undeveloped portion of Kelsey Creek Park, south of SE 7th Pl.	Public
MS-10	Richards Creek- Richards Road and Lake Hills Connector	Stream	At interchange of Richard's Road and Lake Hills Connector, modify existing culverts that are partial barriers by placing low-flow deflectors on multichannel box culverts to increase depth of low-flow channel. Reduce invasive, non-native plants, replant with natives, install LWD and reduce armoring in lower Richards Creek. Purchase parcels along the south side of Lake Hills Connector to protect hillside springs/seeps and forest parcels (PINs 0424059002 and 0424059114).	Public

Table 7. List of Recommended Projects along Lake Sammamish.

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
LS-1	West Lake Sammamish Parkway	Lake	West Lake Sammamish Parkway stormwater LID program - improve water quality from WLSP outfalls.	Public and Private
LS-2	West Lake Sammamish-Former Spady property	Lake	Restore former Spady property and other two adjacent city owned parcels along West Lake Sammamish Parkway by reducing overwater coverage, planting native shoreline vegetation and adding large wood along the shoreline. Public access needs to be a part of this project. Total shoreline length is ~200 feet and includes two piers. One pier could be removed. Look to coordinate with eventual master plan.	Public
LS-3	West Lake Sammamish	Lake	Eurasian water milfoil is widespread throughout Lake Sammamish – control efforts are needed along city owned shorelines.	Public
LS-4	Vasa Creek	Stream	Purchase Boscole Property along north side of Vasa Creek & Vasa Park. Open/daylight Vasa Creek through private property. Position LWD in Vasa Creek incised channel sections. Revegetate stream shoreline with native trees and shrub cover (>4,000 s.f.).	Private
LS-5	Vasa Park	Lake	Vasa Park restoration of shoreline and native vegetation, including adjacent King County pump station site (~700 feet of total shoreline).	Private
LS-6	West Lake Sammamish	Lake	Develop plan to work with private landowners who live adjacent to creek outfalls (whether piped or not) and encourage and plan for riparian enhancement to these openings for juvenile salmon rearing habitat.	Private

Table 8. List of Recommended Projects along Phantom Lake.

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
PL-1	Phantom Lake	Lake	Initiate a reforestation program @ Phantom Lake which specifically identifies the area south of the main park and Robinsglen. Revegetation area is well over 4,000 square feet	Public
PL-2	Phantom Lake Inlet Channel	Stream	Phantom Lake inlet channel - create > 100 feet of stream meanders, install LWD, replant with native veg (>4,000 s.f.), reduce	Private

Ref. Number	Location	Lake or Stream Project	General Description	Land Ownership
			shoreline hardening and improve overall habitat complexity.	
PL-3	Phantom Lake	Lake	Acquire lake front property as it becomes available & set-up conservation easement along shoreline.	Private
PL-4	Larsen Lake Outlet Channel	Stream	Improve habitat functions and retain or improve flood control functions in outlet channel (~500 feet) at Larsen Lake. Restore riparian vegetation (>4,000 s.f.) in the Larsen Lake stream channel and initiate a reforestation program at Larsen Lake	Public
PL-5	Lake Hills	Lake	Develop a Street Edge Alternatives (SEA streets) program for Bellevue with a pilot project. Rehabilitate the neighborhood drainage in the SE 9th street area using infiltration for flood control similar to the "C" street model	Public
PL-6	Lake Hills Greenbelt-Ranger Station	Lake	Approximately 500 feet north of the Lake Hills Greenbelt Ranger Station is a constructed open water pond that helps retain sediments and control flood flows through the greenbelt. The pond is dominated by invasive species on its banks and would benefit from restoration and enhancement.	Public

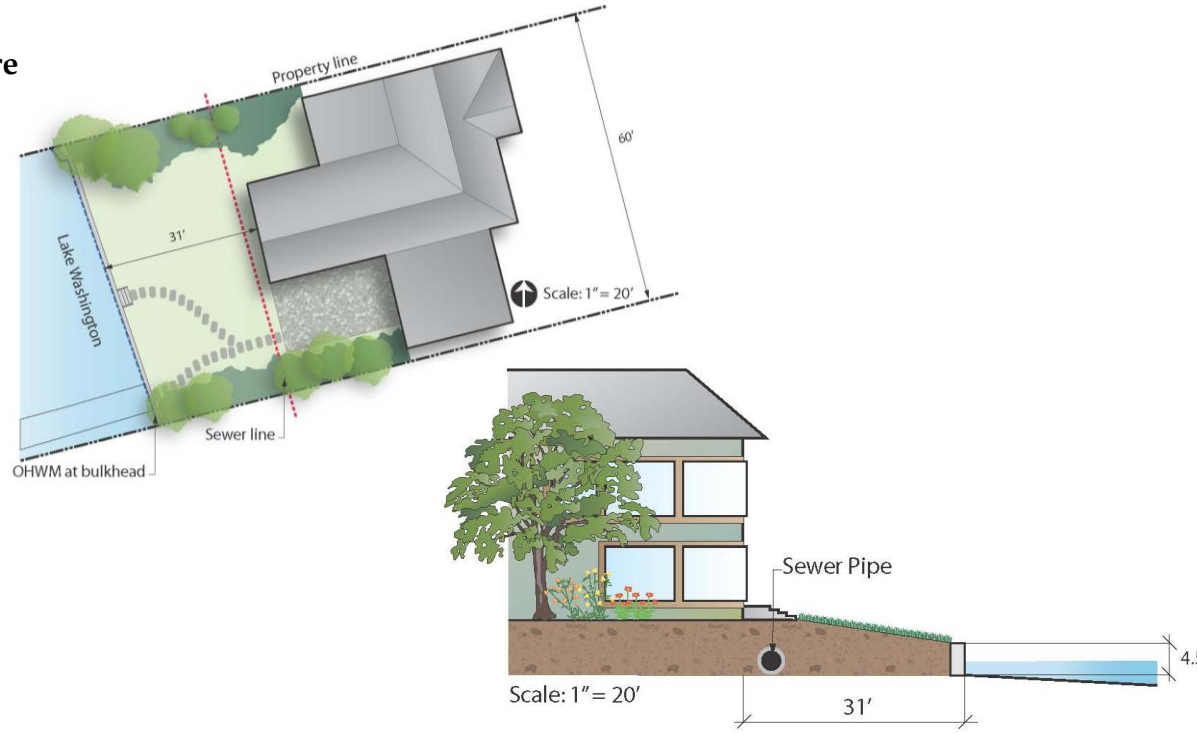
5.2 Recommended Projects – Private

The city's Shoreline Master Program does not require restoration on private properties; however, there are many opportunities for property owners to restore or enhance shoreline functions on a voluntary basis. 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 Sammamish or Lake Washington.

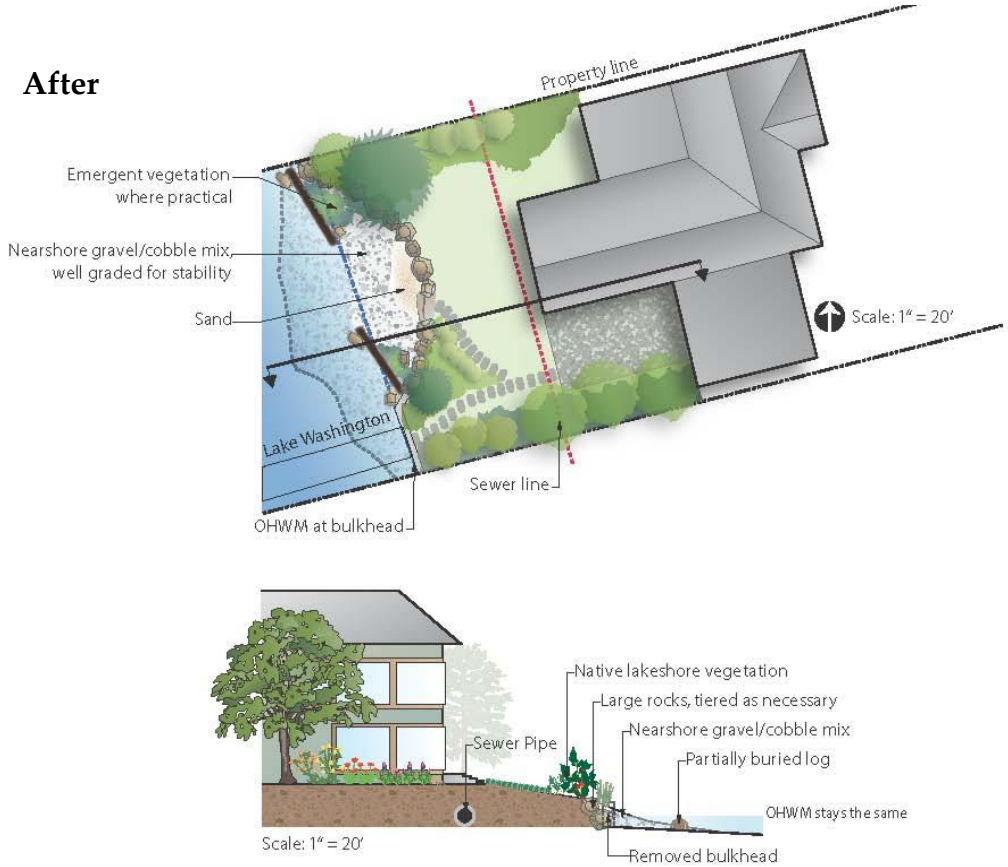
An example of how shoreline armoring might be reduced on some lots along the city's residential areas is depicted below (Figure 3). This example displays before and after images of a typical lot in which the existing bulkhead is partially pulled back to create a shallow cove beach combined with natural materials. This example combines the effort to improve habitat conditions with improved access and aesthetics.

Similar opportunities for ecological improvements exist for the residential properties on Phantom Lake that exist for properties on Lake Sammamish or Lake Washington. However, given the size of the waterbody and surrounding basin, the Phantom Lake properties have much greater potential per parcel to provide ecological benefit. Mechanisms such as reduction or modification of shoreline armoring, minimizing overwater cover, providing native shoreline vegetation, reducing or eliminating applications of chemicals, pesticides, and herbicides, and reducing impervious surfaces, are all applicable measures to achieve improvements in shoreline ecological function for Phantom Lake. Similar opportunities would also apply to any undeveloped lots and city owned parcels. The associated wetlands surrounding both Phantom and Larsen Lakes could benefit from the removal of invasive vegetation and replanting with native vegetation.

Before



After



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

Figure 3. Example of shoreline armor reduction.

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

6 PARTNERSHIPS

6.1 Water Resource Inventory Area (WRIA) 8 Participation

Bellevue was one of 27 members of the WRIA 8 Salmon Recovery Council, which participated in financing and developing the *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* (WRIA 8 Steering Committee 2005). The Chinook Salmon Conservation Plan includes the Bellevue's implementation commitment in the form of City Council Resolution No. 7214, approved 27 June 2005 (Appendix A).

The city is taking important steps towards furthering the goals and objectives of the *WRIA 8 Chinook Salmon Conservation Plan* through preparation of the *Shoreline Analysis Report* that includes an inventory and characterization of City of Bellevue shorelines, and by developing this Shoreline Restoration 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 (*Chinook Salmon Conservation Plan*) and as one source of best available science for future projects, ordinances, and other appropriate local government activities." Resolution No. 7214 also states that the city will use the "comprehensive list of actions, and other actions consistent with Plan (*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.

To review, the WRIA 8 Steering Committee's mission and goal statements state that the Chinook Salmon Conservation Plan shall:

1) Recognize that local governments are key implementing entities for the plan, because of their responsibilities for land use.
2) Direct most future population growth to already urbanized areas, because new development has greater negative effects on hydrology and ecological health of streams in rural than in urban areas.
3) Create incentives for behavior that would support Chinook Salmon Conservation Plan goals.

4) Be coordinated with the Growth Management Act, local and regional responses to the Clean Water Act, other environmental laws and past/current planning efforts.

The Chinook Salmon Conservation Plan presents a start-list that attempts to compile the land use, site-specific habitat protection and restoration projects, and public outreach and education recommendations into a single strategy list which focuses watershed priorities yet also provides a manageable number of actions (Table 9). A detailed comprehensive action-list for potential restoration and protection projects is found in chapter 11 of the Chinook Salmon Conservation Plan and is provided for the Kelsey Creek subarea in Appendix B of this Shoreline Restoration Plan. Conservation priority and technical priority actions identified for WRIA 8 chinook salmon habitat within Lake Washington and Lake Sammamish included in the Chinook Salmon Conservation Plan are as follows:

- Reduce predation on juvenile migrants by providing increased rearing and refuge opportunities.
- Restore shallow water habitats and creek mouths for juvenile rearing and migration.
- Protect existing levels of forest cover, soil infiltrative capacity and wetland areas, and minimize impervious areas, to maintain watershed function and hydrologic integrity (especially maintenance of sufficient base flows) and protect water quality.
- Protect and restore riparian function, including revegetation, to provide sources of large woody debris to improve channel stability, contribute to pool creation, to reduce peak water temperatures.
- Protect and improve water quality to prevent adverse impacts from fine sediments, metals (both in sediments and in water), and high temperatures to key chinook life stages.
- Adverse impacts from road runoff should be prevented through stormwater best management practices and minimization of number and width of roads in the basin. Opportunities to retrofit existing roadways with stormwater treatment best management practices should be pursued. Road crossings should be minimized to maintain floodplain connectivity.
- Provide adequate stream flow to allow upstream migration and spawning by establishing in-stream flow levels, enforcing water rights compliance, and providing for hydrologic continuity.

Table 9. The Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan Action Start-List for Lake Washington and Lake Sammamish, and Status of Implementation in the City of Bellevue.

Action Item	Bellevue 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 proposed SMP includes… *COMMENT: Statement needs to be completed at the end of the SMP development. Needs statement regarding incentives and code flexibility offered to encourage salmon friendly shoreline design. The existing code contains much of this emphasis, but we will need to confirm that the language remains or is modified to meet this action item.* The Parks and Community Services Department is currently working to implement shoreline restoration at two Lake Washington parks.
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. The city updated its code enforcement policies in ….
Discourage construction of new bulkheads; offer incentives (e.g., provide expertise, expedite permitting) for voluntary removal of bulkheads, beach improvement, riparian revegetation.	Code provides zoning and development regulations for the use and development of land within the city. The proposed SMP includes …. *COMMENT: Statement needs to be completed at the end of the SMP development. Needs statement regarding code language which discourages new bulkheads and what incentives are offered to encourage beach restoration. The existing code contains much of this emphasis, but we will need to confirm that the language remains or is modified to meet this action item.*
Support joint effort by NOAA Fisheries and other agencies to develop dock/pier specifications to streamline federal/state/local	The city has been coordinating on a regular basis with state and federal agencies to help develop consistent pier and bulkhead design

Action Item	Bellevue Implementation
permitting; encourage similar effort for bulkhead specifications.	standards, including coordination with adjacent jurisdictions.
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.	The city has implemented this Action Item through development of its current Critical Areas Ordinance as well as the current update of the Shoreline Master Program, both in public outreach conducted during the update process and in the pier regulations. The city has hosted workshops for lakeshore owners which has highlighted the value of eco-friendly pier construction. This includes King County Lakeshore Living workshops.
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.	The proposed SMP includes… *COMMENT: The city will need to complete this statement at the completion of the SMP development. This may or may not be applicable depending upon city direction.*
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. As mentioned above, the city has hosted workshops on this topic in the past (Lakeshore Living). This work is expected to continue in the near future.
Protect and restore water quality in tributaries and along shoreline. Restore coho runs in smaller tributaries as control mechanism to reduce the cutthroat population. Reconnect and enhance small creek mouths as juvenile rearing areas.	
Address water quality and high flow impacts from creeks and shoreline development through National Pollutant Discharge Elimination System (NPDES) Phase 1 and Phase 2 permit updates, consistent with WDOE's 2001 Stormwater Management Manual, including low impact development (LID) techniques, on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into the lakes.	To protect water quality, Bellevue manages stormwater runoff in a number of ways. The city follows "best management" practices and operates under a NPDES Phase II Municipal Stormwater Permit issued by Ecology in January 2007. This permit is a requirement of the Federal Clean Water Act. The best management practices in the permit are collectively referred to as the NPDES Stormwater Management Program. 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.

Action Item	Bellevue Implementation
Encourage LID through regulations, incentives, education/training, and demonstration projects.	The City's Comprehensive Plan contains policies which promote LID. The city believes, "LID and green buildings can contribute to long-term environmental sustainability." Several proposed city Park projects have incorporated green building and LID techniques into their design (i.e. Chism Beach Park).
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 (No. 5680) in 2006, and published a *Critical Areas Handbook* as a tool to educate property owners about critical areas and city regulations. The city's non-regulatory measures and incentives, critical area regulations, city clearing and grading regulations, and stormwater regulations provide protection of critical area functions and values.
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 Mercer Slough Environmental Learning Center was designed and built to have minimal impact on the environment. The complex has earned a King County "Excellence in Building Green Award." Key features include special gutters, porous concrete and catchment ponds, green roofs and renewable, recycled, local materials, along with sustainably harvested wood were used in the construction of the buildings. The city has applied for a silver LEED (Leadership in Energy and Environmental Design) rating.

6.2 Lake Sammamish Kokanee Work Group Efforts

The Lake Sammamish Kokanee Work Group is a multi-stakeholder and inter-governmental group focused on developing and implementing a strategy to conserve the native kokanee population. Historically, kokanee used extensive areas of the Lake Washington watershed but are now limited to a few tributaries of Lake Sammamish. The Work Group's current focus is documenting their conservation strategy, assembling a prioritized list of conservation projects, and developing a project proposal for funding in the current grant process (D. St. John, e-mail communication, April 9, 2009). Active members of the group include watershed residents and representatives of watershed jurisdictions (Bellevue, Issaquah, Redmond, Sammamish, and King County), WDFW, Trout Unlimited, and the U.S. Fish and Wildlife Service (D. St. John, letter, January 9, 2009).

The ultimate goal of the Work Group is to improve the health of the native kokanee population such that it is viable and self-sustaining and supports fishing opportunities The Work Group is developing priorities to support achieving these goals. Draft priorities currently under consideration are illustrated by these examples:

- Prevent the near term extinction of the population.
- Correct discrete habitat conditions that are directly causing mortality or reducing productivity.
- Protect existing intact habitat areas at risk of damage or conversion.
- Improve our certainty that we are implementing the highest priority and effective restoration, protection, or conservation action.
- Protect or improve ecological processes that form or sustain habitat currently used by late run kokanee at any life stage.
- Protect or improve ecological processes that form or sustain habitat that currently is not used by kokanee at any life stage but could be necessary to sustain a viable population.
- Build and maintain public awareness of kokanee conservation needs.
- Build and maintain public support for implementation of high priority actions.

A near term project list will primarily focus on creeks that currently support kokanee spawning, including Lewis Creek, which has its headwaters in the City of Bellevue. In the long-term, the Work Group may identify opportunity areas within the city's Lake Sammamish shoreline jurisdiction, including Vasa Creek and lakeshore areas that are identified as ongoing or potential spawning areas (D. St. John, e-mail communication, April 9, 2009). Over the much longer term, the Work Group may investigate kokanee restoration opportunities within the Lake Washington drainage (D. St. John, e-mail communication, April 9, 2009).

While the investigation of the population's decline continues, Work Group members have been taking actions vital to kokanee recovery, including:

- King County has made improvements to fish passage on streams that flow beneath the East Lake Sammamish Trail.
- The City of Issaquah has made improvements to habitat along Lewis Creek, while the City of Sammamish has been doing similar work on Zaccuse Creek.
- Trout Unlimited has been operating a kokanee fry trap that provides managers with an accurate count of fish production on Lewis Creek.
- WDFW staff have performed spawner surveys and are working with biologists to develop protocols for a kokanee supplementation program, which would be housed at the Issaquah Hatchery.

For more information about the Lake Sammamish Kokanee Work Group, contact David St. John, Government Relations Administrator at the King County Department of Natural Resources and Parks, at (206)296-8003.

6.3 Adopt-A-Stream Foundation Efforts

The Adopt-A-Stream Foundation's (AASF) Fish & Wildlife Division was created to address degraded stream and wetland ecosystems. AASF has surveyed several

watersheds and successfully identified areas with erosion, fish passage barriers, pollution sources, and other associated problems. Habitat restoration has included culvert repair and replacement, streambank stabilization, stream channel reconfiguration, and the placement of in-stream fish ladders and large woody debris (LWD).

To restore habitat, the AASF works with many partners, including several government agencies, local jurisdictions, non-profit environmental and community organizations, as well as private landowners. Many of the AASF projects are funded through Ecology and National Fish & Wildlife Foundation grants. Additionally, AASF can be contracted for site specific restoration.

Education and Outreach

- *Streamkeeper Academy*
  AASF achieves its mission of teaching people to become stewards of their watersheds through a variety of educational programs and publications which fall under the umbrella name of *Streamkeeper Academy*. AASF staff continues to develop programs and create new educational and outreach opportunities for young and old, students and professionals alike.
- *Northwest Stream Center*
  The Northwest Stream Center (near Everett) is a regional environmental learning facility that provides "basic training" in watershed ecology and stewardship.

Additional information about AASF's programs and projects can be found online at http://www.streamkeeper.org.

6.4 Cascade Land Conservancy Efforts

Cascade Land Conservancy (CLC) conserves land in the central Puget Sound region. They are committed to "protecting important natural spaces in urban neighborhoods and rural communities, along precious rivers and streams, and across the foothills of the Cascades" (CLC website). The CLC also works to conserve working farms and forests. Their strategies range from land purchases and donations, to conservation easements and ownership agreements that use innovative and creative tools and methods to conserve. The CLC goal is to "maximize the ecological value of land while meeting the needs of landowners."

The CLC has completed 163 projects since 1989 to conserve nearly 150,000 acres in the Puget Sound region and has played an important role in thousands more (CLC website). The CLC has completed 71 projects and protected approximately 99,657 acres within King County (CLC website). About nine years ago, the CLC acquired an approximately 1.5-acre property with a conservation easement within the City of Bellevue, but outside

of shoreline jurisdiction (L. Malone, e-mail correspondence, April 8, 2009). Each protected property requires consistent and regular monitoring, followed by active maintenance or management to assure that no human health and safety issues exist, there are no encroachments, and the conservation values of the land remain protected forever.

More information about the CLC can be found online at http://www.cascadeland.org.

6.5 Eastside Audubon Society Efforts

Formed in 1980, the Eastside Audubon Society is dedicated to the appreciation, study and conservation of birds and their habitats. Eastside Audubon's service area includes Bellevue, Bothell, Kirkland, North Bend, Redmond, Woodinville and East King County. Eastside Audubon supports local Greenspace and Parks initiatives, protection of threatened and endangered species, community environmental education projects for adults and children, and is active in several local and regional environmental issues and projects.

Eastside Audubon volunteers monitor monthly permitting bulletins issued by the city to ensure that community development is supported by the best available science and is sensitive to Audubon's mission, "to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity" (A. McCormick, personal communication, April 13, 2009). Volunteers have also been instrumental in preserving many areas for birds, including Lake Hills Greenbelt in Bellevue, Juanita Bay Park in Kirkland, Marymoor Park in Redmond and Hazel Wolf Wetlands in King County. In 2008, the Bellevue Golf Course was recognized for their environmental efforts by the Audubon Society and certified as a sanctuary for wildlife by the Audubon Cooperative Sanctuary Program for Golf Courses. Located at 5500 140th Ave. NE, the golf course features increased plantings of native vegetation for birds and wildlife and enhancement of natural corridors to other habitat areas.

Citizen Science

The National Audubon Society website states that "citizen science is about learning, empowerment, building a constituency, as people count birds for conservation. Audubon's vision is to engage citizens in asking questions about their environment, and to help them gather information to answer questions that they and professional biologists are asking." Volunteers and members collect data each spring and fall during the Eastside Audubon Society's bird migration census and Christmas bird count. The goal is provide those responsible for land management with data for making land use decisions that takes wildlife into account (Eastside Audubon Society website).

Education and Outreach

Eastside Audubon offers monthly presentations, workshops, and field trips for chapter members and the public. They also offer school programs for Eastside classrooms, scholarships for children to attend summer camp, scholarships for college students, and grants for teachers to be used in classroom programs.

More information about the Eastside Audubon Society and their upcoming events can be found online at http://www.eastsideaudubon.org.

6.6 Mountains to Sound Greenway Trust Efforts

Plans for the Mountains to Sound Greenway (Greenway) were created in 1990 by local citizens to maintain "accessible landscape of forests, wildlife habitat and open spaces as breathing room for people, and a place of incomparable beauty, history and outdoor recreation for their children and grandchildren" (Greenway website). Today, the Greenway stretches along 100 miles of Washington's Interstate 90 from the waterfront in Seattle to the edge of desert grasslands in Central Washington. This stretch of highway is a National Scenic Byway with much of the landscape in public ownership. The Greenway includes communities and historic towns, working farms and forests, spectacular alpine scenery, wildlife habitat, campgrounds, trails, lakes and rivers (Greenway website).

Based in Seattle, the Mountains to Sound Greenway Trust (Trust) was founded in 1991 as a nonprofit organization that helps protect these lands and preserve them for public benefit. The Trust encourages public land acquisition and environmental stewardship while providing environmental education and events. The Trust also works to "unite hikers, corporate executives, government leaders, environmentalists and community advocates who share a vision of careful planning for growth balanced by preservation of forested open spaces, clean air and water, for ourselves and for future generations" (Greenway website).

The Trust is not currently implementing any restoration projects within the city, yet they are working towards developing a partnership and are eager for future opportunities within Bellevue's watershed (T. Bell, personal communication, April 9, 2009). The Trust's Lands Program is hopeful that the city will acquire new lands for open space and the funds needed for Bellevue Greenways and Open Space Projects (M. Sollitto, e-mail communication, April 9, 2009). Trust education programs include "classroom presentations and field trips to 5th - 10th grade students that focus on land use issues, biosolids, analyzing forest/stream environments and the soil/water/forest connection" (S. Kentch, e-mail communication, April 10, 2009). The Education Program also participates in special events at the Mercer Slough Environmental Education Center such as Bellevue Natural Resource Week and the Envirothon (S. Kentch, e-mail communication, April 10, 2009).

More information about the Mountains to Sound Greenway and the Trust can be found online at http://www.mtsgreenway.org.

6.7 Save Lake Sammamish Efforts

Save Lake Sammamish (SLS) is "a non-profit Washington corporation established to promote the water quality of Lake Sammamish and its watershed by increasing community awareness of the lake and its watershed and fostering greater public awareness of the environmental and wildlife concerns relating to Lake Sammamish and its watershed and any potential development thereon" (SLS website). SLS promotes community awareness by making press releases about environmental issues and publishing newsletters that are delivered to over 3,000 Puget Sound homes.

More information about Save Lake Sammamish can be found online at http://www.scn.org/savelake.

6.8 Trout Unlimited Efforts

The mission of the Washington Council of Trout Unlimited and the Icicle Chapter is to, ""Conserve, Protect and Restore" cold water fisheries, their watersheds and ecosystems, as a means of maintaining our quality of life!" Trout Unlimited has been on the forefront of fisheries restoration work at the local, state and national levels. Their website explains that they remain committed to applying "the very best information and thinking available" to conservation work and have developed cutting-edge tools to help direct efforts toward those fish populations most in need of protection or restoration.

Trout Unlimited's Bellevue/Issaquah chapter has concluded that the fish that needs the most attention in the basin is the Lake Sammamish Kokanee. They have adopted a new slogan to "Help to save our little red fish!" Trout Unlimited believes the best way the general public can help is to adopt- a-kokanee.

<u>Adopt-A-Kokanee</u>
Beginning in February of 2009, the Bellevue/Issaquah Chapter of Trout Unlimited in cooperation with the King Co. Department of Natural Resources, WDFW and the U.S. Fish and Wildlife Service will begin a research program by placing acoustical tags on native kokanee, cutthroat trout and northern pike minnow to track their movement throughout the Lake Sammamish watershed utilizing listening stations throughout the lake and its tributaries. This research will provide vital information and a better understanding of the habits of these fish throughout their lives.

More information about Trout Unlimited and their restoration efforts can be found online at http://www.tu-bi.org.

7 EDUCATION AND OUTREACH

With 54 percent of adult residents having achieved a Bachelor's Degree or higher, the City of Bellevue is one of the most highly educated communities in the Nation. The city is also increasingly diverse, with almost one in four Bellevue residents born outside the United States (according to the 2000 federal Census). City residents enjoy high levels of civic engagement in community groups, volunteer associations, businesses and individuals work with city staff to identify and achieve community goals.

The City of Bellevue's community programs and services respond to social concerns by focusing on enhancement, prevention, and intervention. Special emphasis is placed on providing services and programs for the youth, the senior citizens, the disadvantaged, and those with disabilities. The following city policies help keep residents connected to their natural environment.

POLICY PA-39. Offer programs that utilize the unique resources and variety of indoor and outdoor facilities within the park system.

POLICY PA-40. Provide a nature interpretation program to increase the community's awareness, understanding, and appreciation of natural areas.

7.1 Utilities – Education and Outreach

Stream Team

As a city-organized volunteer-based effort, the Stream Team focuses on teaching citizens about local streams, and fish and wildlife habitat in a variety of ways. Volunteering efforts may include planting stream corridors with native trees and shrubs, observing streams for returning adult salmon, helping to collect stream bug samples (macroinvertebrate) for water quality monitoring, participating in a habitat monitoring project, or by inviting a Stream Team staff member to speak at your school or club. Stream Team volunteers play a vital role in preserving fish and wildlife habitat and are able to be a part of the following volunteer groups: Salmon Watchers, Peamouth Patrol, Earth Day/Arbor Day, and Macroinvertebrate Workshop and Field Collection. Contact the Stream Team at (425) 452-5200 or e-mail streamteam@bellevuewa.gov to receive volunteer information

Water All Around Us

City of Bellevue Utilities produces a guidebook to Bellevue's streams, lakes, wetlands, watersheds, salmon migration and other information. To receive a copy, call the Utilities Department at (425) 452-6932.

Pollution Prevention

Outreach efforts include storm drain marking, articles in local newspapers, display and participation at community events, local school programs, and special outreach campaigns. The city is also part of the "Puget Sound Starts Here" campaign (www.pugetsoundstartshere.org) with a website and advertising to teach residents simple ways they can help prevent pollution every day.

7.2 Parks and Community Services – Education and Outreach

Mercer Slough Environmental Education Center

The Mercer Slough Environmental Education Center (MSEEC) is located in the heart of urban Bellevue on a biologically diverse 320-acre wetland nature park. The MSEEC is a collaborative effort between the city and the Pacific Science Center that brings year-round education and interpretation of freshwater ecosystems, wetland ecology, environmental stewardship and the effect of urban development to adults, youth and families. The MSEEC is a keystone of interpretive facilities and programs for the city that offers interpretive displays, an interactive library for all ages, an artist's nook, and a community building. Visitors to MSEEC can view the slough, surrounding wetlands, and wildlife from the tree house, elevated boardwalk systems, and the many viewing overlooks.

The MSEEC has earned a King County "Excellence in Building Green Award" through its design and construction that had minimal impact on the environment. Key features include special gutters, porous concrete and catchment ponds that slow and filter water runoff at the site, green roofs that help reduce impermeable surfaces and warming around buildings, and renewable, recycled, local materials, along with sustainably harvested wood were used in the construction of the buildings. The city has applied for a silver LEED (Leadership in Energy and Environmental Design) rating.

Event and environmental education program information can be found online at http://www.pacsci.org/slough/index.html.

7.3 Other Programs for Education and Outreach

The *Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan* (2005) 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 E.

8 TIMING, COMMITMENT, AND PERFORMANCE MEASUREMENT

As previously noted, the city's shoreline area is occupied by multi- and single-family residences, public recreation/open space areas, marinas/yacht clubs, and some professional office areas. A number of opportunities exist to improve shoreline ecological functions through the promotion of restoration and healthy practices at all levels, from single-family properties to large-scale marinas. As discussed above, there are numerous governmental and non-governmental groups interested and participating in the protection and restoration of ecological functions of Bellevue's shorelines. Continued improvement of shoreline ecological functions requires a focused and comprehensive watershed-level approach, which integrates upland and shoreline projects and programs.

The following table (Table 10) outlines 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 10. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Schedule	Funding Source or Commitment
City Programs/Projects		
Utilities – Stream Team	Ongoing	Currently, staff time and materials are utilized to coordinate volunteer efforts to monitor streams in the fall and spring.
Utilities - Stormwater Planning and Other Programs	Ongoing	Currently, staff time, materials and an unspecified amount of funding support stormwater planning studies and projects. The city currently follows their *Draft 2009 Stormwater Management Program*, best management practices, operates under a NPDES Phase II Municipal Stormwater permit and reports annually to Ecology.
Parks & Community Services	Ongoing	Currently, staff time, materials, city funding and various grants support these programs.

Restoration Project/Program	Schedule	Funding Source or Commitment
Public Education / Outreach	Ongoing	Currently, staff time, materials and an unspecified amount of funding support public education and outreach efforts. City policies help keep residents connected to their natural environment and 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. On-going and future education efforts should be coordinated with the city and partnering agencies, including funding sources (grant funding, monetary donations, and volunteer hours).
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.
Partnerships		
WRIA 8 Participation	Ongoing	The city is an active member of the WRIA 8 Forum. Membership at this time entails a commitment of staff time.
Lake Sammamish Kokanee Work Group	Ongoing	Bellevue is an active member of the Work Group. The city makes a substantial commitment of staff time towards finalizing a Work Group strategy, prioritizing conservation projects and seeking funding for project/program implementation.
Adopt-A-Stream Foundation	As funds and opportunity allow	The city may partner or contract with this organization on future restoration projects or education/outreach efforts. The city does not have authority over or a formal relationship with the Adopt-A-Stream Foundation.
Cascade Land Conservancy	As funds and opportunity allow	The city may partner with this organization on future restoration projects or education/outreach efforts. The city does not have authority over or a formal relationship with the Cascade Land Conservancy.
Eastside Audubon Society	As volunteer time and opportunity allow	Eastside Audubon will continue to be an active participant in the local community, providing education/outreach opportunities for the public. The city does not have authority over or a formal relationship with the Eastside Audubon Society.
Mountains to Sound Greenway Trust	As funds and opportunity allow	The city does not have authority over or a formal relationship with the Trust. Currently, the Trust is working towards developing a partnership with the city and is eager to address conservation and education/outreach opportunities within Bellevue.
Save Lake Sammamish	As funds and opportunity allow	The city does not have authority over or a formal relationship with this organization. Save Lake Sammamish promotes community awareness about environmental issues and conservation efforts within Bellevue.

Restoration Project/Program	Schedule	Funding Source or Commitment
Trout Unlimited	As funds and opportunity allow	This organization is an active member of the Lake Sammamish Kokanee Work Group and is currently working to raise money to support research and other conservation efforts surrounding Lake Sammamish Kokanee. The city does not have authority over or a formal relationship with this organization.

8.1 Performance Measurement

In order to document progress toward the goals and objectives of the Shoreline Restoration Plan, city planning staff should keep a record of all development activity, including exemptions, within shoreline jurisdiction, with a minimum level of detail that includes date, location, permit type issued, project description, impacts, mitigation (if any), and monitoring outcomes as appropriate. Specific to projects including restoration and/or mitigation, particular data measures should document changes that affect the objectives of this restoration plan (outlined in Section 2.1).

As discussed in the introductory section, the Shoreline Master Program Update and, by extension, the Restoration Plan are to be put in place to ensure no net loss of shoreline ecological function over time. Performance measures will provide a sense of the activities contributing to shoreline changes. In some cases, these performance measures may be intimately linked with ecological functional performance, such that they are sufficient to assess changes in shoreline function. In other cases, specific functional indicators (e.g., water quality, hydrography, benthic indicators of biotic integrity (BIBI)) may provide a better synthesis of the cumulative effects of actions on ecological functions. In order to effectively measure functional performance, performance indicators should be identified, consisting of a unit of measure and a baseline point against which to measure progress. The identification of specific indicators and baseline levels of comparison exceeds the scope of the Restoration Plan, but could be developed with additional resources.

Below, performance measures, ecological functions, and where applicable, functional indicators are associated with the objectives identified in Section 2.1 of this report.

Objective A. *Improve shoreline ecological functions by managing the quality and quantity of stormwater runoff, consistent at a minimum with the latest WDOE Stormwater Management Manual for Western Washington. Make any additional efforts to meet and maintain state and county water quality standards in tributary streams.*

Measures include but are not limited to 1) the volume of additional stormwater detention capacity; 2) changes in the square footage of impervious surfaces, and 3) the

square footage of rain gardens, bioswales, and other Low Impact Development (LID) tools installed. These measures are well suited as indicators of changes associated with development, but since stormwater quality and quantity is affected by a broad range of actions, direct monitoring of water quality and quantity at various points around the City may provide a more comprehensive synthesis of how cumulative changes across the City impact water quality and quantity.

Objective B. *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.*

The performance measure would document the change in square footage of overwater and in-water structures. A reduction in square footage would occur when overwater structures are removed or when decking is converted to a grated surface. Since overwater cover is directly related to nearshore shading of aquatic vegetation and fish habitat, the measured change in overwater and in-water structures would be well suited as an ecological indicator, as well as a performance measure.

Objective C. *Identify hardened and eroding lakeshores and streambanks, and improve to the extent feasible with bioengineered stabilization solutions.*

In order to capture the total change in armoring, the linear feet of shoreline stabilization installed using a hard engineered approach (rip rap or bulkhead), linear feet of shoreline stabilized using a bioengineering approach, and linear feet of shoreline stabilization removed should be documented as performance measures. Changes in shoreline armoring will influence several ecological processes and functions, most notably, sediment transport processes and fish and wildlife habitat. The ratio of armored to bioengineered or unarmored shorelines could serve as an indicator of ecological function.

Objectives D & E. *D) Increase quality, width and diversity of native vegetation in riparian areas to improve fish and wildlife habitat by providing food, nest sites, shade, perches, and organic debris. E) Control and reduce populations of non-native aquatic and riparian vegetation that are harmful to native vegetation or habitats.*

Performance measures for these two frequently interrelated objectives would identify the square footage of native vegetation planted, removed, or maintained in riparian areas, as well as the area of non-native aquatic and riparian vegetation removed. Native terrestrial and aquatic vegetation are critical to providing foraging, nesting, and refuge habitat for native fish and wildlife. The width and quality of native shoreline and upland vegetation also influences the extent to which stormwater is naturally filtered prior to entering surface water of creeks and lakes. Since native riparian vegetation is associated with improved water quality and healthy macroinvertebrate populations, the

composition of benthic macroinvertebrates could be used as in indicator of ecological function.

Objective F. *Reconnect and enhance small creek mouths as juvenile salmon refuge and rearing areas.*

Any changes to small creek mouths should be documented. Small creek mouths provide important and unique habitat areas for juvenile salmon. Performance indicators could be based on specific data on water depths and connectivity. This level of specificity may be feasible given the limited number of small creek mouths within shoreline jurisdiction.

Objective G. *Improve stream ecological functions by eliminating old and preventing new fish passage barriers.*

This measure would document the number of fish passage barriers corrected, as well as any new passage barriers that develop. The ecological significance of fish passage barriers is generally related to the potential habitat area upstream of the barrier. For example, a barrier located at the downstream end of a large river system would have a greater impact on fish passage than a barrier in a headwater stream with little potential habitat above it. Therefore, in addition to the number of barriers removed, the length of stream or area of habitat made accessible is also a useful indicator of ecological function.

Objective H. *Educate the property owners in the shoreline zone and the remainder of the city about the impacts of land management practices and other unregulated activities (such as vegetation removal, pesticide/herbicide use, car washing) on fish and wildlife habitats.*

Progress toward this objective can be challenging to measure because public education can occur through many different avenues (e.g., workshops and educational events or everyday experiences and encounters with neighbors). Education is meant to encourage the public to voluntarily engage in ecologically beneficial or lower impact activities. Any of the above measures and indicators would also provide information on progress property owner willingness to make changes that will benefit shoreline ecological functions. An annual survey of landowner attitudes could also provide a more direct measure of public awareness of ecological concerns.

Information on any performance measures and/or functional indicators should be collected in such a way that a report can be produced at some later date with minimal manual research into hard copy permit files. The report should also outline implementation of various programs and restoration actions (by the city or other groups) that relate to watershed health

The report should be assembled to coincide with Comprehensive Plan updates and may 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*. In the long term, the city should be able to demonstrate a net improvement in the City of Bellevue's shoreline environment.

9 Restoration Prioritization and Concept Development

This *Shoreline Restoration Plan* includes goals, policies, current and ongoing actions and recommendations for restoration of impaired shoreline ecological functions which are designed to achieve overall improvements in shoreline ecological functions over time. Through prioritization of restoration opportunities, a balance is found that matches Bellevue's ecological goals with a variety of site-specific constraints.

Briefly restated, the city's environmental protection and restoration goals include 1) balancing shoreline restoration with public access and recreation opportunities, 2) protecting watershed processes to achieve improved ecological functions over time, and 3) protecting fish and wildlife habitat. Constraints specific to Bellevue include a highly developed residential shoreline along Lake Sammamish and Lake Washington. While some areas may already offer fairly good ecological functions (Mercer Slough Nature Park and the Lake Hills Greenbelt), there are additional opportunities to further enhance ecological functions. These goals and constraints were used to help develop a prioritization of restoration projects. Programmatic actions, like continuing WRIA 8 involvement and conducting outreach programs to local residents, are considered ongoing efforts which should continue to receive funding and recognition for their importance throughout the city. Other factors that influenced the project prioritization are based on scientific recommendations specific to WRIA 8, potential funding sources, the projected level of public benefit, and project feasibility.

Although the following project ranking and conceptual plan development is based on evaluation of both ecological benefits and feasibility, the actual order of implementation may not always correspond with the ranking level assigned to that project. This discrepancy is caused by a variety of obstacles that interfere with efforts to implement projects in the exact order of their perceived priority. 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.

Six potential restoration projects from Table 5 were selected through the project prioritization and ranking process for further development of conceptual designs. These projects include: Chism Beach Park shoreline restoration (LW-5); Clyde Beach Park shoreline restoration (LW-1); Newcastle Beach Park shoreline restoration (LW-10);

Mercer Slough- Bellefield Office Complex buffer enhancement (MS-4); West Lake Sammamish shoreline restoration (LS-2); and Larsen Lake stream restoration, fish passage, and revegetation (PL-4). Conceptual designs were developed with consideration to present condition, potential for improved ecological function, and public use interests at each site. Details of the concept designs are provided in Appendix F.

9.1 Chism Beach Park shoreline restoration

The proposed project area extends west approximately 260 ft from the existing pier, to the existing forested shoreline. The project shoreline is armored with rip-rap, which reflects wave energy and eliminates shallow-water nursery habitats for small fishes, like juvenile Chinook salmon. The area immediately landward of the rip-rap bulkhead contains a large concrete walkway along the southeastern side of the project area and mown lawn to the northwest. A pier extends out over the lake from the southeastern edge of the concrete walkway. Shoreline vegetation is limited to mown grass.

The project will replace rip-rap with a more natural shoreline gradient, stabilized by anchored large wood, boulders, and a well-graded mix of gravel. Regrading the shoreline will help attenuate wave energy, restore sediment transport processes, and restore shallow water shoreline habitat for native fish. Large wood along the shoreline will provide refuge opportunities for small fish and amphibians.

The large existing concrete trail will be set back and replaced by a smaller pervious 'nature path.' Shoreline revegetation will provide habitat, hydrologic, and vegetative functions by shading the nearshore, providing a source of organic debris and insect prey to the lake, and improving the filtration capacity of the area.

The existing dock will be relocated to a more central, accessible location, and will feature grated decking and widely spaced pilings to reduce nearshore shading and limit habitat for non-native fish.

9.2 Clyde Beach Park shoreline restoration

The entire 160 ft of shoreline in the park is either concrete bulkhead or concrete steps. This creates a steep, uniform shoreline that reflects wave energy and eliminates shallow nearshore habitat. The shoreline presently lacks vegetation, and the upland areas of the park are dominated by lawn and impervious surfaces. The park features two piers: one functions as a swimming pier, and the other is used by boats and has a boat house but is in structural disrepair and may be removed.

The conceptual design will remove the concrete armoring along the shoreline, and use large wood and boulders to stabilize the shoreline. This shoreline restoration will improve wave attenuation and sediment transport, and providing physical habitat features for fish and amphibians.

A large sandy beach area will replace lawn that presently extends up to the concrete bulkhead. The beach will concentrate shoreline use in the central area and allow for shoreline revegetation on either side. Planting native shrubs in shoreline and upland areas will provide foraging, refuge, and nesting habitat for wildlife, as well as vegetative functions, such as temperature regulation in the shallow nearshore areas and water quality improvement by filtering pollutants from runoff from nearby roads and residences.

The conceptual design includes the removal of the existing swimming pier, and the replacement of the existing pier to the south with fully grated decking to reduce shading in the nearshore area. Pier removal and improvement will enhance aquatic habitat.

9.3 Newcastle Beach Park shoreline restoration

This park features a large swimming pier with chemically treated wood decking, and thick wooden skirting that reduces light penetration into the lake. A large concrete bulkhead, backed by a wide concrete path, just south of the pier creates an abrupt, tall vertical shoreline that reflects wave energy and eliminates shallow-water nursery habitats for juvenile Chinook salmon and other small fish. A forested wetland and small stream with high-quality natural shoreline habitat lies just south of the concrete bulkhead. In the nearshore area at the northern end of the park, the pilings remain from a derelict wooden bulkhead.

The shoreline restoration will improve habitat, vegetative, and hydrologic functions by restoring shallow water habitat, enhancing shoreline habitat complexity, planting native trees and vegetation, and reducing overwater cover. The bulkhead south of the pier will be removed and the area will be regraded to create a natural, shallow beach gradient, stabilized by large wood and boulders. The existing grass mound will be graded back, and native vegetation will be planted along the lakeshore. Large wood and boulders will be used to reinforce the area where the restored beach will meet the existing pier.

The pier deck will be replaced with a grated surface, and skirting along the existing pier will be removed in places to allow light penetration and juvenile salmon migration along the nearshore area, while continuing to protect the swimming beach from wave energy.

The bulkhead pilings at the northern end of the park will be removed to restore shallow water habitat for native fish.

9.4 Mercer Slough- Bellefield Office Complex buffer enhancement

This proposed project is on private property, and it provides an example of a potential voluntary action that could provide significant ecological benefits. Project implementation is not required of the property owners or management.

The West Channel of Mercer Slough presents several opportunities to increase vegetated buffer functions by planting large conifers and shade trees along the shoreline. A wooded buffer will increase shading to reduce late-summer water temperatures and improve water quality by filtering out contaminants from road and parking lot runoff. The vegetated buffer would also provide diverse habitat for wildlife. The placement of large wood along the shoreline would increase aquatic refuge habitats and the diversity of habitat niches available for aquatic species.

9.5 West Lake Sammamish shoreline restoration

This project would enhance the Lake Sammamish shoreline and improve public access on three former residential parcels owned by the city. The shoreline is currently unarmored and has a gradual, mostly natural lakeshore gradient. The southern half of the property, near the lake, is poorly drained, and contains vegetation, soil and hydrology indicative of wetland conditions. The northern portion of the property features an existing pavilion structure and a large paved patio set back approximately 50 feet from the lakeshore. Much of the upland area is well vegetated, with several large coniferous and deciduous trees.

The lakeshore on the southern portion of the property will be planted with native wetland shrubs and trees appropriate for the saturated soils. Wetland planting will increase vegetative functions, particularly water quality improvement, and habitat diversity along the shoreline. Active recreational use will be focused in the northern parcel of the future park. Parking and access to the lower portion of the properties will be improved so that this park may function as both a recreational outlet, as well as a shoreline restoration model.

The project would remove one of the two existing docks and reduce the total size of the other dock. The remaining dock will be designed to minimize shoreline habitat impacts. Design improvements will include grated decking and a narrower 'bridge' over the nearshore area to allow for light penetration to the nearshore. Nearshore 'bridge' decking could be removed in the winter and early spring to minimize impacts for migrating juvenile salmonids.

9.6 Larsen Lake stream restoration, fish passage, and revegetation

The project area stretches from the outlet of Larsen Lake to the first culvert under a commercial development. The existing outlet to Larsen Lake is a low-gradient, straight, uniform channel lacking woody debris or overhanging woody vegetation. The outlet is actively maintained for flood control purposes. The southernmost ~80 ft of the channel is surrounded by mown grasses and blueberry bushes, associated with the Larsen Lake blueberry farm. Several areas, including most of the east bank of the channel are dominated by reed canary grass. Himalayan blackberry is also present at this site.

The banks of the channel and surrounding areas will be regraded to increase the total flood storage capacity and create meanders and backwater areas that will also enhance physical habitat functions. The project will add large wood to create habitat complexity within the channel, and to encourage slight channel meanders. Revegetation with dense wetland shrubs and trees will be used to control reed canary grass and Himalayan blackberry. Revegetation will enhance wildlife habitat diversity, shade, and the provision of wood and organic matter to the channel.

Three to four rows of blueberries will be removed on each side of the channel, and a narrow buffer of native plants will be planted along the channel in the uppermost 80 feet of the channel. This buffer will improve water quality by reducing the quantity of nutrients and possible contaminants entering the channel.

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11 LIST OF ACRONYMS AND ABBREVIATIONS

AASF……Adopt-A-Stream Foundation

Cfs…… cubic feet per second

CIP ..... Capital Investment Program

GMA ..... Growth Management Act

NGPA ..... Native Growth Protection Area

NGPE..... Native Growth Protection Easement

NPDES..... National Pollutant Discharge Elimination System

OHW/M ..... ordinary high water/mark

USACE ..... U.S. Army Corps of Engineers

USGS..... U.S. Geological Survey

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

WDOE ..... Washington Department of Ecology

APPENDIX A

City of Bellevue Resolution No. 7214

1383-RES
6/23/2005

CITY OF BELLEVUE, WASHINGTON

RESOLUTION NO. 7214

A RESOLUTION ratifying the Water Resource Inventory Area (WRIA) 8 Chinook Salmon Conservation Plan.

WHEREAS, in March 1999, the National Oceanic and Atmospheric Administration (NOAA) Fisheries listed the Puget Sound Chinook salmon evolutionary significant unit as a threatened species under the Endangered Species Act (ESA); and

WHEREAS, in November 1999, the United States Fish and Wildlife Service (USFWS) listed the Puget Sound bull trout distinct population segment as a threatened species under the ESA; and

WHEREAS, under the ESA, it is illegal to take a listed species, and the ESA defines the term "take" to include actions that could harm listed species or their habitat; and

WHEREAS, actions that are directly or indirectly authorized by local governments could potentially expose local governments to civil or criminal penalties under the ESA; and

WHEREAS, under the ESA, Section 4(f), NOAA Fisheries (for Chinook salmon) and USFWS (for bull trout) are required to develop and implement recovery plans to address the recovery of the species; and

WHEREAS, an essential ingredient for the development and implementation of an effective recovery program is coordination and cooperation among federal, state, and local agencies, tribes, businesses, researchers, non-governmental organizations, landowners, citizens, and other stakeholders as required; and

WHEREAS, Shared Strategy for Puget Sound, a regional non-profit organization, has assumed a lead role in the Puget Sound response to developing a recovery plan for submittal to NOAA Fisheries and the USFWS; and

WHEREAS, local jurisdictions have authority over some habitat-based aspects of Chinook survival through land use and other policies and programs; and the state and tribes, who are the legal co-managers of the fishery resource, are responsible for addressing harvest and hatchery management in WRIA 8; and

WHEREAS, in WRIA 8, habitat actions to significantly increase Chinook productivity trends are necessary, in conjunction with other recovery efforts, to avoid extinction in the near term and restore WRIA 8 Chinook to viability in the long term; and

WHEREAS, the City values ecosystem health, water quality improvement, flood hazard reduction, open space protection and maintaining a legacy for future generations, including commercial, tribal, and sport fishing, quality of life, and cultural heritage; and

WHEREAS, the City supports cooperation at the WRIA level to set common priorities for actions among partners, efficient use of resources and investments, and distribution of responsibility for actions and expenditures; and

WHEREAS, the City of Bellevue has a history of environmental protection such as adoption of ordinances protecting stream buffers and natural streams prior to state requirements, establishment of the first stormwater utility to address urban stream flows and has a capital improvement program specifically to address fish passage problems; and

WHEREAS, 27 local governments in WRIA 8 jointly funded development of *the WRIA 8 Steering Committee Proposed Lake Washington/Cedar/Sammamish Watershed Chinook Salmon Conservation Plan* (the Plan), published February 25, 2005 following public input and review; and

WHEREAS, while the Plan recognizes that salmon recovery is a long-term effort, it focuses on the next 10 years and includes a scientific framework, a start-list or priority actions and comprehensive action lists, and adaptive management approach, and a funding strategy; and

WHEREAS, it is important to provide jurisdictions the private sector and the public with certainty and predictability regarding the course of salmon recovery actions that the region will be taking in the Lake Washington/Cedar/Sammamish Watershed, including the Puget Sound nearshore; and

WHEREAS, if insufficient action is taken at the local and regional level, it is possible that the federal government could list Puget Sound Chinook salmon as an endangered species, thereby decreasing local flexibility

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City Council of the City of Bellevue hereby ratifies *the WRIA 8 Steering Committee Proposed Lake Washington/Cedar/Sammamish Watershed Chinook Salmon Conservation Plan,* dated February 25, 2005 (the Plan) a copy of which Plan has been given Clerk's Receiving No. 37793.

Section 2. Ratification is intended to convey the City's approval and support for the following:

A. The following goals for the Plan:

1) The Plan mission statement to conserve and recover 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.

2) The multiple benefits to people and fish of Plan implementation including water quality improvement; flood hazard reduction; open space protection, and maintaining a legacy of future generations, including commercial, tribal and sport fishing, quality of life, and cultural heritage.

B. Continuing to work collaboratively with other jurisdictions and stakeholders in the Lake Washington/Cedar/Sammamish Watershed (WRIA 8) to implement the Plan.

C. 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.

D. Adopting an adaptive management approach to Plan implementation and funding to address uncertainties and ensure cost-effectiveness by tracking actions, assessing action effectiveness, learning from results of actions, reviewing assumptions and strategies, making corrections where needed, and communicating progress. Developing and implementing a cost-effective regional monitoring program as part of the adaptive management approach.

E. Using the comprehensive list of actions, and other actions consistent with the Plan, as a source of potential site specific projects and land use and public outreach recommendations. Jurisdictions, agencies, and stakeholders can implement these actions at any time.

F. Using the start-list to guide priorities for regional funding in the first ten years of Plan implementation, and implementing start-list actions through local capital improvement projects, ordinances, and other activities. The start-list will be revised over time, as new opportunities arise and as more is learned through adaptive management.

G. Using an adaptive approach to funding the Plan through both local sources and by working together (within WRIA 8 and Puget Sound) to seek federal, state, grant, and other funding opportunities. The long-term ultimate goal is to fund the Plan through a variety of sources at the current 2004 level plus 50 percent, recognizing that this resolution cannot obligate future councils to financial commitment and that the funding assumptions, strategies and options will be revisited periodically.

H. Forwarding the Plan to appropriate federal and state agencies through Shared Strategy for Puget Sound, to be included in the Puget Sound Chinook salmon recovery plan.

Section 3. The City recognizes that negotiation of commitments and assurances/conditions with the appropriate federal and state agencies will be an iterative process. Full implementation of this Plan is dependent on the following:

A. NOAA Fisheries will adopt the Plan, as an operative element of its ESA Section 4(f) recovery plan for Puget Sound Chinook salmon.

B. NOAA Fisheries and USFWS will:

1) take no direct enforcement actions against the City under the ESA for implementation of actions recommended in or consistent with the Plan,

2) endorse the Plan and its actions, and defend the City against legal challenges by third parties, and

3) reduce the regulatory burden for City activities recommended in or consistent with the Plan that require and ESA Section 7 consultation.

C. Federal and state governments will:

1) provide funding and other monetary incentives to support Plan actions and monitoring activities,

2) streamline permitting for projects implemented primarily to restore salmonid habitat or where the actions are mitigation that further Plan implementation,

3) offer programmatic permitting for local jurisdiction actions that are consistent with the Plan,

4) accept the science that is the foundation of the Plan and support the monitoring and evaluation framework,

5) incorporate actions and guidance from the Plan in future federal and state transportation and infrastructure planning and improvement projects, and

6) direct mitigation resources toward Plan priorities.

D. This resolution does not obligate the City Council to future appropriations beyond current authority.

Passed by the City Council this 27th day of June, 2005, and signed in authentication of its passage this 27th day of June, 2005.

(SEAL)

Debbie Noble FOR
Connie B. Marshall, Mayor

Attest:

Myrna L. Basich
Myrna L. Basich, City Clerk

APPENDIX B

Comprehensive Action-list for Potential Restoration and Protection Projects* for the Kelsey Creek Subarea.

***Projects were indentified in chapter 11 of the *Final WRIA 8 Chinook Salmon Conservation Plan* for the Kelsey Creek Subarea (including Goff, Kelsey, Richards and Valley Creeks and the West Tributary).**

Preliminary DRAFT North Lake Washington Chinook Population - Tier 2 - Initial Habitat Project List

Includes Potential Restoration and Protection Projects by Reach.

Kelsey Creek Subarea Reaches 1-10

Basinwide Recommendations:

Project #	Description
N605	Protect Existing Hydrology.
N606	Continue Bellevue's Native Growth Protection Area Program to acquire lands and actively manage areas to maintain ecosystem functions.

Reach 1: Lower Kelsey - Kelsey Creek from mouth to confluence with Richards Creek and Lake Hills culvert (76_01 - 76_03)

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N441	1	6	new	**Mercer Slough Floodplain Restoration:** Place LWD along edges and create off-channel habitat (where soils permit).		New concept, no plans/designs/conceptual drawings.	**M**	**H**
N442	1	6	new	**Riparian Restoration in Mercer Slough:** Remove invasive non-native plants and plant successional forests - such as cottonwood, dogwood and willow in wetter areas, and possibly cedar, spruce, etc. where soils and hydrology permit.		Implement in large disturburbed areas and work with Bellefields Office Park to create and increase buffers. Include large trees where not safety hazard to buildings or other structures.	**H**	**H**
N443	1	6	new	**Enhance Mercer Slough Cool Water Refuges:** Restore mouth of seeps and springs at Mercer Slough to provide cool refugia areas.		Two spring fed streams are known on East side of Mercer Slough, about mid-way to fish ladder.	**H**	**M**
N444	1	6	new	**Mercer Slough Blueberry Farm:** Implement improved Integrated Pest Management controls and cultural practices to reduce pesticide use and protect water quality in the Mercer Slough Blueberry Farm. Possibly consider organic certification as possible alternative in the future.		Farm currently uses very little chemicals and is analyzing the effects of increased organic cultural techniques on crop yields.	**M**	**H**
N445	1	6	new	**Mercer Slough Creosote Wall Removal:** Remove creosote wall near I-90.		We don't know why wall was built so don't know problems with removal.	**H**	**M/L**
N446	1	6	1d	**Fish Passage:** Replace Washington State Department of Transportation culverts beneath I-405 with bridge and restore stream habitat.			**H**	**M**
N447	1	6	new	**Above I-405, Reach 76-03:** Check sewage pump station/force mains for concerns about sewage smells that have been periodically noted.			**M**	**H**

N448	1	6	new	**Above I-405, Reach 76-03:** Remove riprap in stream channel bottom, install LWD, and restore habitat.		Need to consider Wilburton Trestle stability in restoration actions. Should be done in concert with I-405 bridge.	**H**	**M**
N449	1	6	1h	**Fish Passage:** Modify existing culverts that are partial barriers by placing low-flow deflectors on multichannel box culverts to increase depth of low-flow channel at 121st Avenue SE.			**H**	**H**
N450	1	6	new	**Above I-405, Reach 76-03:** Investigate opportunities to connect wetlands on north side of SE 8th near firestation with Kelsey creek for off-channel habitat.			**M**	**M**
N451	1	6	new	**Above I-405, Reach 76-03:** Improve connections with cold water seeps/springs off Woodridge Hill for refugia in Kelsey Creek.			**H**	**M**
N452	1	6	new	**Above I-405, Reach 76-03:** Install LWD; remove invasive non-native plants, restore native vegetation using successional forest concepts.			**H**	**H**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
	1			new	No projects identified at this time.				

Reach 2: Kelsey Park - Kelsey Creek from Lake Hills connector culvert to lower end of Glendale Golf Course (76_04 - 76_05)

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N453	2	3	new	**Fish Passage:** Replace culverts at Lake Hills Connector with bridge.			**M**	**L**
N454	2	3	3a	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 76-03a through 76-08 of Kelsey Creek.			**H**	**H**

N455	2	3	4	**Wetland Restoration:** Restore and enhance degraded wetlands to restore off-channel and riparian wetland habitats along stream segment 76-05 of Kelsey Creek, which experienced the impact of a landslide as a result of the Nisqually earthquake.		Riparian corridor completed. Some beaver damage.	**M**	**M**
N456	2	3	6b	**Stream Channel Improvements:** Restore stream channel through Kelsey Creek segments 76-03 through 76-05.		Segment 76-04 complete. Funding from KCD and Waterworks.	**M**	**H**
N457	2	3	8a	**Restoration of Riparian Areas:** Identify and implement opportunities to plant native vegetation to increase cover, including coniferous trees where soils and hydrology permits, in the riparian zones throughout the subarea. First priority should be the mainstem of Kelsey Creek.			**H**	**H**
N458	2	3	3a	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 76-03a through 76-08 of Kelsey Creek.			**H**	**M**
N459	2	3	8b	**Restoration of Riparian Areas:** Remove invasive non-native plants and restore native vegetation. Use successional plantings in areas of high disturbance and limited canopy. Underplant conifers in areas of deciduous buffers.			**H**	**H**
N460	2	3	new	**Stream Channel Improvements:** Explore opportunities to set back or remove berm on reach 76-05 and expand buffer and channel migration zone.		Moving the berm may conflict with the historical, cultural and recreational uses of the farm. Lack of alternative pasture areas for the livestock could increase resource degradation.	**H**	**M**
N461	2	3	new	**Stream Channel Improvements:** If berm on reach 76-05 cannot be moved, then explore opportunities to utilize man-made tributary through pastures as secondary channel. Improve buffers around tributary with native vegetation and fencing.		Tributary has been fenced and a limited vegetated buffer been restored.	**H/M**	**M**
N462	2	3	new	**Riparian Wetland Creation/Floodplain Reconnection:** In lower Glendale, establish wetland along mainstem Kelsey, allow floodplain connectivity.		Glendale Country Club is willing to alter their course to allow this.	**H**	**H**
N463	2	3	new	**Channel Migration:** Allow natural channel migration to occur in lower Glendale reaches and Kelsey Creek Farm.			**H**	**M**
N464	2	3	new	**Enlarge Riparian Buffer:** Where possible increase native riparian buffer along mainstem Kelsey through Glendale Country Club.		Glendale Country Club is willing to enlarge buffers as long as the greens/course does not have to be modified.	**H**	**M**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N465	2			new	**Acquisition:** Acquire parcels just south of SE 7th along wetland buffer.		Parcels are mostly undeveloped and currently excellent wetland buffer for mainstem Kelsey and West Tributary.	**H**	**H**
N466	2			new	**Farm Management BMPs:** Update Farm Renovation and Master Plan and continue to implement Environmental Management Plan BMPs to protect stream from water quality and physical impacts and to enhance and improve fish and wildlife habitat.			**H**	**M**
N467	2			new	**Illegal Water Withdrawals:** Investigate and remove illegal water withdrawals.		DOE has been notified of specific water withdrawals in reach.	**H**	**M**
N468	2			new	**Water Rights:** Investigate opportunities to utilize alternative water sources for legal water withdrawals.		Glendale Country Club has water rights for Kelsey Creek for irrigation. They typically use a stormwater pond for irrigation and use the water right only to maintain their rights.	**H**	**M**

Reach 3: Kelsey Golf Course - Kelsey Creek from grade control passage obstruction at golf course to Olympic pipeline structure (76_06 - 76_07)

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N469	3	1	3a	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 76-03a through 76-08 of Kelsey Creek.			**H**	**M**
N470	3	1	8a	**Restoration of Riparian Areas:** Identify and implement opportunities to plant native coniferous trees in the riparian zones throughout the subarea. First priority should be the mainstem of Kelsey Creek.			**H**	**M**
N471	3	1	new	**Riparian Education/Incentives:** Work with streamside property owners south of NE 8th to establish native riparian buffers.			**M**	**M**

N472	3	1	new	**Fish Passage:** Replace NE 8th St. culvert with bridge.			**H**	**L**
N473	3	1	new	**Fish Passage:** Reduce jump height at concrete weirs using artificial riffle or other "softer" engineering.			**H**	**H**
N474	3	1	new	**Remove Bank Armoring:** Remove riprap, setback banks, and bioengineer banks.			**H**	**L**
N475	3	1	new	**Restore stream channel** and use wildlife pond for off-channel habitat upstream of NE 8th.			**H**	**L**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N476	3			new	**Golf Course BMPs:** Have Glendale Country Club maintain National Audubon Environmental Certification and employ BMPs to avoid water quality, temperature, or other impacts to Kelsey Creek.		Glendale currently maintains all levels of environmental certification from Audubon. Work with Glendale should continue and care taken to assure that sand and physical impacts are not an issue.	**M**	**H**

Reach 4: Kelsey Below Valley Creek - Kelsey Creek from Olympic pipeline structure to confluence with Valley Creek (76_07)

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N477	4	2	3a	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 76-03a through 76-08 of Kelsey Creek.			**H**	**M**
N478	4	2	8a	**Restoration of Riparian Areas:** Identify and implement opportunities to plant native coniferous trees in the riparian zones throughout the subarea. First priority should be the mainstem of Kelsey Creek.			**H**	**M**
N479	4	2	new	**Bank Restoration:** Use bioengineering and bank slope setbacks to remove severely eroding gabion walls and stabilize stream banks.		This area is completely in private ownership. Implementation is uncertain.	**H**	**L**
N480	4	2	new	**Fish Passage:** Improve fish passage at Olympic Pipeline weirs.			**H**	**M**

N481	4	2	new	**Bel-Red Channel Constraints:** Re-establish more natural channel through Bel-Red area, use weirs for grade control at sheet pile wall until stream can be restored.			**H**	**L**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N482	4			new	**Acquire/Easements:** Protect existing riparian habitat, especially in larger parcels where stream could meander and buffers could be wider.			**H**	**H**
N483	4			new	**Sensitive Development:** Investigate and adopt options for more natural stream channel during Bel-Red commercial redevelopment process.			**H**	**M**

Reach 5: Kelsey Above Valley Creek - Kelsey Creek from confluence with Valley Creek to Main street (76_08 - 76_09)

Restoration

Technical Hypothesis: *Reduce fine sediment inputs, add LWD, restore riparian conditions, reduce channel confinement.*

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N484	5	8 (tied with Reach 7: Richards Creek)	new	**Channel Restoration:** Enlarge channel cross-section, reconnect floodplain, install large woody debris through apartment complex.			**H**	**L**
N485	5	8 (tied with Reach 7: Richards Creek)	3a	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 76-03a through 76-08 of Kelsey Creek.			**H**	**M**
N486	5	8 (tied with Reach 7: Richards Creek)	7a	**Protection of Forested Buffers:** Purchase riparian forested buffers or conservation easements in stream segments 76-08 and 76-09 of Kelsey Creek.			**H**	**M**
N487	5	8 (tied with Reach 7: Richards Creek)	8a	**Restoration of Riparian Areas:** Identify and implement opportunities to plant native coniferous trees in the riparian zones throughout the subarea. First priority should be the mainstem of Kelsey Creek.			**M**	**M**

N488	5	8 (tied with Reach 7: Richards Creek)	new	**Reduce bank armoring,** lay back banks, and use bioengineering to restore banks and riparian area.			**H**	**L**
N489	5	8 (tied with Reach 7: Richards Creek)	new	**Fish Passage:** Replace private culverts that limit passage and flow.			**H**	**M**
N490	5	8 (tied with Reach 7: Richards Creek)	new	**Fish Passage:** Replace culvert at 148th Ave NE with fish friendly culvert or bridge.			**H**	**H**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N491	5			new	**Acquisition/Easements:** Protect existing coniferous riparian habitat along Kelsey Creek upstream of Ilahee Apt to 148th Ave NE.			**H**	**M**
N492	5			new	**Acquisition:** Protect wetlands along 148th.			**H**	**H**

Reach 6: Kelsey Creek Headwaters - Kelsey Creek from Main Street to headwaters (76_10 - 76_12)

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N493	6	9	new	**Remove culvert and restore stream channel** upstream of Main St.			**M**	**L**
N494	6	9	new	**Replant riparian vegetation** through Lake Hills Greenbelt to reduce reed canary grass impacts and keep temperatures lower.			**H**	**H**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N495	6			new	**Maintain headwater wetlands** to protect summer base flows and aquatic ecosystem.			**H**	**H**

Reach 7: Richards Creek - Richards Creek from mouth to SE 32nd St.

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N496	7	8 (tied with Reach 5: Kelsey)	1c	**Fish Passage:** Obtain permits and build new culvert at SE 26th Street on East Creek.			**M**	**H**
N497	7	8 (tied with Reach 5: Kelsey)	1e	**Fish Passage:** Design, obtain permits, and build new culvert at SE 30th Street on Richards Creek.		Design work began 2003.	**M**	**H**
N498	7	8 (tied with Reach 5: Kelsey)	1j	**Fish Passage:** Modify existing culverts that are partial barriers by placing low-flow deflectors on multichannel box culverts to increase depth of low-flow channel at Lake Hills Connector.		Design work began 2003.	**H**	**H**
N499	7	8 (tied with Reach 5: Kelsey)	3b	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 77-02 through 77-03 of Richards Creek.			**H**	**H**
N500	7	8 (tied with Reach 5: Kelsey)	3c	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segment 79-01 of Sunset Creek.			**H**	**L**
N501	7	8 (tied with Reach 5: Kelsey)	7c	**Protection of Forested Buffers:** Purchase riparian forested buffers or conservation easements in stream segments 77-01 through 77-03 of Richards Creek.			**?**	**?**
N502	7	8 (tied with Reach 5: Kelsey)	8b	**Restoration of Riparian Areas:** Reduce invasive non-native plants in high Chinook usage reaches (reed canarygrass and purple loosestrife in segments 77-01 through 77-02 in Richards Creek.			**H**	**H**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N503	7			new	**Acquisition:** Purchase two parcels to protect hillside springs/seeps and forest.		Parcels are isolated from stream by Lake Hills Connector and Richards Road, but impacts from development could still impact stream. Includes parcels #0424059002 and	**M**	**H**
N504	7			new	**Acquisition:** Acquire undeveloped properties or easements along reach 77-02 & 78-01.			**H**	**H**

Reach 8: Valley Creek - Valley Creek from mouth to Bellevue Municipal Golf Course

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N505	8	7	new	**Daylight Creek** - Daylight Valley Creek through Bellevue Golf Course.			**H**	**H**
N506	8	7	1d	**Fish Passage:** Improve fish passage at Washington State Department of Transportation culverts beneath SR 520.			**H**	**M**
N507	8	7	3e	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 82-01 through 82-05 of Valley Creek.		Segment 82-01 complete 2003.	**H**	**L**
N508	8	7	3f	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segment 83-01 of Sears Creek.		In permitting 2003.	**H**	**H**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
	8			new	No projects identified at this time.				

Reach 9: West Tributary - West Trib from mouth to Bellevue-Redmond Road (upper extent coho potential)

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N509	9	4	1f	**Fish Passage:** Design, obtain permits, and build new culvert at NE First Street on West Tributary.			**H**	**M**
N510	9	4	3d	**Installation of Large Woody Debris:** Until peak hydrology can be restored to more natural conditions, design and install large woody debris to provide hydraulic refuge areas during peak flows in stream segments 80-01 through 80-02 in the West Tributary.			**H**	**H**
N511	9	4	6a	**Stream Channel Improvements:** Restore original stream channel of the West Tributary through Kelsey Creek Farm, segment 80-01.		Kelsey Creek Project , P-AD-65. Consultant hired 2003. Project in design.	**H**	**H**
N512	9	4	8b	**Restoration of Riparian Areas:** Reduce invasive non-native plants in high Chinook usage reaches (reed canarygrass and purple loosestrife in segments 80-01 through 80-02 in the West Tributary).			**H**	**H**
N513	9	4	new	**Stream Channel Improvements:** Place LWD in floodplain near channel and spanning logs, to help maintain channels, increase pool formation, and increase upland habitat diversity.		Do not recommend placing LWD in stream due to instability of channel and sediment deposition.	**H**	**H**

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N514	9			new	**Acquisition:** Purchase parcels just south of SE 7th along wetland buffer.		Parcels are mostly undeveloped and currently excellent wetland buffer for mainstem Kelsey and West Tributary.	**H**	**H**

Reach 10: Goff Creek - Goff Creek from mouth (West Trib) to Bellevue-Redmond Road (upper extent coho potential)

Restoration

Technical Hypothesis:

Project #	Reach #	Reach Rest. Benefit Rank	NTAA #	Project Name & description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
	10	5		No projects identified at this time.				

Protection

Technical Hypothesis:

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M. L	Feasib. H, M, L
N515	10			7b	**Protection of Forested Buffers:** Purchase riparian forested buffers or conservation easements in stream segment 81-01 of Goff Creek.			**H**	**M**

APPENDIX C

Blank Project Restoration 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, 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.			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 without reducing its overwater footprint, enter the square footage of overwater cover that will be daylighted. 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 without reducing its overwater footprint, enter the square footage of overwater cover that will be daylighted. If more than 300 square feet of off-shore overwater cover will be daylighted, enter 300.
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 D

Project Ranking Forms

Notes

Lake Ranking

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	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.
A7	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
A8	Enter the straight-line distance (in feet) to the nearest salmonid-fish-bearing tributary. If the project is more than 1/4 mile (1,320 feet) from the nearest tributary, enter "0" in the rating column.
A9	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.
A10	Enter 5 if the project has a high likelihood 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.
A11	Enter "1" if there is some active environmental problem that will be addressed by the project, such as shoreline erosion or flooding.
A12	Enter the score corresponding to the level of urbanization in the project vicinity. Alternatives to using urbanization as a measure include 1) shoreline jurisdiction, 2) zoning, or 3) impervious surface.

Stream Ranking

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 streambank/shoreline where armoring will be removed. If the project removes armoring over a distance greater than 100 feet, enter 100 feet)
A3	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.
A4	Enter the square footage of flood plain and/or channel migration zone area reconnection or extension. If the reconnection or extension area is greater than 4,000 square feet, enter 4,000.

Restoration Site: Clyde Beach

Project Description and Assumptions

Restoration of ~160 feet of armored shoreline and riparian zone to enhance ecological function. Parks is currently looking into conceptual ideas for shoreline restoration and user enhancement. This likely to include removal of concrete bulkhead and hardened shoreline, installation of sloped beach with added vegetation (~2,000 s.f.) in areas along the water's edge. Access to the shoreline, beach use, and recreation will need to be maintained for park users. A large boathouse and series of piers and boat slips currently covers large portions of the water. All existing over water structure may be removed and replaced with a fully grated pier that will enclose a swimming area. All new plantings will be native or drought tolerant.

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)	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				28.5

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	1	4
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	4	1	4
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				21
	Grand Total				49.5

Restoration Site: Meydenbauer Beach Park

Project Description and Assumptions

Implement Meydenbauer Bay Park Plan - Plan calls for the restoration of a 800 linear feet of shoreline currently armored, a 35% reduction of overwater coverage by removing a portion of the docks, enhancement of public access and recreation amenities, revegetation of over 4,000 s.f., and the daylighting of a native stream.

	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)	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)	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	1	1	1.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				38.5

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	1	1	1
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	4	1	4
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	1	1	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	1	5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				17
	Grand Total				55.5

Restoration Site: Meydenbauer Marina

Project Description and Assumptions

Convert Meydenbauer Marina into a fish friendly marina by improving light penetration (install deck grating, remove large canopies or install windows to allow light through), reducing predator habitat (remove unnecessary piles), and improving water circulation (grated decking, pile size and quantity minimization, elevated pier decking, etc)

	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)	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)	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	3	1	3.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	1	1	1.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				40.5

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	0	1	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	1	1	1
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	1	1	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	1	5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				13
	Grand Total				53.5

Restoration Site: Chism Beach Park

Project Description and Assumptions

Opportunity to restore large section of shorleine by removing riprap, restabilize shoreline using bioengineered solution, and native revegetation. Similar to Clyde Beach Park, Parks is currently looking into conceptual ideas for shoreline restoration and user enhancement. This likely to include removal of concrete bulkhead and hardened shoreline (~1,200 linear feet), installation of sloped beach with added vegetation in areas along the water's edge. Access to the shoreline, beach use, recreation will need to be maintained for park users. Interpretive opportunities exist. Also proposed are inclusion of low-impact development techniques including rain gardens, green roofs, and green walls.

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)	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)	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).		0	0.5	0.0
A6	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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				37.0

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	3	1	3
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	1	1	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	1	5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				18
	Grand Total				55.0

Restoration Site: Burrows Landing

Project Description and Assumptions

Located at SE 15th St. street-end. Opportunity to restore shoreline ecological function (i.e. reducing overwater cover through installation of deck grating on existing pier [existing pier is 10 feet wide and 60 feet long], removing or minimizing the impacts of shoreline armoring and improving nearshore native vegetation). Shoreline is small, approximately 45 feet wide. The immediate shoreline area contains an approximately 150 square foot planting area that could be enhanced along with ~23 linear feet of shoreline armoring improvements. An existing stormwater pipe outfalls along or near the north property line.

	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)	150	1	1.4	0.3
A2	Project restores shoreline gradient (yes=1, no=0)	23	1	1	1.2
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	23	1	2	2.3
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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	0	1	0.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				10.7

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	1	1	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	1	5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	1	3
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				19
	Grand Total				29.7

Restoration Site: Sisters of St. Joseph

Project Description and Assumptions

Located at 1663 Killarney Way (PIN 0624059008). Opportunity to restore large section of shorleine (~600 feet long) by removing riprap, restabilize shoreline using bioengineered solution, and native revegetation. Potential for conservation easement, work with WRIA 8 and KCD for local grant funding.

	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)	1500	1	1.4	2.6
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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				24.6

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	3	1	3
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	3	1	3
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	1	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				16
	Grand Total				40.6

Restoration Site: Chesterfield Beach Park

Project Description and Assumptions

Located at SE 25th St. street-end. Opportunity to restore shoreline ecological function (i.e. Removing or minimizing the impacts of shoreline armoring and improving nearshore native vegetation). Shoreline is small, approximately 60 feet wide, ~30 feet of which could be improved by reducing shoreline armoring. The immediate shoreline area contains a covered shelter. Approximately 325 s.f. could be revegetated. Access to the shoreline, beach use, and recreation will need to be maintained for park users.

	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)	325	1	1.4	0.6
A2	Project restores shoreline gradient (yes=1, no=0)	30	1	1	1.5
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	30	1	2	3.0
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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	0	1	0.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				9.1

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	1	1	1
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	1	3
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	1	3
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				15
	Grand Total				24.1

Restoration Site: Enatai Beach Park

Project Description and Assumptions

Limited opportunity to restore shoreline ecological function due to location of boathouse and swimming beach. However, removing or minimizing the impacts of shoreline armoring and improving nearshore native vegetation exists further north and under I-90. The existing pier (~200 feet long) could be re-decked with light transmitting 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)	1000	1	1.4	1.8
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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				24.8

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	1	3
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	2	1	2
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				17
	Grand Total				41.8

Restoration Site: Newcastle Beach Park

Project Description and Assumptions

Opportunity to restore shoreline ecological functions include reducing overwater cover through installation of deck grating on existing pier, removing or minimizing the impacts of shoreline armoring and improving nearshore native vegetation. Small wooden bulkhead near the wetland could be removed and shoreline restored.

	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)	2300	1	1.4	4.0
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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	3	1	3.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				34.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	4	1	4
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	3	1	3
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	3	1	3
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				22
	Grand Total				56.0

Restoration Site: LS-1, LID Program to improve stormwater runoff

Project Description and Assumptions

West Lake Sammamish Parkway stormwater LID program - improve water quality from WLSP outfalls. Note: WLSP Filter vaults at drainage outfalls, first phase SE 34th South of I - 90 (potential implementation in 2012). Project addresses potential water quality improvements at six outfall locations.

	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)	0	1	1	5.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				11.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	3	1	3
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	1	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	1	1	1
	Section B Subtotal				11
	Grand Total				22.0

Restoration Site: LS-2, Spady and Adjoining City Property

Project Description and Assumptions

Former Spady property and other two adjacent city owned parcels along West Lake Sammamish Parkway (Naturalize shoreline at 1628-1700 WLSP. PINs 9253900240, x244, x245). Public access needs to be a part of this project. Total shoreline length is ~200 feet and includes two piers and a bulkhead on the northern lot. Look to coordinate with eventual master plan. Potential improvements would likely include removal of larger pier to the north, re-grating of remaining pier, revegetation of approximately 50% of the shoreline frontage (~1,000 s.f.), and removal of bulkhead on north property (~66ft)

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)	66	1	1	3.3
A3	Project reduces artificial shoreline armoring (yes=1, no=0)	66	1	2	6.6
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 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).	120	1	0.4	1.2
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	2	1	2.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				28.4

Section B: Feasibility Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	3	1	3
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	4	1	4
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	1	4
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	1	5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				24
	Grand Total				52.4

Restoration Site: LS-3, Milfoil eradication and control

Project Description and Assumptions

Eurasian water milfoil is widespread throughout Lake Sammamish – control efforts are needed along City owned shorelines. Investigate potential costs by contacting Medina and the Points which have long-standing eradication permits.

	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)	0	1	1	5.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	3	1	3.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				22.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	1	1	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	1	1	1
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	4	1	4
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	1	5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	1	1	1
	Section B Subtotal				14
	Grand Total				36.0

Restoration Site: LS-5, Vasa Park

Project Description and Assumptions

Vasa Park restoration of shoreline and native vegetation, including adjacent King County pump station site (~700 feet of total shoreline). Vasa Park restoration could include revegetation and plan to concentrate recreation so as to preserve areas of natural shoreline. King County pump station site is vegetated but could soften shoreline armoring (~150ft) and improve light transmission through the existing pier structure (pier is ~50ft long.)

	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)	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 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).	170	1	0.4	1.7
A7	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).	160	1	0.2	0.5
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)	280	1	1	3.9
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1
	Section A Subtotal				35.2

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	3	1	3
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	1	1	1
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	5	1	5
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				17
	Grand Total				52.2

Restoration Site: LS-6, Outfalls

Project Description and Assumptions

Develop plan to work with private landowners who live adjacent to creek outfalls (whether piped or not) and encourage and plan for enhancement to these openings for juvenile salmon rearing habitat. Projects could include planting native terrestrial and emergent vegetation, improving outfall conditions with sustrate enhancements, and removing pipes.

	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)	0	1	1	5.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		0	1	0.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	3	1	3.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	3	1	3
	Section A Subtotal				24.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	5	1	5
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	1	4
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	1	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				21
	Grand Total				45.0

Restoration Site: PL-1, Reforestation Program

Project Description and Assumptions

Initiate a reforestation program @ Phantom Lake which specifically identifies the area south of the main park and Robinsglen. Revegetation area is well over 4,000 square feet

	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	3	1	3.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	1	0
	Section A Subtotal				18.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	5	1	5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	1	5
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	4	1	4
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	1	4
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	1	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				20
	Grand Total				38.0

Restoration Site: PL-3, Acquisition of Lakefront Property

Project Description and Assumptions

Acquire lake front property as it becomes available & set-up conservation easement along shoreline and resell. Need to assess market condition.

	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)		1	1	5.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	2	1	2.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	1	0
	Section A Subtotal				10.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	5	1	5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	5	1	5
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	1	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	0	1	0
	Section B Subtotal				15
	Grand Total				25.0

Restoration Site: PL-5, Develop "C-Street" Program

Project Description and Assumptions

Develop a "C" streets program for Bellevue with a pilot project. Rehabilitate the neighborhood drainage in the SE 9th street area using infiltration for flood control similar to the "C" street model

	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)	800	1	1	2.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	2	1	2.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	1	0
	Section A Subtotal				9.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	1	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				12
	Grand Total				21.0

Restoration Site: PL-6, Lake Hills Ranger Station Vegetation Restoration

Project Description and Assumptions

Approximately 500 feet north of the Lake Hills Greenbelt Ranger Station is a constructed open water pond that helps retain sediments and control flood flows through the greenbelt. The pond is dominated by invasive species on its banks and would benefit from restoration and enhancement.

	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 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
A7	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
A8	Project is within 1/4 mile of the mouth of a salmonid-fish-bearing tributary (yes=1, no=0)		0	1	0.0
A9	Project is within 1/4 mile of high-quality shoreline habitats (yes=1, no=0)	0	1	1	5.0
A10	Likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A11	Enter the level of ecological risk associated with not conducting restoration at the site (high=5, moderate=3, little=1, virtually none=0).	N/A	2	1	2.0
A12	Typical/average level of expected, intermediate-term urbanization within overall shoreline segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	4	1	4.0
A13	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	1	0
	Section A Subtotal				19.0

	Section B: Feasibility Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	1	5
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	4	1	4
B4	Maintenance/repair costs (low = 5, high = 0)	N/A	4	1	4
B5	Project will be consistent with or enhance existing public access, recreation & aesthetic values (high = 5, low = 0)	N/A	0	1	0
B6	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				19
	Grand Total				38.0

Restoration Site: MS-1 Creosote Wall

Project Description and Assumptions

Remove creosote wall near I-90 (~250 feet long) - replace with something inert if necessary. Needs further analysis to determine ownership, history, usefullness, etc.

	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 reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	0	1	0.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	4	1	4.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	0	1	0.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	0	1	0.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				17.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	0	1	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	1	1	1
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	1	1	1
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	3	1	3
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	5	1	5
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	0	1	0
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	0	1	0
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	1	1	1
	Section B Subtotal				14
	Grand Total				31.0

Restoration Site: MS-2 Mercer Slough Bank Restoration behind 969 118th Ave SE

Project Description and Assumptions

Remove invasive vegetation and replant with native trees and shrubs to improve overhanging vegetation along slough.

	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 reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	0	1	0.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	0	1	0.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	2	1	2.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	0	1	0.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	2	1	2.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				22.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	1	5
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	3	1	3
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	0	1	0
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	4	1	4
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	4	1	4
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	4	1	4
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	4	1	4
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				29
	Grand Total				51.0

Restoration Site: MS-3 (Mercer Slough/112th Ave SE West Channel Restoration)

Project Description and Assumptions

Along Bellefield tributary and west channel. Remove invasives and revegetate with native successional forest plants such as cottonwood, dogwood and willow with cedar, spruce, etc. where soils permit. Place LWD along edges and create off-channel habitat.

	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 reduces artificial streambank armoring (yes=1, no=0)	0	0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)	0	0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	1	1	1.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	2	1	2.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	1	1	1.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	2	1	2.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				24.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	5	1	5
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	1	5
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	4	1	4
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	5	1	5
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	1	1	1
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	5	1	5
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	4	1	4
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	5	1	5
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				38
	Grand Total				62.0

Restoration Site: MS-4 Bellefield Office Complex Bank Restoration and Invasive Management

Project Description and Assumptions

Restore buffer, remove invasive vegetation and replant with native riparian species along Mercer Slough to provide dense overhead cover and shade to reduce heating. Develop and implement aquatic weed management plan.

	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		1.4	0.0
A2	Project reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	0	1	0.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	1	1	1.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	2	1	2.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	1	1	1.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	2	1	2.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				16.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	3	1	3
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	3	1	3
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	4	1	4
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	3	1	3
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				28
	Grand Total				44.0

Restoration Site: MS-5, Mercer Slough and Sturtevant Creek Confluence

Project Description and Assumptions

Enhance confluence of Sturtevant Creek and Mercer Slough with LWD and native plants/ trees.

	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 reduces artificial streambank armoring (yes=1, no=0)	0	0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)	0	0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	4	1	4.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	1	1	1.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	3	1	3.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	2	1	2.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				26.5

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	1	1	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	1	1	1
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	3	1	3
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	3	1	3
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	1	1	1
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				20
	Grand Total				46.5

Restoration Site: MS-6 Kelsey Creek bank restoration in West Kelsey Open Space

Project Description and Assumptions

Between I-405 and the culverts under Lake Hills Connector (~1,700), install LWD to provide hydraulic refuge areas during peak flows, remove non-native vegetation and revegetate with native trees/shrubs, remove rip-rap.

	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 reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)	1000	1	1	1.3
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	2	1	2.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	4	1	4.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	3	1	3.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	1	1	1.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				33.3

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	2	1	2
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	1	1	1
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	2	1	2
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	2	1	2
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	4	1	4
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				21
	Grand Total				54.3

Restoration Site: MS-7 Kelsey Wetlands Enhancement

Project Description and Assumptions

Knotweed, reed canarygrass, and policeman's helmet removal and native replanting in Kelsey Creek Park Wetland, upstream of Lake Hills Connector. Initiate a reforestation program which includes wetland willow rehabilitation project & LWD on banks. This is a large wetland with prior restoration project attempted.

	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 reduces artificial streambank armoring (yes=1, no=0)	0	0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)	0	0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	0	1	0.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	0	1	0.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	5	1	5.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	3	1	3.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	1	1	1.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				28.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	5	1	5
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	2	1	2
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	4	1	4
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	4	1	4
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				28
	Grand Total				56.0

Restoration Site: MS-8 Property Acquisition of SE 7th Street Parcels (0424059107, 108, 109, and 001)

Project Description and Assumptions

Acquire pacels just south of SE 7th along north side of the West Tributary and Kelsey Creek confluence and associated wetland buffer (PINs, 0424059107, x108, x109, x001). Enhance shoreline vegetation with native tree and shrub planting.

	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 reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)		1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	0	1	0.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	0	1	0.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	0	1	0.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	0	1	0.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				19.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	5	1	5
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	5	1	5
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	5	1	5
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	5	1	5
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	4	1	4
	Section B Subtotal				36
	Grand Total				55.0

Restoration Site: MS-9 West Trib. Kelsey Creek Wetland and Stream Enhancement

Project Description and Assumptions

Reduce invasive non-native plants, replant with natives, install LWD and improve floodplain in lower West Tributary stream corridor through the undeveloped portion of Kelsey Creek Park, south of SE 7th Pl.

	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 reduces artificial streambank armoring (yes=1, no=0)	0	0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)	0	0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	0	1	0.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	5	1	5.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	3	1	3.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	1	1	1.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				31.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	5	1	5
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	2	1	2
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	4	1	4
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	4	1	4
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	3	1	3
	Section B Subtotal				28
	Grand Total				59.0

Restoration Site: MS-10 Richards Creek Culvert Enhancement

Project Description and Assumptions

At interchange of Richard's Road and Lake Hills Connector, modify existing culverts that are partial barriers by placing low-flow deflectors on multichannel box culverts to increase depth of low-flow channel. Reduce invasive non-native plants, replant with natives, install LWD and reduce armoring in lower Richards Creek. Purchase parcels along the south side of Lake Hills Connector to protect hillside springs/seeps and forest parcels (PINs 0424059002 and 0424059114). One large lot between these two is already in Bellevue ownership. The above lots would connect the entire strip along south side of Richards Creek. Purchase buffers or conservation easements along lower Richards Creek.

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 reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	5	1	5.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	4	1	4.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	3	1	3.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	0	1	0.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				27.0

Section B: Feasibility and Public Involvement Considerations					
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	0	1	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	0	1	0
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	1	1	1
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	2	1	2
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	1	1	1
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	0	1	0
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				11
	Grand Total				38.0

Restoration Site: LW-4, Meydenbauer Creek Fish Passage

Project Description and Assumptions

Restore creek outfall to the lake to make it more fish friendly - install LWD for in-stream stabilization and fish habitat. Note: this project is on private property. The city has some easements for storm drainage. Downstream segment beginning just north of SE 3rd St. is an open channel accessible to fish. Approximately 2,300 feet long. Areas of revegetation along streambanks are possible (~2,000 square feet).

	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 reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	1	1	1.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	1	1	1.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	1	1	1.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	4	1	4.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	4	1	4.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	4	1	4.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	3	1	3.0
	Section A Subtotal				29.5

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	0	1	0
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	2	1	2
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	2	1	2
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	2	1	2
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	1	1	1
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				17
	Grand Total				46.5

Restoration Site: LS-4, Vasa Creek Acquisition and Restoration

Project Description and Assumptions

Purchase Boscole Property along north side of Vasa Creek & Vasa Park (3425 WLSP, PINs 1949700220, 1224059132, x037). Open/daylight Vasa Creek through private property. Position LWD in Vasa Creek incised channel sections. Revegetate stream shoreline with native trees and shrub cover (>4,000 s.f.).

	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 reduces artificial streambank armoring (yes=1, no=0)	100	1	2	10.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	0	1	1	5.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)	4000	1	1	5.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	3	1	3.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	4	1	4.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	4	1	4.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	3	1	3.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	1	1	1.0
	Section A Subtotal				52.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	1	1	1
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	1	1	1
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	3	1	3
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	4	1	4
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	2	1	2
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	1	1	1
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	1	1	1
	Section B Subtotal				19
	Grand Total				71.0

Restoration Site: PL-2, Restore Phantom Lake Inlet Channel

Project Description and Assumptions

Phantom Lake inlet channel - create > 100 feet of stream meanders, install LWD, replant with native veg (>4,000 s.f.), bioengineer shoreline. Private property owned by the Phantom Lake Bath and Tennis Club (15800 SE 24th St., PIN 0224059125). Location of stream meanders is approximately 400 feet from Phantom Lake 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 reduces artificial streambank armoring (yes=1, no=0)	100	1	2	10.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)	400	1	1	3.5
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	5	1	5.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	2	1	2.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	2	1	2.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	5	1	5.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	0	1	0.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	4	1	4.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	1	0.0
	Section A Subtotal				41.5

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	2	1	2
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	1	1	1
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	1	1	1
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	2	1	2
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	3	1	3
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	3	1	3
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	3	1	3
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				20
	Grand Total				61.5

Restoration Site: PL-4, Larson Lake Outlet Restoration

Project Description and Assumptions

Improve outlet channel (~500 feet) at Larsen Lake. Restore riparian vegetation (>4,000 s.f.) in the Larsen Lake stream channel, fix neighborhood inlet channel problems and bioswales, initiate a reforestation program at Larson Lake

	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 reduces artificial streambank armoring (yes=1, no=0)		0	2	0.0
A3	Project is within 1/4 mile of high-quality stream/riparian habitats (yes=1, no=0)		0	1	0.0
A4	Restores flood plain connectivity or extent of channel migration zone (yes=1, no=0)		0	1	0.0
A5	Potential for instream habitat improvement (pool/riffle formation, cover, etc.) and/or likelihood of improving local ecological functions (high=5, medium=3, low=0)	N/A	3	1	3.0
A6	Enter the level of ecological risk associated with not conducting restoration at the site. For example, is the success of other projects dependent on this project? (high=5, moderate=3, little=1, virtually none=0).	N/A	2	1	2.0
A7	Typical/average level of urbanization within overall channel segment 1/4 mile in each direction along the shoreline from the project area. Native vegetation and inaccessible - 5, native vegetation, parks open space with trails - 4, cleared parks or open space (grass) - 3, single family residential - 2, Multi-family - 1, Industrial - 0	N/A	3	1	3.0
A8	Potential hydraulic impacts (positive impacts/reduce energy or stabilize site = 5, neutral/unknown impacts = 3, negative impacts/flooding/erosion = 0)	N/A	3	1	3.0
A9	Potential to improve fish passage and migration characteristics (high = 5, low = 0)	N/A	0	1	0.0
A10	Potential to increase bed/bank stability (w/o artificial armoring) & decrease sediment supply (high = 5, low = 0)	N/A	0	1	0.0
A11	Potential to improve water quality (temperature, fine sediments &/or toxics/nutrients) (high = 5, low = 0)	N/A	3	1	3.0
A12	Project identified on, or is consistent with, the WRIA 8 Action List or other adopted watershed restoration plans & policies high priority = 5, local high priority = 3, low priority =1, no previous reference = 0)	N/A	0	1	0.0
	Section A Subtotal				21.0

	Section B: Feasibility and Public Involvement Considerations				
B1	Access and/or constructability (easy = 5, difficult = 0) (intermediate values ok, typ.)	N/A	4	1	4
B2	Regulatory requirements (simple permitting = 5, difficult permitting = 0)	N/A	4	1	4
B3	Cost effectiveness of the project (high = 5, low = 0)	N/A	3	1	3
B4	Liability Constraints – Infrastructure or other property improvements in the vicinity that could be negatively impacted by channel changes caused by or perceived to be caused by the proposed project. (none = 5, of little consequence = 4, of moderate consequence = 2, substantial and vulnerable = 0	N/A	5	1	5
B5	Maintenance/repair costs (low = 5, high = 0)	N/A	4	1	4
B6	Project will be consistent with or enhance existing public access, recreation, educational and interpretive functions, aesthetic values (high = 5, low = 0)	N/A	2	1	2
B7	Receptivity of landowner for having the project done on his/her property. (Eager, willing, and offering to contribute = 5, unknown = 3, known unwilling = 0)	N/A	5	1	5
B8	Amenability to community involvement for implementation, maintenance, and monitoring (high = 5, unknown = 3, low = 0)	N/A	3	1	3
B9	Possibility of cost sharing w/ other funding sources (grants/mitigation) (high = 5, low = 0)	N/A	2	1	2
	Section B Subtotal				32
	Grand Total				53.0

APPENDIX E

WRIA 8 Proposed Outreach and Education Actions

Draft Proposed Outreach & Education Actions for the Cedar Population (Tier 1 and 2 Subareas) (by WRIA 8 Public Outreach Committee)

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
C701	Riparian vegetation displaced by lawn, invasives, or exotics; water quality compromised by garden chemicals, metals, sediment.; higher water use at times when flows lowest.	Protect & restore riparian vegetation to provide sources of large woody debris/pools/riffles; protect& restore water quality, maintain instream flows	Shoreline property owners and general public	Update and distribute streamside living materials such as *Streamside Savvy*, *Salmon Friendly Gardening Practices, or Going Native*. Distribute to all shoreline property owners and make available at City Hall, libraries, and retail establishments such as home & garden centers.	High	Ongoing or have been distributed in past.	Low-Medium
C702	Riparian vegetation displaced by lawn, invasives, or exotics; water quality compromised by landscape practices; higher water use at times when flows lowest.	Protect & restore riparian vegetation to provide sources of large woody debris/pools; protect& restore water quality, maintain instream flows	Shoreline property owners	Offer shoreline property owners a workshop in streamside living. Include tips on landscape design/maintenance appropriate for riverside properties and shoreline stabilization (alternatives to vertical wall bulkhead design). Feature designers and contractors who have both experience and recognition in salmon friendly design.	High	Seattle Public Utilities and Snohomish County Streamside Stewardship Courses, Issaquah's Creekside Living workshops	Low
C703	Smaller parcels lost to development or possible habitat degradation without financial incentives to conserve that are offered to owners of larger parcels	Protect good salmon habitat that could provide source of shelter, pools, riffles, food	Shoreline property owners	Expand use tax credit incentives to encourage protection of smaller properties not currently eligible for existing programs.	High	Public Benefits Rating System, Open Space Current Use Tax (CUT)	Variable (Low budget
C704	Channel confinement from bulkheads, levees, and armoring; loss of riparian vegetation	Soften shorelines, restore floodplain connectivity and channel complexity	Shoreline property owners	Reduce permit fees for shoreline stabilization if design is salmon friendly (employing alternatives to dikes, levees, revetments, and vertical wall bulkheads). Also reduce permit fees (where applicable) for streamside restoration and removal & replacement of non-native vegetation.	High		Low

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
C705	Riparian vegetation displaced by lawn, invasives, or exotics; water quality compromised by garden chemicals, metals, sediment. Higher water use at times when flows lowest.	Protect & restore riparian vegetation; protect& restore water quality, maintain instream flows, stabilize slopes with native riparian vegetation. Increase likelihood of achieving these goals by bringing on board industry with a large influence over the landscapes within watershed.	Landscape Contractors	Offer educational opportunities to landscape designers/contractors on riparian design/naturescaping, local plant sourcing, proper installation techniques, invasive species, efficient watering techniques and use of compost to build healthy soils, control erosion and reduce need for supplemental irrigation. Augment training to accommodate English as Second Language participants.	High	Washington Assoc. of Landscape Professionals (WALP) trainings	Low - Medium (industry supported)
C706	Reduced forest cover; increased impervious areas/lack of infiltration/ground water recharge	Protect forest cover, reduce impervious surface area, increase infiltration back into soil and ground water recharge, decrease water use.	Design & Building Profession-als	Provide education to architects, landscape architects, engineers, and developers on sustainable building/design practices. Work with professional associations to highlight building practices that maintain watershed health. Include Low Impact Development, importance of maintaining canopy cover and limiting impervious surfaces.	High	City of Seattle Business & Industry Venture, King County Green Building, LEEDS, Construction Works and other Solid Waste Division outreach programs	Low – Medium
C707	Reduced forest cover; increased impervious areas/lack of infiltration/ground water recharge	Control stormwater runoff to more closely mimic natural hydrology, reduce paving and impervious areas, increase infiltration, protect forest cover	Design & Building Profession-als	Use recognition as a means to encourage more salmon sustainable designs and construction. In addition to professional association awards, expand recognition to include merit awards celebrated by popular magazines read by a broader sector of the general public. Promote through design competitions and media coverage the use of “rain gardens” and other low impact development practices that mimic natural hydrology. Combine a home/garden tour or “Street of Dreams” type event featuring these landscape	High	AIA, ASLA, Sunset Magazine, and Seattle Times Home and Garden awards, King County EnviroStars	

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
				/engineering treatments			
C708	Insufficient flow	Maintain instream flows	High-end water users, general public	Extend availability of water conservation incentive programs (such as rebates for efficient toilets, appliances, free indoor conservation kits, or free landscape irrigation audits) to decrease household and commercial water consumption.	High	Smart & Healthy Landscapes, Water Cents	Low
C709	Water quality compromised by garden chemicals, metals, sediment. Higher water use at times when flows lowest.	Protect water quality from degradation by pesticides and soil erosion, maintain instream flows by reducing water used for irrigation, increase organic content in soils to increase water holding capacity	General public	Target Natural Yardcare Neighborhoods Program to include more communities in the Cedar sub-basin. Expand curricula to offer more landscaping guidelines specific to shoreline residences.	High	Ongoing program	Medium - High
C710	Water quality degraded by cleaners, oils, grit, and paint; stream flows reduced by excessive water use	Protect and restore water quality and maintain flows	General Public	Coordinate with local business community to encourage the use of commercial car washes. (Water quality and salmon conservation could provide a new marketing angle; car dealerships could offer car wash coupons as bonus with car purchase.). Require that car kits be used for all parking lot fund raiser car washes, or offer carwash coupons or as more eco-friendly alternative funding source.	High	Puget Sound CarWash Association Coupon Program.	Variable - Low
C711	All conditions listed above Water quality degraded by toxics and garden chemicals; channel confinement; loss of riparian buffer; use of large woody debris, pools, riffles, reduced channel complexity; riparian vegetation displaced by lawn; high water use when flows lowest.	Increase public watershed literacy awareness of effects on water quality and habitat conditions.	General Public, but in particular, residents of Cedar sub-basin who may not be aware of existence of salmon right within urban area	Support and encourage efforts of Cedar River Naturalist Program to promote voluntary stewardship by focusing on education, monitoring, and maintenance of restoration sites (e.g. Cavanaugh Pond). Continue and expand messaging about how everyday personal actions affect salmon, the Cedar River, and entire watershed.	High	Ongoing program with successful track record since l998	Low-Medium

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
C712	Water quality degraded by toxics	Keep toxics out of water by providing safer alternative	General Public	Increase outreach about availability and locations of Hazardous Waste Collection sites and special collection events.	High	King County Local Hazardous Waste Management Program	Low (cheaper than dealing with illegal dumping)
C713	Water quality degraded by toxics, pesticides, metals, increased nutrient loads, sediments, loss of riparian buffer	Protect and restore water quality	General Public	Publicize emergency call numbers for public to report water quality and quantity problems, non-permitted vegetation clearing, non-permitted in-stream grading, and wood removal incidents.	High	Seattle Public Utilities Surface Water Pollution Prevention Hotline and website	Low
C714	Riparian vegetation displaced by lawn, invasives, and exotics, providing little food value, no source of LWD, or soil stability (sedimentation of gravel beds). Increased water use when flows lowest; increased use of pesticides on less resistant exotics	Restore native riparian vegetation to provide cover and terrestrial food source, reduce soil erosion and sedimentation in gravel beds, protect and restore water quality, maintain instream flows	Shoreline Property Owners and Community	Increase number of native plant salvages. Integrate these salvage opportunities into naturscaping classes; class participants can take home native plants for immediate use both within and surrounding sensitive areas.	High	King and Snohomish County Native Plant Salvage Programs, WSU Cooperative Extension Native Plant Salvage Project partnership with Puget Sound Action Team, Thruston & Mason Counties.	Low
C715	Channel confinement and loss of channel complexity from bulkheads, levees, and armoring; loss of riparian vegetation	Reduce channel confinement, restore riparian vegetation, and floodplain connectivity and channel complexity	Shoreline property owners, general Public	Demonstration Project. Locate property owner in publicly accessible (or viewable) area willing to remove bulkhead, levee, or stream bank armoring and replace it with more ecologically friendly design. Publicize efforts through various means. Demonstration project should contain elements that can be done by average shoreline property owner. Provide information on costs and advantages of alternate treatments.	High – Medium-		Variable
C716	Lack of large woody debris	Overcome public fear and resistance to providing and	Shoreline property owners,	Increase public awareness about the value of large woody debris and native vegetation for flood protection, salmon habitat, and healthy streams. Convey through	High-Medium	Existing King County and US Forest	Low

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
		maintaining woody debris along shorelines and subsequent source of cover, pools, riffles	general public	media (local newspapers, community newsletters); signage along publicly accessible "model" shoreline; and brochures such as King *County's Large Woody Debris and River Safety* and US Forest *Service Large Woody Material: The Backbone of a Stream*. Distribute to all shoreline property owners and to more of general public, especially recreational boaters. Brochures on LWD and boater safety could be made available at appropriate locations such as: the Renton Community Center (where some tubers put in or pull out), the Henry Moses Pool and Water Park, the Renton Public Library (also on the river), and retail locations where inner-tubes, canoes, and kayaks are sold or rented. *Where there is right-of-way or permission from private owners, consider installing kid-friendly signage which addresses the potential dangers that LWD can pose to boaters – along with the value it provides to salmon and the health of the river.. Where possible, locate signs at popular "put-in" and " take-out" spots along the river.*		Service brochures	
C717	All conditions listed above.	Reduce channel confinement, restore riparian vegetation, and floodplain connectivity and channel complexity	Shoreline property owners	Explore possibility of adding a disclosure to Real Estate Sales Agreement describing shorelines as sensitive areas, subject to rules and regulations of City and County. Look to model set by King County.	High – Medium	King County Dept. of Development and Environmental Services	Medium
C718	Water quality compromised by toxics, pesticides, metal fines, and nutrient overloads	Protect and restore water quality.	General Public	Work with auto parts retailers and gas stations to increase potential for collection of used motor oil/transmission fluids. Distribute Water Quality poster series which depicts impacts of everyday practices: washing car, driving car without maintenance, leaving pet wastes unattended, and improperly using lawn chemicals. Promote	High-Medium	Yes, King County Local Hazardous Waste Management *EnviroStars* program	Medium

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
				stormwater best management practices related to parking lot cleaning, storm drain maintenance, and road cleaning. Make printed material available in other languages.		Water Quality Consortium, Businesses for Clean Water	
C719	Channel confinement reduced channel complexity, loss of riparian vegetation	Increase public watershed literacy awareness of effects on water quality and habitat conditions,	Community	Increase citizen involvement in voluntary stewardship programs, focusing on restoration projects to meet the needs of the conservation plan through restoration, education, monitoring and restoration site maintenance	High – Medium	Various: Cedar River Naturalists, Sammamish ReLeaf, Stream Team; Water Tenders	Medium
C720	Water quality degraded by sediment, diminished ground water recharge, flashiness of floods and resultant bed scour	Protect and restore forest cover, increase infiltration, decrease intensity of flood conditions, protect water quality from sediment	General public	Increase outreach efforts about the benefits of trees and basin-wide forest coverage to protect water quality. Clarify issues about hazard trees. Offer seedlings (perhaps provided by a timber company) to replant after potentially hazardous trees are removed. Enlist the help of nurseries/home & garden centers on this education campaign. (Potential new Fathers' Day gift idea: Buy and plant a tree each year for a dad who loves salmon).	High in rural areas; Medium in urban/suburban areas.	Yes, Sammamish ReLeaf; Mountains-to-Sound Greenway; City tree ordinances.	Variable - Medium
C721	All conditions listed.	Protect forest cover, wetlands, headwaters, critical salmon habitat; increase public support for land acquisition and restoration projects, as well as landuse policies.	Shoreline property owners, general public	Identify and encourage shoreline neighborhood and community stewardship associations to foster the ethic of voluntary stewardship. Use these groups to build a bridge between property owners, agencies, and locals governments. Promote watershed health through grassroots messaging. Increased potential for media coverage when efforts initiated at community level.	Medium	Friends of Rock Creek Valley, Friends of Cedar River Watershed, Cedar River Council, Lake Forest Park Stewardship Foundation,	Low
C722	Loss of forest cover, organic content in soils, increase in impervious areas and increased run-off, degraded water quality flashiness during flood conditions.	Protect forest cover, reduce impervious area and runoff, increase infiltration, protect and restore water quality, maintain instream flows	Design/ Build Industry	Create a campaign that tracks demand among community residents for purchasing green homes and remodeling with green building strategies.	Medium	Green Car Program	Low
C723	Degraded water	Cultivate ethic of	Youth	Link education and community service stewardship	Medium	Environmental	Low

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
	quality, instream flows, habitat quality	environmental stewardship; increase watershed awareness and links between manmade habitat and environmental health.		projects. Expand to community outreach to community/technical colleges & universities.		Portal Seattle, Mercer Slough Interns, N. Shore Utility Tour, Water Tenders.	
C724	Riparian vegetation displaced by lawn, invasives, or exotics, providing little food value, source of large woody debris, or soil stability. Water quality compromised by garden chemicals, metals, sediment. Higher water use at times when flows lowest.	Replace lawn and other lower ecological value plantings with riparian buffers and native plants	General public	Encourage neighborhood garden tours of salmon friendly gardens. Help residents visualize alternatives to traditional (and often less eco-friendly) landscape treatments. Offer neighbors assistance with publicity, signage, and volunteer docents. Coordinate with neighborhood garden clubs.	Medium	Existing neighborhood garden tours. Volunteer docents by King County Master Recycler Composters and WSU Master Gardeners.	Low
C725	All conditions discussed above.	Increase awareness about effects of habitat on salmon and watershed health; increase support for land acquisition and restoration efforts as well as landuse policies; inspire shoreline property owners to make changes on their own property.	General public, but in particular Shoreline property owners	Create local informational TV spots that could run on the government cable channels. Focus on those habitat conditions threatening salmon that are affected by our daily personal practices, landscape design and management practices. Showcase good designs to provide models to emulate.	Medium – Low	Salmon Information TV, C-TV,	Variable
C726	All conditions discussed above.	Encourage Design/Build industry professionals to offer more salmon friendly/eco-friendly	Design & Building Profession-als	Use recognition as a means to encourage more salmon sustainable designs and construction. Coordinate with professional association awards in addition to popular magazine merit awards. Continue to recognize businesses that carry out procedures or use products	Medium – Low	American Institute of Architects, American Society of	Low

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
		design solutions.		that protect watershed health.		Landscape Architects, Sunset Magazine, and Seattle Times Home and Garden awards, King County Enviro. Stars.	
C727	All conditions discussed above	Increase watershed literacy and understanding of effects of habitat on salmon	Business Community and General Public	Coordinate with businesses along Cedar that can help with outreach goals. For example, Ivar's Seafoods could promote key messages about salmon conservation on their menus or though game cards. This seafood chain also has other restaurants located within WRIA 8 so it could be cost effective for them to do such a promotion.	Medium	Yes	Low
C728	Water quality degraded by toxics and metal fines.	Reinforce to students and the community the relationship between what goes down storm drain and watershed health via an affordable and easily implemented program.	General Public	Expand storm-drain stenciling program locally and basin-wide. Track locations and dates in a Cedar Basin database.	Medium - Low	Yes	Low
C729	Channel confinement, loss of riparian buffer: sources of large woody debris, pools, riffles; reduced channel complexity,	Inspire shoreline property owners to make changes on their own property by providing good examples; increase public support for land acquisition and restoration efforts as well as landuse policies.	Shoreline property owners and general public	Use government cable channels to follow progress of the site specific restoration projects. Use of video to document projects before, during, and after restoration. Distribute resulting programs to libraries, schools, and communities groups.	Low	Salmon Information TV	Variable
C730	All conditions discussed above.	Improve watershed awareness and	Youth	Focus environmental/science curricula on local watershed issues, with particular emphasis on key	Low-Future	Yes	Medium

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/ Model	Level of Financial Commit.
		possibly prevent future habitat degradation by instilling a better understanding of interrelationship between habitat, daily actions, and watershed health.		factors limiting the Cedar Chinook population.			

Draft Proposed Outreach & Education Actions for Lake Washington
(by WRIA 8 Public Outreach Committee)

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
C729	Shoreline hardening, riparian vegetation displaced by lawn, invasives, or exotics with low ecological value, overwater structures creating sharp light contrast, water quality degraded by effects of landscape practices	Increase awareness that the lakeshore is also a nursery for juvenile salmon. It's possible to make "home improvements" that can benefit both property owner and salmon. [people pets, and planet]	Lakeshore property owners	Promote concept of living with the lake, instead of just on it through public messaging. Foster idea of sharing the shoreline with other species that inhabit the lakeshore. Carry out through workshops, literature, and development of education and marketing campaigns	High	Lakeside Living Workshop Series; King County Lake Stewardship Program	Variable
C730	Shoreline hardening, riparian vegetation displaced by lawn, invasives, or exotics with low ecological value, overwater structures creating sharp light contrast, water quality degraded by effects of landscape practices	Reduce conditions favored by predator species; protect & restore water quality.	Lakeshore property owners	Offer lakeshore property owners a series of workshops on lakeshore living: natural yard care; reduction of lawn size, shoreline buffer planting design/noxious weed management; alternatives to vertical wall bulkheads; salmon friendly dock design; aquatic weed management; environmentally friendly methods of maintaining boats, docks, decks; porous paving options	High	WRIA 8/KCD Lakeside Living Lakeshore Property Owner Workshops, Seattle Public Utilities and Snohomish County Creek Stewardship Programs, City of Issaquah's Creekside Living Program, Natural Yard Care Neighborhoods	Medium-High

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
C731	Forested parcels threatened by development, (even though difficult to build on); creek mouths degraded or unrecognizable (culverted); riparian vegetation replaced by invasives infested along shoreline	Protect and/or restore forest land, critical areas such as wetlands and shallow water rearing habitat. Promote watershed health through grassroots messaging.	Community, but especially lakeshore property owners.	Identify and encourage shoreline neighborhood and community stewardship associations. Use to foster the ethic of voluntary stewardship, set examples for other neighbors to follow, enlist community support to acquire and restore habitat, and to build a bridge between property owners, agencies, and local governments. Increase potential for media coverage when efforts initiated at community level.	High	Lake Forest Park Stewardship Foundation, Save Lake Sammamish, Denny Creek Neighborhood Association	Low
C732	Riparian vegetation displaced by lawn, invasives, or exotics; water quality compromised by garden chemicals, metals, sediment; elevated water temperatures due to increased water use at times when flows lowest.	Protect and improve rearing and migratory habitat; protect and restore water quality	Lakeshore property owners, general public	Update where necessary salmon-friendly educational materials such as *Salmon Friendly Gardening Practices, Going Native, Watershed Waltz and Sammamish Swing* booklets. Print and distribute to the following prioritized audiences: 1)lakeshore property owners 2) Public places such as libraries, city halls, community centers and where permitted, at home improvement centers and other major retail establishments.	Medium - High	Yes	Low-Medium
C733	Riparian vegetation displaced by lawn, invasives, or exotics; water quality compromised by garden chemicals, metals, sediment.; elevated water temperatures due to increased water use at times when flows lowest.	Protect & restore shoreline buffer plantings to provide source of food & shelter; protect& restore water quality, maintain baseflows of feeder streams in order to provide source of cooler water	Lakeshore property owners	Modify more for “lakeshore living” the existing “Streamside Living Welcome Wagon” program in which residents welcome new homeowners to the neighborhood and provide information concerning “salmon friendly” yard care, lakeshore planting tips, water-wise gardening.	Medium	WaterTenders Streamside Living Welcome Wagon	Low-Medium
C734	Solid overwater surfaces that create sharp light contrast and dark shadows,	Reduce severity of predation on juveniles	Lakeshore property owners	Explain about mutual value of mesh docks, smaller piling sizes, and community docks to salmon and property owners: Reduced predation for fish; reduced maintenance for homeowners, opportunity to watch small	High		Medium

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
	conditions favored by predators.			fish swimming under the dock, and architectural interest provided by new salmon-friendly elevated dock bridges. Outreach could be carried out, for example, by creating a boat owner education campaign. Mailings could be sent with boat registration tab renewal or with property tax notice for shoreline property owners; by literature at marine, sporting goods and hardware stores, at boat shows; and through workshops to homeowners and marine construction industry. Coordinate outreach through appropriate licensing agencies.			
C735	Sharp light contrast and dark hiding spots created by overwater structures, conditions favored by predators	Reduce severity of predation on juveniles by reducing number of docks.	Lakeshore property owners	Offer financial incentives for community docks in terms of reduced: permit fees, loan fees/percentage rates, taxes and permitting time, in addition to reduced construction costs	High		low
C736	Steep shoreline gradient with coarse aggregate caused by wave action on vertical wall bulkheads	Create sandy, shallow water habitat needed by juveniles.	Lakeshore property owners	Utilize niche marketing to promote a "Build a Beach" campaign. Clarify how hardened shorelines prevent the development of shallow, sandy beaches and how alternative treatments can provide these amenities. Of benefit to salmon and to homeowners desiring more easily accessible shallow beach and aesthetics of a cove. Work with media (including design and lifestyle magazines) and real estate community (articles in real estate sections of papers) as well as construction, and design industry professionals	High	Pro Bono advertising campaign development – The Coalition for Drug Free America ad campaign). Bert the Salmon ads	Variable, but low able to get Pro Bono assistance .
C737	Lack of shelter provided by large and small woody debris due to lack of shoreline vegetation; steep dropoffs from shoreline hardening	Reduce conditions favored by predator species.; increase shoreline buffer vegetation and sources for large and small woody debris	Lakeshore property owners	Alternative marketing campaign: work with advertising industry and media. Do a play on "Child Haven" promotion. *Fry Haven*? Contrast picture of a sandy shallow shoreline containing woody debris hiding Chinook juveniles with that of a deep gravelly shoreline with evil looking predator species lurking, gobbling up young Chinook. [A "Chinook need safe places too" idea]. Possibly graphics in style of *Finding Nemo*. Create a marketing niche with landscape related industries to inform property owners about feeding requirements of out-migrating salmon off their beach. Validate need for native vegetation along the shoreline in	High	Various Bert the Salmon Ad campaigns	

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
				how it provides food source for fish and other wildlife. Perhaps an "Are you starving your neighborhood salmon?" campaign that addresses impacts of denuding shorelines of woody and emergent vegetation could be developed. Or maybe flip to more positive "Have you fed your neighborhood salmon today?" Heighten awareness that it is the young juvenile fish that are at risk. (Humans are often more receptive to saving children). Possibly do a play on *Save the Children* charity campaign, showing stressed conditions for juvenile Chinook trying to rear and migrate through lake.			
C738	Lack of appropriate shoreline vegetation, shoreline hardening by vertical wall bulkheads and rip rap walls; docks that create stark light contrast and hiding spots for predators	Reduce conditions favored by predator species by "softening" shoreline; increase shoreline buffer vegetation and sources for large and small woody debris, replace the many docks with more salmon friendly designs	Lakeshore property owners	Demonstration Project. Locate property owner in publicly accessible (or viewable) area willing to remove bulkhead, or shoreline armoring and replace it with more ecologically friendly design. Similarly, renovate existing dock with more salmon-friendly design. Publicize efforts through various means. Demonstration project should contain elements that can be done by average shoreline property owner. Provide information on costs and advantages of alternate treatments.	Medium – High	Redmond River Walk, Juanita Beach, Classic Nursery, Lark Forest Park Stewardship projects	Medium
C739	Coarse substrate, steep slope, dark hiding spots for predators caused by bulkheads and solid surface docks.	Reduce conditions favored by predator species; increase shoreline buffer vegetation and sources for large and small woody debris	Lakeshore property owners, general public	Document video progress on a range of restoration projects from planning to post-construction. Air on government cable channels, in shoreline property owner classes and for libraries, schools, communities groups.	Medium		Variable
C740	Coarse substrate, steep slope, dark hiding spots for	Overcome resistance of shoreline property	Lakeshore property owners,	Combine recreation and education. Organize a Bulkhead Alternatives and Salmon Friendly Dock Design tour to see good examples of design on a residential scale.	Low	King County and People for Puget Sound	Variable

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
	predators caused by bulkheads and solid surface docks.	owners to make such drastic changes to their shorelines by offering local examples of alternative treatments. Ultimate goal is to reduce conditions favored by predator species	general public	Organize as boat tour so properties can be viewed from water (less invasive to property owner). Alternatively, create a self-guided water tour (most shoreline property owners have their own boats) with GPS coordinates to help locate example property.		shoreline homeowner workshops (pilot programs)	
C741	Shoreline hardening, riparian vegetation displaced by lawn, ivasives, or exotics with low ecological value, overwater structures creating sharp light contrast, water quality degraded by effects of landscape practices	Protect and improve water quality; habitat quality - or- Protect & restore riparian vegetation to provide terrestrial food source and shelter; protect& restore water quality, maintain instream flows upstream to provide source of cooler water	Landscape Contractors	Offer professional workshops to landscape designers & contractors on environmentally-friendly lakeshore landscaping. Include topics such as shoreline buffer function and design, native plant selection, installation techniques, use of compost to build healthy soils, and noxious weed control. Determine need for training for non-English speaking participants	Medium – High	Washington Assoc of Landscape Professionals (WALP) Trainings by King County Local Hazardous Waste Management Program	Low
C742	Riparian vegetation displaced by lawn. Water quality compromised by garden chemicals, metals, sediment.	Increase shoreline planting; reduce lawn size to at least have buffer between lawn and shore.	Lakeshore property owners	Work with landscape, design, and real estate industries to sell benefit of “privacy” to homeowners. With restoration of shoreline buffer planting homeowners can increase privacy without sacrificing views. Promote idea of “framed views” as a more sophisticated landscape aesthetic.	Medium - High	1998 Lake Sammamish Shoreline Prop owners workshop Pilot Program	
C743	Lack of shoreline buffer vegetation, increased water use when levels lowest;	Increase native vegetation and source of shelter and food for fish;	Lakeshore property owners , Community	Increase number of native plant salvages where landowners can take plants back to their yards. Publicize opportunity to drop off unwanted native plants at various parks surrounding the lake.	Low – Lake Washin gton	King County Native Plant Salvage Program	

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
	increased perceived need for pesticides	reduce erosion and need for supplemental irrigation (once established)			Low-Med Samma mish		
C744	Lack of appropriate shoreline vegetation	Increase shoreline vegetation and reduce non-native vegetation & spread of invasives	Lakeshore property owners	Reduce permit fees (where applicable) for shoreline restoration, removal & replacement of non-native vegetation	Medium		Low
C745	Water quality degraded by toxics, pesticides, increased nutrient loads, sediment from construction sites; loss of riparian vegetation	Protect and improve water quality	General Public	Publicize emergency call numbers for public to report water quality problems, water diversion from lake for irrigation, , non-permitted vegetation clearing, or tree overspray (pesticide) related incidents.	High	King County Water & Land Division, Seattle Public Utilities Hotlines	Low
C746	Reduced forest and canopy cover; increased impervious areas, decreased infiltration; more flashiness of floods due to intensity of runoff	Protect and improve water quality; reduce quantity of water entering lake: during flood conditions can mix with sanitary sewer flows and enter lake.	General public, but property owners in particular	Increase outreach concerning the benefits of trees and basin-wide forest coverage to protect water quality. Include such actions as significant tree ordinance and information that links canopy cover to storm water issues. Provide clarification on hazardous tree issues. Offer seedlings to replant after hazard trees are removed. Coordinate with commercial nurseries to expand outreach about benefits of trees to salmon.	Medium-High	Sammamish ReLeaf; Mountains-to-Sound Greenway; City tree ordinances, King County Forestry Program	Low
C747	Elevated lake temperatures, lack of cool water sources from feeder streams, insufficient flows in feeder streams to provide source of cooler water, lack of ground water recharge, water	Protect forest cover, reduce paving an d impervious areas, increase infiltration and conditions that mimic natural hydrology, protect water quality	Design, engineering, and construction industries	Provide education to architects, landscape architects, engineers, and developers on sustainable building/design practices. Work with professional associations to highlight building practices that maintain watershed health, importance of maintaining canopy cover and limiting impervious surfaces. Provide incentives to builders that demonstrate a use ecologically sensitive designs and/or techniques. Provide professional workshop and tours focusing on	Medium - High	WALP Trainings by King County Local Hazardous Waste Management Program. Stoneway	Variable

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
	quality, habitat quality			sustainable building/design practices to architects, landscape architects, engineers and developers. Build partnerships with professional associations to highlight the benefits of practices that maintain watershed health. Promote through design competitions and media coverage the use of “rain gardens” and other low impact development practices that mimic natural hydrology. Combine a home & garden tour or “Street of Dreams” type event featuring these landscape and engineering treatments.		Concrete Council for Sustainable Development outreach on pervious pavement. Port Blakely Communities, Issaquah partnerships, Built Green, Sustainable Seattle, LEEDS	
C748	Reduced forest cover, increased impervious area, decreased infiltration and ground water recharge, water quality degraded by runoff	Protect and improve water quality and quantity to more closely mimic natural hydrology	Developers, Architects, Engineers Building Professionals	Use recognition as a means to encourage more salmon sustainable designs and construction. Coordinate with professional association awards, in addition to popular magazine merit awards. Continue to recognize businesses that carry out procedures or use products that protect watershed health. Promote through design competitions and media coverage the use of “rain gardens” and other low impact development practices that mimic natural hydrology. Combine a home/garden tour or “Street of Dreams” type event featuring these landscape /engineering treatments	Medium	AIA, ASLA, Sunset Magazine, and Seattle Times Home and Garden awards, King County Enviro Stars.	Low
C749	Water quality degraded by metals, toxins, pesticides, and nutrient overloads	Protect and improve water quality	General Public	Create a program that addresses impact of car maintenance and offers alternatives that help protect watershed health and water quality. More actively distribute – poster series developed by multi-jurisdictional Water Quality Consortium. Series depict water quality implications of everyday activities such as car washing, ignoring car maintenance, pet wastes. Work with auto parts retailers and gas stations to increase potential for collection of used motor oil/transmission fluids.	Medium	King County Local Hazardous Waste Mgmt Program Water Quality Consortium, Businesses for Clean Water	variable

Proj #	Habitat Condition	Desired Outcome	Target Audience	Proposed Action	Priority	Proven Track Record/Model	Level of Financial Commit.
				Make outreach materials available to non-English speakers.			
C750	Water Quality degraded by toxics and metal fines	Protect and restore water quality	General Public	Build partnerships and seek outreach opportunities with commute trip reduction programs to convey the impacts of automobiles on water quality and salmon habitat. Encourage alternative transportation choices.	Medium	Commute Trip Reduction Programs	Low - Medium
C751	Water Quality degraded by toxics and metal fines degraded by metals and toxins	Protect and restore water quality	General Public, schools/non-profits and Charity groups – and business that offer to host a carwash.	Coordinate with local business community to encourage the use of commercial car washes over washing at home on street or in parking lots. Encourage alternatives to charity cash washes via commercial car wash coupon books or extend car wash kits throughout entire watershed. Make requirement that all charity car washes use coupons or car wash storm drain kit. Distribute "alternative community fundraising idea" brochure to volunteer fundraisers.	Medium - High	Yes, various cities' car wash kit programs. Puget Sound Carwash Association	Low
C752	Water quality degraded by metals and toxins	Protect and restore water quality	Businesses, property management companies, homeowners associations.	Educate and support retail business and homeowner associations on stormwater best management practices specifically related to parking lot cleaning, storm drain maintenance, and boat cleaning.	Medium	Ongoing programs by various jurisdictions within WIRA, e.g. Issaquah, Redmond	Low
C753	Reduced baseflows from streams that feed into lake and subsequent elevated water temperatures in lake	Protect and restore sources of cool water	High end water users and general public	Extend availability of water conservation incentive programs such as rebates for efficient toilets, appliances, soaker hoses, free indoor conservation kits, or free landscape irrigation audits to decrease household and commercial water consumption.	High	Smart & Healthy Landscapes, Water Cents, and other utility incentive programs	Low

APPENDIX F

Shoreline Restoration Concept Plans

City of Bellevue Shoreline Restoration Concept Plans

DRAFT

OVERVIEW

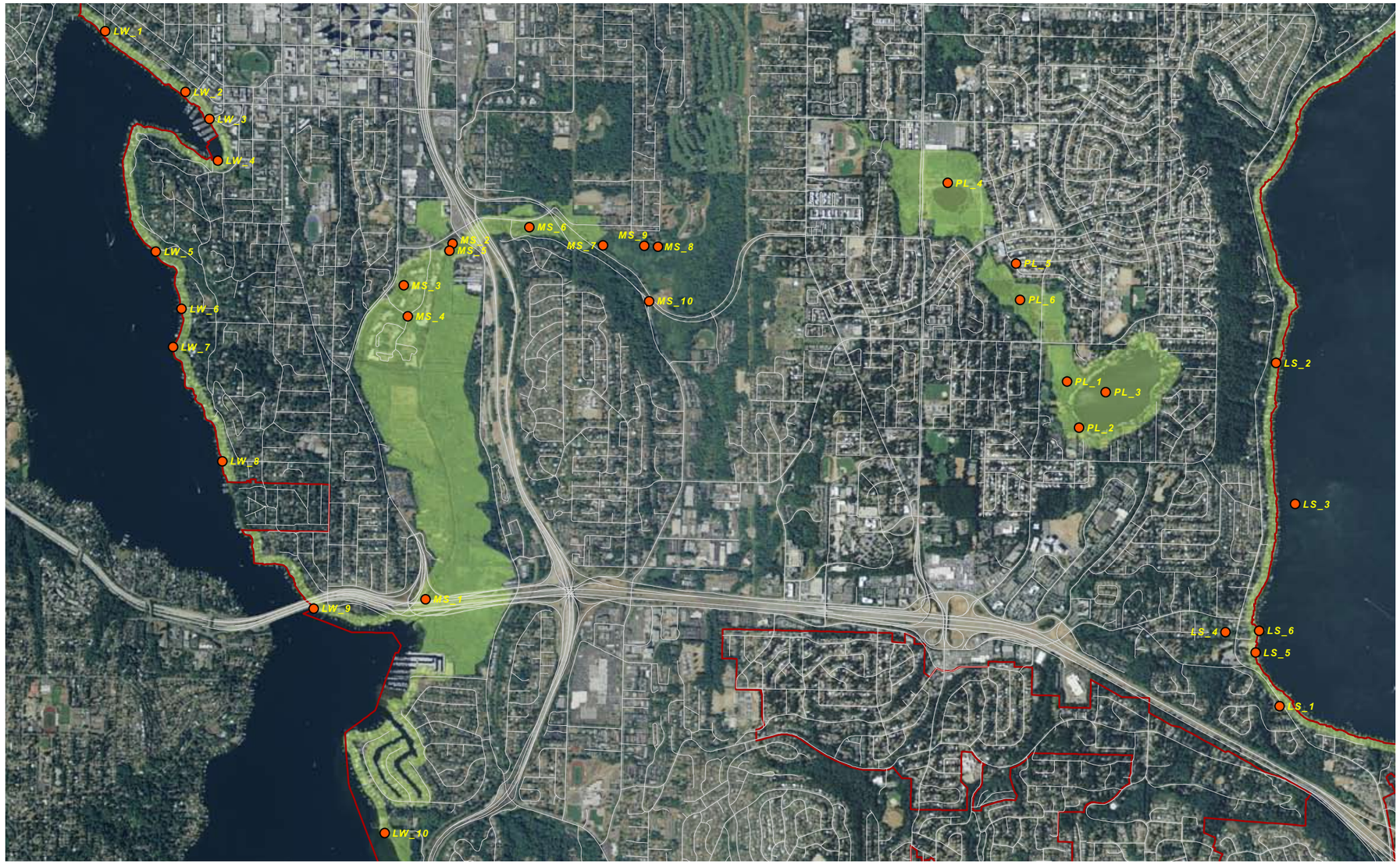
The city identified six potential restoration projects for further development of conceptual designs through the project prioritization and ranking process. These are identified in the City of Bellevue Shoreline Restoration Plan. These projects were selected based on the potential for ecological benefits and the feasibility of implementation. Conceptual designs were developed with consideration to present condition, potential for improved ecological function, and public use interests at each site. The designs were developed to address Bellevue's environmental protection and restoration goals, by restoring shoreline habitat functions, enhancing public access and providing interpretive opportunities. These sites are:

1. LW.5 - Chism Beach Park
2. LW.2 - Clyde Beach Park
3. LW.10 - Newcastle Beach Park
4. LS.2 - West Lake Sammamish Shoreline
5. MS.4 - Mercer Slough Bellfield Office Complex
6. PL.4 - Larsen Lake Outlet Channel

SHORELINE RESTORATION PLAN GOALS

1. Provide a balance between the protection and enhancement of shoreline ecological functions and the desire of the community to preserve and improve public access and water-oriented recreation opportunities in this unique environment.
2. Maintain, restore or enhance watershed processes, including sediment, water, wood, light and nutrient delivery, movement and loss.
3. Maintain or enhance fish and wildlife habitat during all life stages and maintain functional corridors linking these habitats.

Note: The shoreline restoration concepts presented herein have been developed as an appendix to the Shoreline Restoration Plan to depict examples of restoration opportunities along Bellevue's shoreline. Their depiction does not imply or infer any regulatory obligation to implement these concepts. These plans do not represent final designs nor have they been subjected to a public involvement process appropriate to the scope of the project and the site. Their realization depends on a number of factors beyond the scope or jurisdiction of the Shoreline Master Program Update, which include but are not limited to: financial resources, property owner approval, public involvement, and site-specific conditions.



Shoreline restoration sites identified in *City of Bellevue Shoreline Restoration Plan: Lake Sammamish, Lake Washington, Phantom Lake, Kelsey Creek and Mercer Slough, July 2010.*

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LW.5 Chism Beach Park Shoreline Restoration

EXISTING CONDITIONS

The proposed project area extends northwest from the existing pier to the northern edge of the park. The scope of the conceptual design is limited to the northern portion of the park in order to focus on restoring particular shoreline elements, but restoration opportunities exist throughout the park. The project area shoreline is armored with 3 to 5-foot tall rip-rap (photos 1 and 2), which reflects wave energy and eliminates shallow-water nursery habitats for small fishes, like juvenile salmon. Immediately landward of the rip-rap bulkhead is a large concrete walkway along the southeastern side of the project area, and mown lawn to the northwest. A pier extends over the lake from the southeastern edge of the concrete walkway. Aside from a small wooded area, shoreline vegetation is primarily mown grass.

PROJECT GOALS

1. Improve public access and provide educational opportunities through interpretive areas.
2. Improve shoreline habitat for native fish by:
   - Restoring a gradual lakeshore gradient to provide shallow water habitat and attenuate wave energy.
   - Enhancing the complexity of the shoreline by adding woody debris and vegetative cover.
   - Providing shade, organic debris, and insect prey from vegetation overhanging the shoreline.
   - Reducing the impacts of overwater structures on the nearshore environment.
3. Improve water quality by reducing the amount of nutrients and contaminants entering the lake.
4. Improve upland wildlife habitat through native planting.

RESTORATION STRATEGY

Improve public access and educational opportunities
Areas of direct shoreline access will be created to concentrate shoreline users in specific areas while allowing for the restoration of other shoreline areas through the planting of native vegetation. Interpretive signs will educate users about native fish and wildlife that use the park's shoreline and their habitat needs, as well as provide details on shoreline restoration techniques, such as gradient re-establishment.

Restore nearshore habitat
The conceptual design replaces rip-rap with a more natural shoreline gradient, stabilized by anchored large wood, boulders and a well-graded mix of gravel. Regrading the shoreline will help attenuate wave energy, restore sediment transport processes, and provide shallow water shoreline habitat for native fish. The large wood with attached root-wads will provide habitat functions through cover and habitat complexity for small fish, amphibians, and insects. Note: The plan depicts only a portion of the overall restoration opportunity along the shoreline of Chism Beach Park.

Reduce impacts of overwater cover
The existing pier will be relocated to a more central, accessible location along the south side of the swimming beach. The rebuilt pier will feature grated decking and widely spaced pilings to reduce nearshore shading and limit habitat for non-native fish.

Enhance upland wildlife habitat
The large existing concrete walkway will be set back and replaced by a smaller pervious 'nature path.' Shoreline revegetation will provide habitat, hydrologic, and vegetative functions by shading the nearshore, providing a source of organic debris and insect prey to the lake, and improving the filtration capacity of the area.

Aerial view of Chism Beach Park (Photo source: WA Dept. of Ecology, 2007)

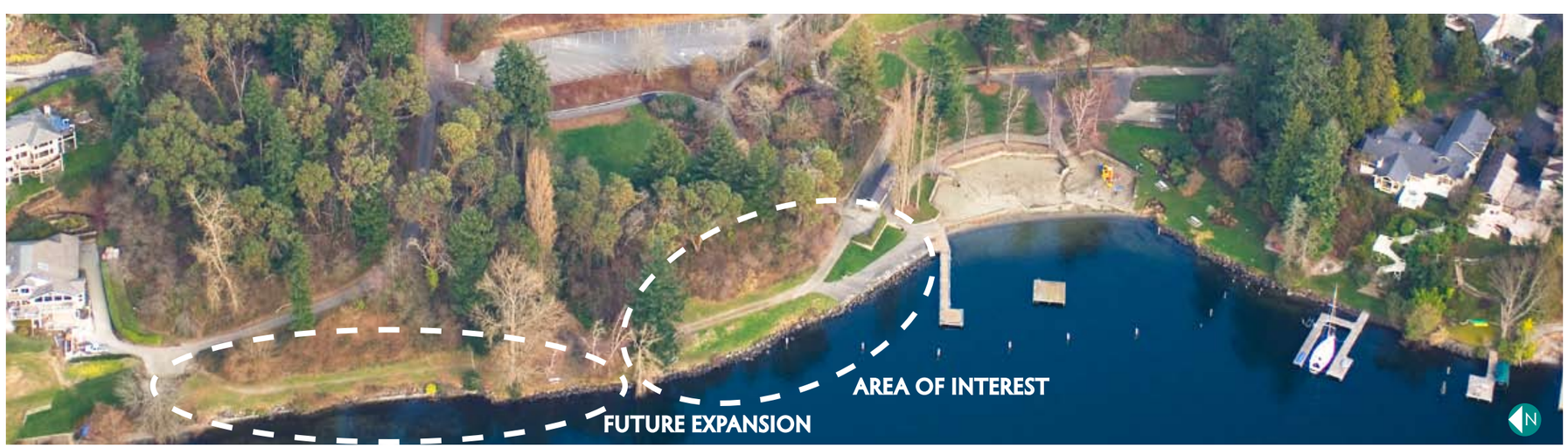

Photo 1. Failing rip-rap bulkhead north of the swimming beach

Photo 2. Typical existing conditions: rip-rap and concrete bulkheads with sparse vegetation (lake level is 6" below OHWM)

Photo 3. Existing shoreline condition at northern end of park

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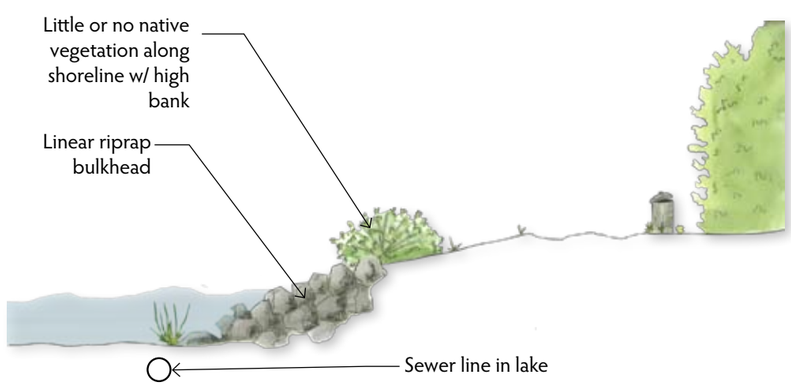
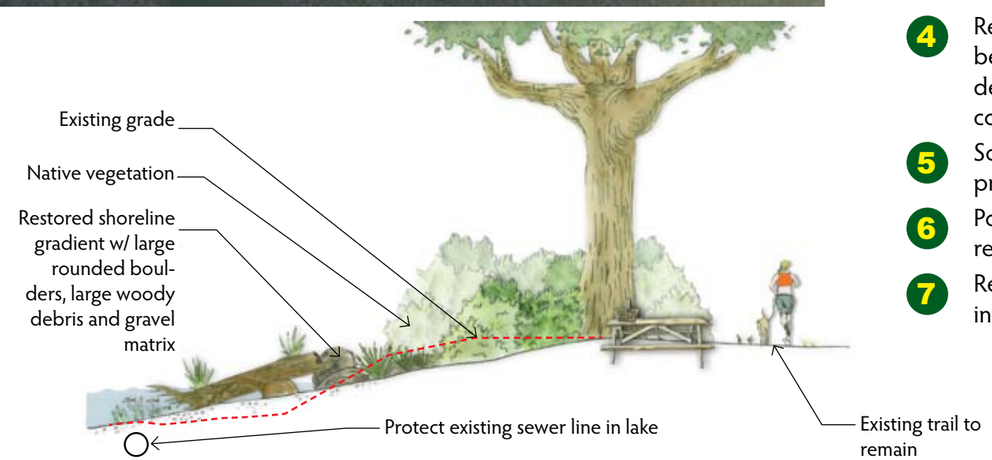
Note: This illustration is conceptual and a final design would be developed based on available financial resources, property owner approval, public input, and site-specific conditions.

Existing conditions; proposed restoration area in blue.

1. Replace existing rip-rap with large woody debris, boulders, and fish-friendly gravels
2. Remove invasive species and revegetate shoreline with native vegetation
3. Relocated path allows wider shoreline buffer and reduces impervious surfaces adjacent to water by using pervious materials
4. Relocate existing pier south of swimming beach to better enclose swimming area. Rebuild with grated decking and fewer piles to reduce over-water coverage
5. Soft surface trail through restored shoreline provides interpretive opportunities
6. Potential for additional lake access at smaller, restored beach areas
7. Remove invasive weeds along hillside and interplant with native species



Existing conditions



Proposed cross section

THE WATERSHED COMPANY

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LW.1 Clyde Beach Park Shoreline Restoration

EXISTING CONDITIONS

The existing park is primarily composed of open lawn area, separated by concrete paths that lead the park user to a large concrete bulkhead. The entire 160 feet of shoreline in the park is either concrete bulkhead or concrete steps (see photos 1 and 2). This creates a steep, uniform shoreline that reflects wave energy and eliminates shallow nearshore habitat. The park features two piers. The pier to the west functions as a swimming pier. A large pier and boathouse is located along the eastern property line; these are in structural disrepair and may be removed. The shoreline presently lacks vegetation, and the upland areas of the park are dominated by lawn and impervious surfaces (photo 3).

PROJECT GOALS

1. Improve public access for recreational use while providing a demonstration of shoreline restoration.
2. Improve shoreline habitat for native fish by:
   - Restoring a gradual lakeshore gradient to provide shallow water habitat and attenuate wave energy.
   - Enhancing the complexity of the shoreline by adding woody debris and vegetative cover.
   - Providing shade, organic debris, and insect prey from vegetation overhanging the shoreline.
   - Reducing the impacts of overwater structures on the nearshore environment.
3. Improve water quality by reducing the amount of nutrients and contaminants entering the lake.

RESTORATION STRATEGY

Restore nearshore habitat

The project will remove the concrete armoring along the shoreline and create a more natural beach and lakeshore gradient. This gradual shoreline will help attenuate wave energy and restore sediment transport processes. Large wood and boulders will provide refuge opportunities for native fish and amphibians.

Improve public access opportunities

A large sandy beach area will replace lawn that presently extends up to the concrete bulkhead. The beach will concentrate park users in the central area and allow for shoreline revegetation on either side.

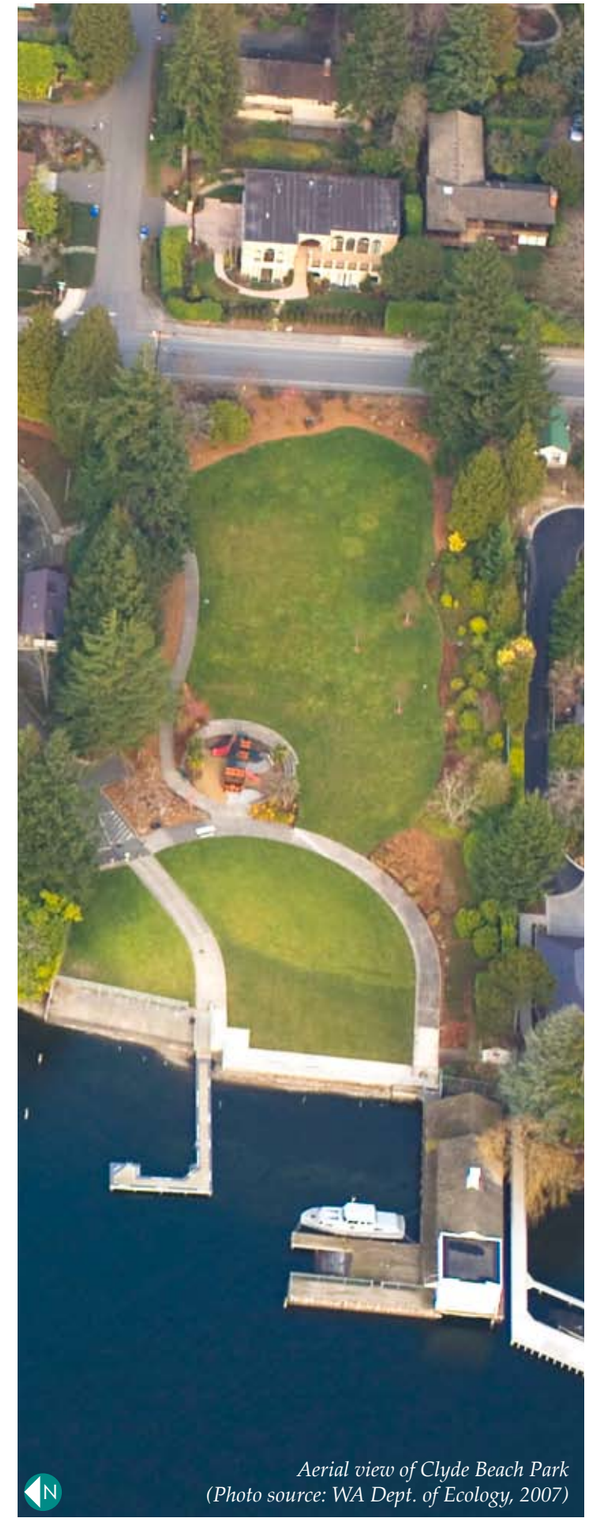
Reduce impacts of overwater cover

The conceptual design includes the removal of both existing piers and installation of a reconfigured pier that will consist of grated decking and widely spaced pilings to reduce shading in the nearshore area. The replacement pier will better enclose the swimming area while improving shoreline aesthetics.

Photo 1. Existing shoreline with high bank concrete bulkhead and concrete stairs (lake is ~6″ below OHWM)

Photo 2. Bulkhead currently covers the entire shoreline at the park

Photo 3. Upland areas consist entirely of lawn with no native vegetation



Aerial view of Clyde Beach Park (Photo source: WA Dept. of Ecology, 2007)

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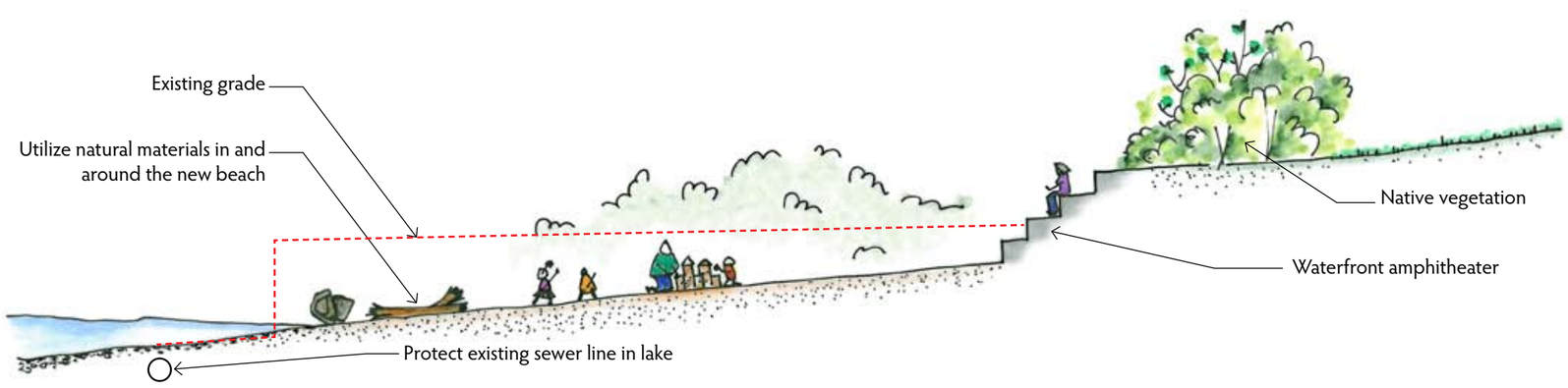
Note: This illustration is conceptual and a final design would be developed based on available financial resources, property owner approval, public input, and site-specific conditions.

Existing conditions

1. Replace existing bulkhead with large woody debris, large boulders, and fish-friendly gravels
2. Revegetate portions of the shoreline with native vegetation
3. Relocate existing pier and remove boathouse complex to south to better enclose the swimming area and reduce over-water coverage. Utilize grated decking on new pier
4. Remove existing boat house. New pier is constructed with grated decking
5. New shoreline amphitheater constructed of sand and gravel allows easier access to the water and gathering space. Location concentrates user access to one area
6. Maintain portions and slope of existing lawn to preserve current usability



Proposed cross section

Example of a grated pier allowing light to penetrate underneath the deck

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LW.10 Newcastle Beach Park Shoreline Restoration

EXISTING CONDITIONS

This park features a large swimming pier with treated wood decking and solid 12" wide by 48" deep wooden skirting that reduces light penetration into the lake (photo 1). A large concrete and timber bulkhead, backed by a wide concrete path (photo 2), just south of the pier creates an abrupt, tall vertical shoreline that reflects wave energy and eliminates shallow-water nursery habitats for juvenile Chinook salmon and other small fish. Adjacent to this bulkhead is a mounded lawn area. North of the pier is a large, sandy swimming beach.

A forested wetland and small stream with high-quality natural shoreline habitat lies just south of the concrete bulkhead (see photo 3).

PROJECT GOALS

1. Improve shoreline habitat for native fish by:
   - Restoring a gradual lakeshore gradient to provide shallow water habitat and attenuate wave energy.
   - Enhancing the complexity of the shoreline by adding woody debris and vegetative cover.
   - Providing shade, organic debris, and insect prey from vegetation overhanging the shoreline.
   - Reducing the impacts of overwater structures on the nearshore environment.
   - Improving migration conditions for juvenile salmon.
2. Improve public access and provide educational opportunities through interpretive areas.
3. Improve water quality by reducing the amount of nutrients and contaminants entering the lake.
4. Improve upland wildlife habitat through native planting.

RESTORATION STRATEGY

Restore nearshore habitat
The conceptual design creates a transition area between natural beach to the south and the active recreational area within the park. The bulkhead south of the pier will be removed and the area will be regraded to create a natural, shallow beach gradient, stabilized by large wood and boulders. The restored shoreline will improve wave attenuation and sediment transport processes, as well as increase shallow water habitat for native fish. The project will provide park users with a quieter, more natural beach alternative to the swimming beach on the north side of the pier.

Improve public access and educational opportunities
Access to the lake will be improved by removing a bulkhead and rip rap that currently impedes users from contacting the water. The restored shoreline will allow direct access to the lake while improving nearshore habitat. The remaining, smaller lawn area will include interpretive signs to educate park users on the value of shoreline restoration and native vegetation, as well as details on shoreline restoration techniques.

Reduce impacts of overwater cover
The pier deck will be replaced with a grated surface, and skirting along the existing pier will be modified to allow light penetration and juvenile salmon migration along the nearshore area, while continuing to protect the swimming beach from wave energy. Large wood and boulders will be used to reinforce the area where the restored beach will meet the existing pier.

Enhance upland wildlife habitat
The existing grass mound will be graded back, and native trees and shrubs will be planted along the lakeshore. Native vegetation will provide rearing, nesting, and foraging opportunities for wildlife, and will improve water quality by filtering nutrients and contaminants.

Aerial view of Newcastle Beach Park (Photo source: WA Dept. of Ecology, 2007)

Photo 1. Skirting along the pier reduces light penetration and allows additional fish predation

Photo 2. Large, tall concrete bulkhead armors the shoreline

Photo 3. South of the concrete bulkhead the shoreline remains natural with woody debris, sand and a stable beach gradient

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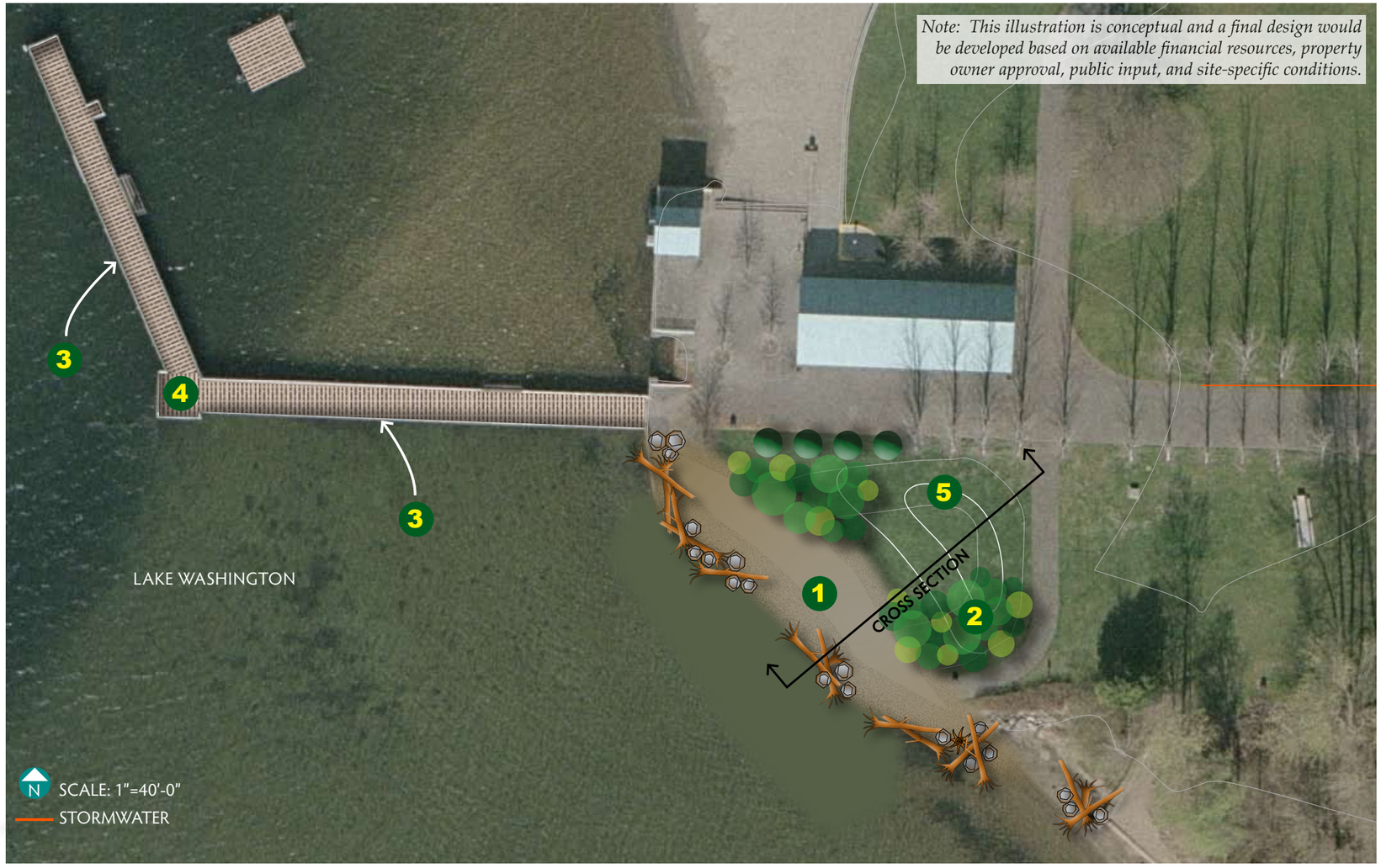
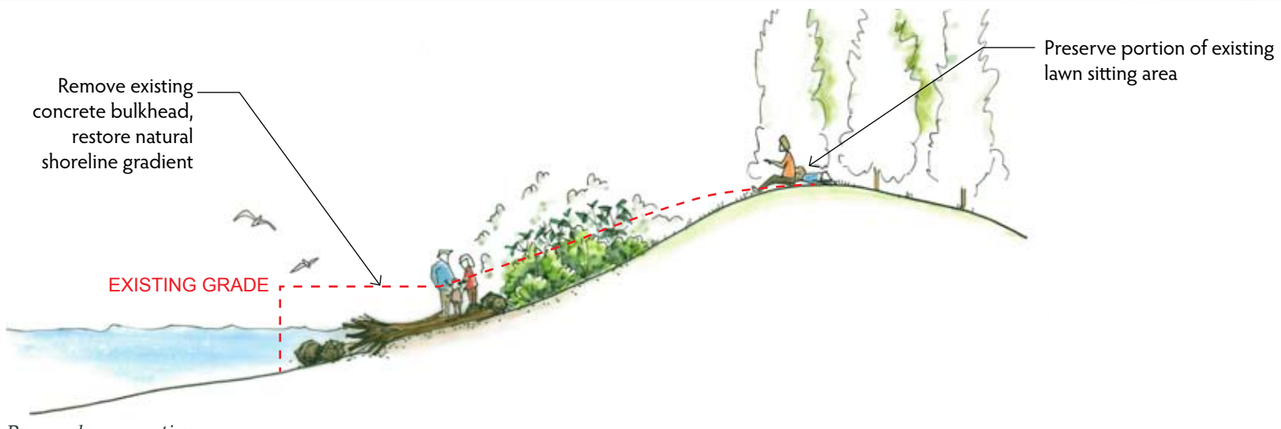


Existing conditions

1. Replace existing concrete and timber bulkhead with large woody debris, boulders, and gravel matrix
2. Revegetate portions of the shoreline with native vegetation
3. Modify the skirting along the pier to reduce shading while maintaining wave attenuation function
4. Replace solid decking with grated for more light penetration
5. Maintain some of the sloped lawn area which is popular with park users. Ensure that usability of the shoreline is maintained



Proposed cross section

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LS.2 West Lake Sammamish Shoreline Restoration

EXISTING CONDITIONS

This project area consists of three formerly residential parcels now owned by the city. One residence is still present on the site, situated on a relatively steep hillslope, and set back from the shoreline. The shoreline is currently unarmored and has a gradual, mostly natural lakeshore gradient (see photos 1 and 2). The southern half of the property, near the lake, is poorly drained, and contains vegetation, soil and hydrology indicative of wetland conditions. The northern portion of the property features an existing pavilion structure and a large paved patio set back approximately 50 feet from the lakeshore (photo 2). Much of the upland area is well vegetated, with several large coniferous and deciduous trees.

Two piers extend over the lake. The northern pier is constructed with concrete pilings, a wood deck and a boat slip, and the southern pier has treated wood pilings and an "L" shaped wood deck.

PROJECT GOALS

1. Improve shoreline habitat for native fish by:
   - Enhancing the complexity of the shoreline.
   - Providing shade, organic debris, and insect prey from vegetation overhanging the shoreline.
   - Reducing the impacts of overwater structures on the nearshore environment.
2. Provide for future public access and interpretive areas for education.
3. Improve upland and wetland wildlife habitat.

RESTORATION STRATEGY

Improve shoreline, upland, and wetland habitat
The lakeshore on the southern portion of the property will be planted with native wetland shrubs and trees appropriate for the saturated soils. Wetland planting will increase vegetative functions and habitat diversity along the shoreline. Large wood placed along the shoreline will improve the shoreline habitat complexity.

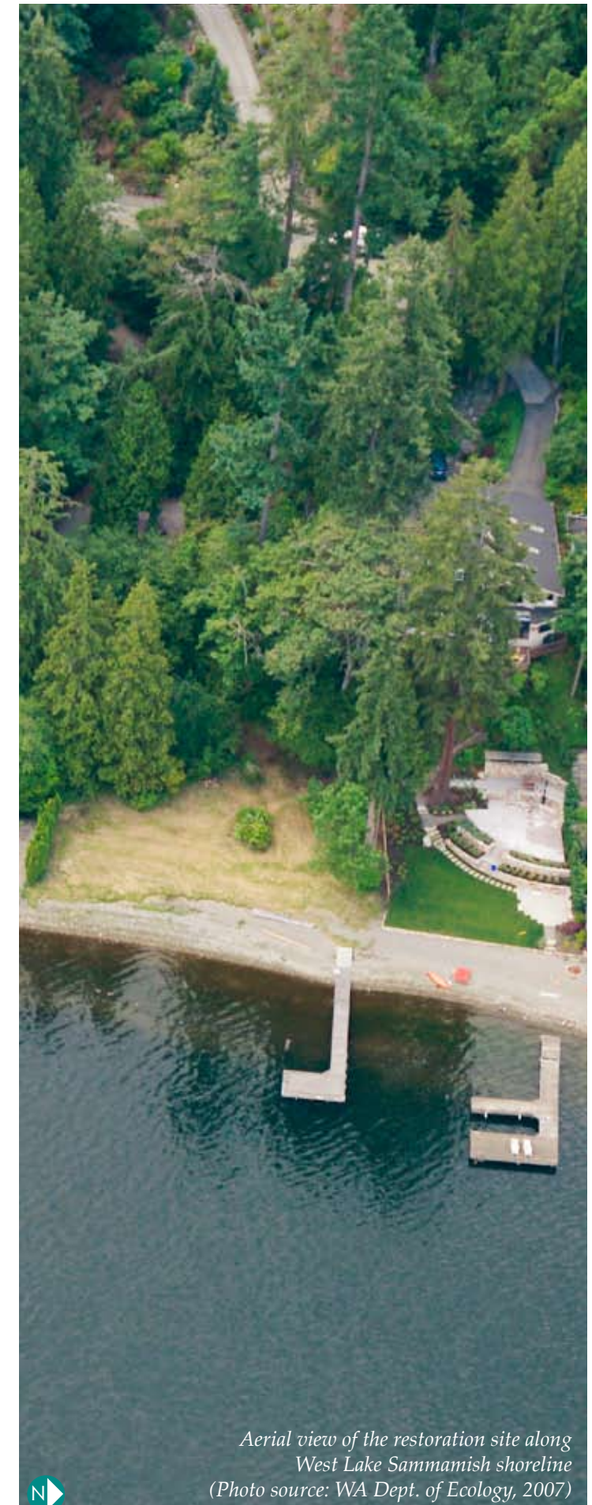
Reduce impacts of overwater cover
The project will remove the southern pier and reduce the total size of the northern pier. The remaining pier will be designed to minimize shoreline habitat impacts. Design improvements will include grated decking and a narrower "bridge" over the nearshore area to allow for light penetration to the nearshore. Nearshore "bridge" decking could be removed in the winter and early spring to minimize impacts for migrating juvenile salmonids.

Provide public access and educational opportunities
Future public access to this park will allow for its use as both a recreational outlet and a model of shoreline restoration. Active recreational use will be focused in the northern parcel of the future park. On the southern parcel, an overlook of the wetland area and lakeshore will allow for wildlife viewing, and interpretive signage will educate visitors. Parking and access to the lower portion of the properties could be improved in the future.

Photo 1. Existing beach conditions

Photo 2. View of existing patio area and beach

Photo 3. Existing grassy meadow



Aerial view of the restoration site along West Lake Sammamish shoreline (Photo source: WA Dept. of Ecology, 2007)

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Note: This illustration is conceptual and a final design would be developed based on available financial resources, property owner approval, public input, and site-specific conditions.

Existing conditions

1. Remove existing southern pier
2. Resurface existing northern pier with grated decking, partially remove ells and pilings for smaller over-water footprint
3. Install large logs parallel to the shoreline without root wads
4. Install native vegetation in portions of existing grassy area
5. Existing paved patio and sitting areas to remain for park users
6. Restoration area overlook with interpretive element

Proposed cross section

THE WATERSHED COMPANY

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MS.4 Mercer Slough Bellfield Office Complex Buffer Enhancement

This proposed project is on private property, and it provides an example of a potential public/private partnership that could provide significant ecological benefits. Project implementation is not required of the property owners or management.

EXISTING CONDITIONS

Mercer Slough is characterized by a low velocity, broad, relatively uniform channel (photos 1 and 2). Mercer Slough suffers from high water temperatures and low dissolved oxygen levels, particularly in late summer and early fall, that are inhospitable to salmon, other fish and aquatic life.

The west channel of Mercer Slough is bounded by a steep west bank covered by invasive Himalayan blackberries and a gradually sloping, east bank with sparse vegetation (photo 1). Construction plans have already been developed by the City to enhance the west bank, and the east bank offers significant opportunities to improve shading and enhance shallow-water habitat.

PROJECT GOALS

1. Reduce water temperature and increase dissolved oxygen concentrations in Mercer Slough.
2. Improve water quality by reducing the amount of nutrients and contaminants entering the slough.
3. Increase the amount of cover and complexity in shallow-water shoreline habitat to improve and expand rearing opportunities for juvenile salmon and other native fish.
4. Improve upland wildlife habitat.
5. Enhance shoreline access and view corridors.
6. Provide an example restoration project that can be emulated in other areas along the slough.

RESTORATION STRATEGY

Restore vegetated buffer functions
This privately owned area presents several opportunities to increase vegetated buffer functions by planting large conifers and shade trees along Mercer Slough. Such a buffer will increase shading to reduce late-summer water temperatures. A wooded buffer would also help filter nutrients and contaminants from parking lot runoff within the office complex. A reduction in nutrients entering Mercer Slough, combined with reduced temperatures, should help maintain higher levels of dissolved oxygen.

Enhance shoreline habitat
Large wood added along the shoreline would increase habitat diversity and refuge opportunities for small fish and amphibian by increasing the physical complexity of the shoreline.

Enhance shoreline access and educational opportunities
The conceptual plan includes direct shoreline access points and view corridors to accommodate private property interests. Interpretive signs could be added to raise awareness of contaminant threats and the benefits of native planting.

Develop a restoration model and maintain shoreline access
The vegetation and shoreline restoration strategies detailed here could be replicated in several locations throughout the Bellefield Office Complex. Restoration at multiple points within the office complex and the surrounding area would help create a continuous buffer along the slough, which would have the greatest benefit to water quality and wildlife habitat.

Aerial view of the Mercer Slough and Bellfield Office Complex (Photo source: WA Dept. of Ecology, 2007)

Photo 1. Existing slough bank conditions often consist of maintained lawn with little native vegetation

Photo 2. A more natural section of slough with native plants along the shoreline

Photo 3. Trails ring the office park along the slough

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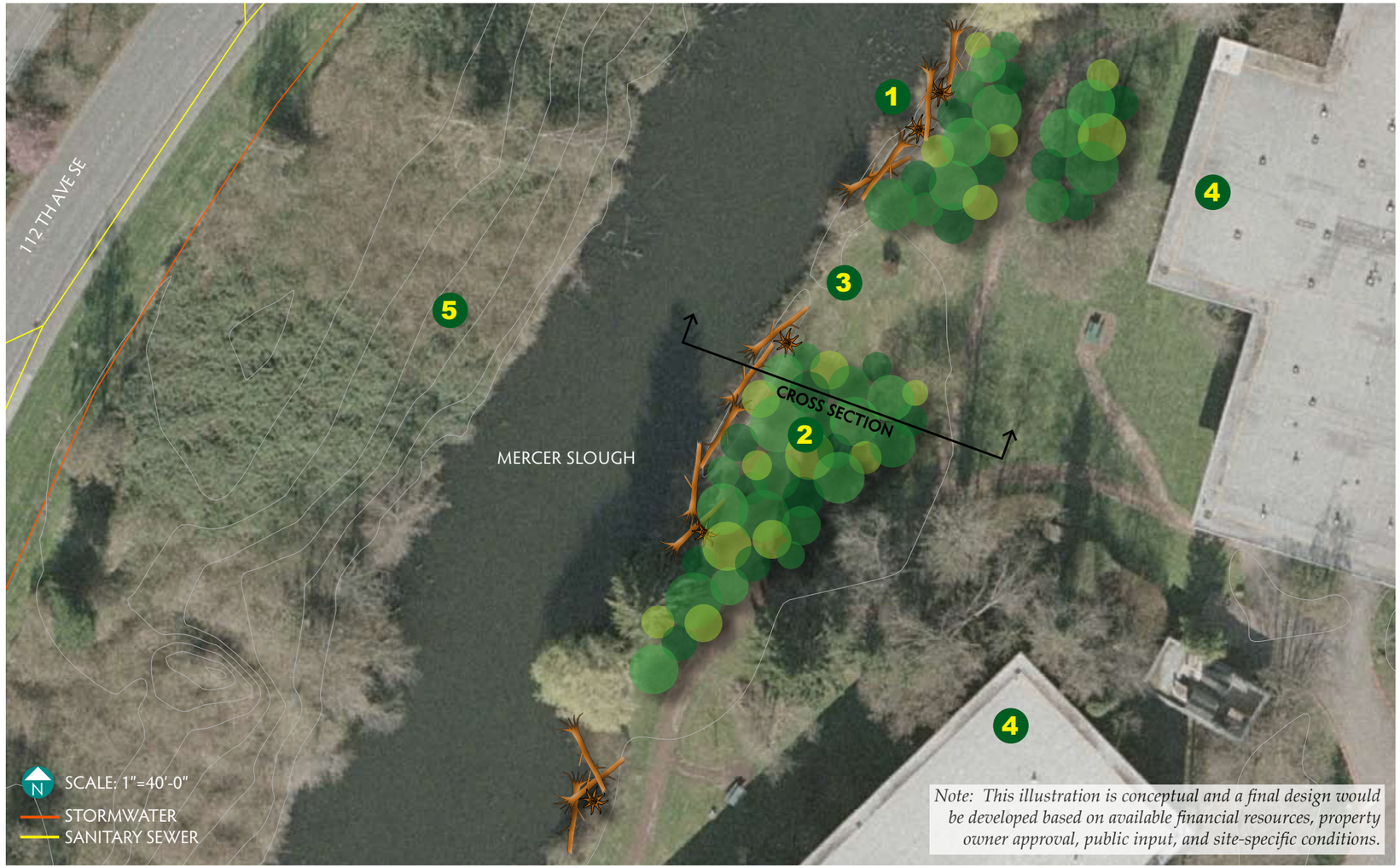

Note: This illustration is conceptual and a final design would be developed based on available financial resources, property owner approval, public input, and site-specific conditions.

Selected site (see concept plan on the left)

Potential sites for enhancement

1. Place large woody debris to increase shoreline habitat complexity
2. Remove invasive species and plant portions of the shoreline with native vegetation
3. Maintain areas open to the slough for views from adjacent buildings and direct shoreline access
4. Potential for stewardship of restored shoreline areas by adjacent businesses
5. This area along the west bank, adjacent to 112th Ave SE is proposed for restoration separately by Bellevue Parks & Community Services

The Watershed Company

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PL.4 Larsen Lake Outlet Channel Restoration

The restoration of the outlet channel will improve fish and wildlife habitat in and along the channel while maintaining or improving its flood capacity.

EXISTING CONDITIONS

The project area stretches from the outlet of Larsen Lake to the first culvert under a commercial development. The existing outlet of Larsen Lake is a low-gradient, straight, uniform channel lacking woody debris and overhanging woody vegetation (photos 1 and 2). The riparian vegetation along the outlet channel is regularly mowed, presumably for flood control purposes. The southernmost ~80 feet of the channel is surrounded by mown grasses and blueberry fields, associated with the Larsen Lake Blueberry Farm. Several areas, including most of the east bank of the channel, are dominated by reed canary grass (photo 1). Native willows, alder, cottonwood and recently planted conifers, as well as invasive Himalayan blackberry, are also present at this site.

PROJECT GOALS

1. Enhance the diversity and complexity of the instream habitat by providing meanders, pools, backwater habitats, and overhead cover for fish.
2. Improve flood storage capacity and maintain flood transport.
3. Increase the diversity of plant species and reduce invasive vegetation cover.
4. Improve upland filtration capacity of nutrients and contaminants.
5. Maintain the agricultural heritage of the Larsen Lake Blueberry Farm.

RESTORATION STRATEGY

Instream restoration
The banks of the channel and surrounding areas will be regraded to increase the total flood storage capacity and create meanders and backwater areas that will enhance habitat diversity. The project will add large wood to create habitat complexity within the channel, and to encourage slight channel meanders. Where an adjacent ditch enters the outlet channel from the west (photo 3), the channel will be widened for added habitat complexity and channel capacity.

Restore native vegetation
Revegetation with dense wetland shrubs and trees will be used to control reed canary grass and Himalayan blackberry. Native revegetation will improve wildlife habitat diversity, shade the channel, and provide natural wood and organic debris.

Maintain agricultural uses
Three to four rows of blueberries will be removed on each side of the channel in an area where the existing berry orchard is currently quite degraded. A narrow buffer of native plants will be planted along the channel in the uppermost 80 feet of the channel. This buffer will reduce the quantity of nutrients and possible contaminants entering the channel while maintaining the vast majority of the blueberry orchards on either side.

Photo 1. The existing Larsen Lake outlet is a narrow channel with reed canarygrass dominated banks

Photo 2. Portions of the channel have vertical banks

Photo 3. Confluence of the Lake outlet and an adjacent ditch

Aerial view of the Larsen Lake area (Photo source: WA Dept. of Ecology, 2007)

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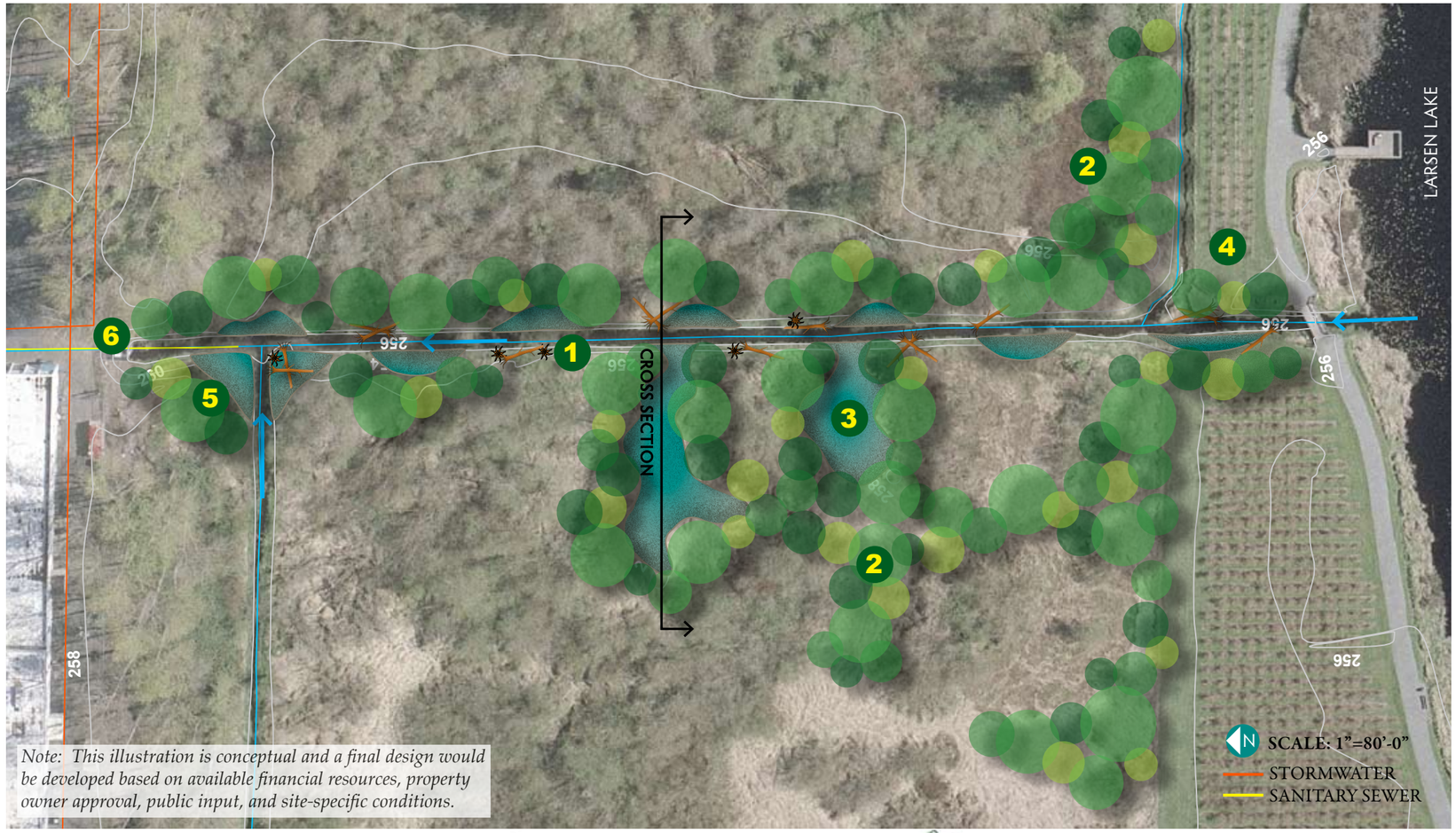
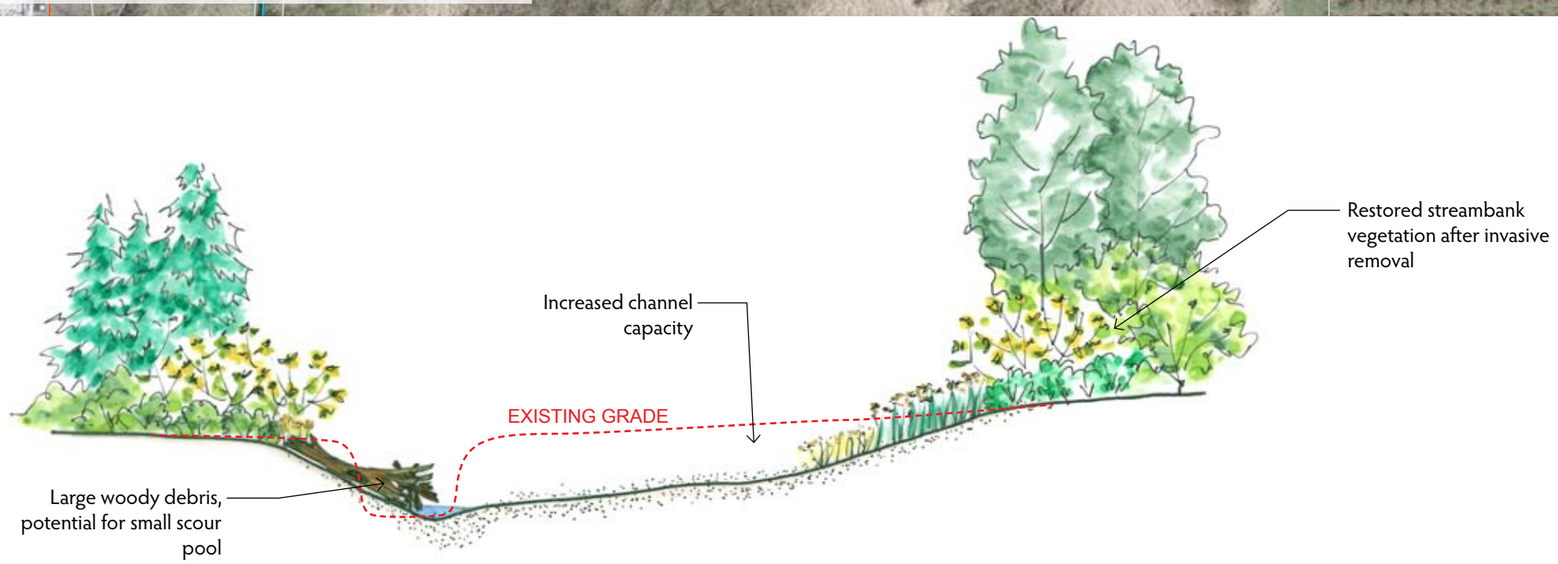
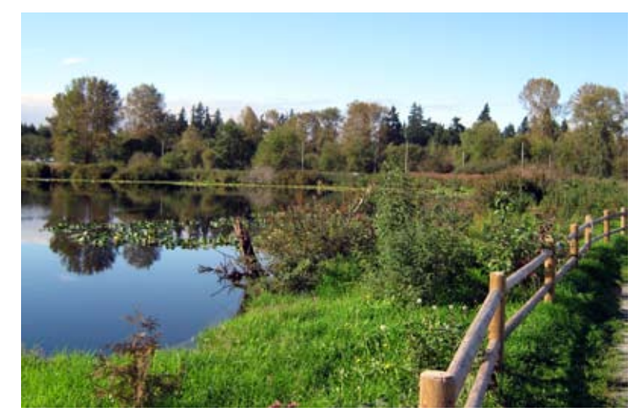


Note: This illustration is conceptual and a final design would be developed based on available financial resources, property owner approval, public input, and site-specific conditions.

Existing conditions

1. Place large woody debris (LWD) to increase streambank complexity
2. Remove invasive species and revegetate stream buffer with native vegetation
3. Create backwater areas to improve habitat diversity and flood capacity
4. Remove adjacent rows of blueberry (many are already dead) and add native vegetation to improve buffer conditions
5. Widen channel at ditch confluence for added habitat complexity and flood capacity
6. Ensure project is designed and constructed to protect flood control structures and meets with City of Bellevue Utilities Engineer approval





Recently restored riparian zone at Larsen Lake