## APPENDIX F: SHORELINE RESTORATION PLAN

AND

# for the Town of Yarrow Point Shoreline Master Program

Prepared for:



Town of Yarrow Point 4030 95<sup>th</sup> Ave NE Yarrow Point, WA 98004

Prepared by:



750 Sixth Street South Kirkland, WA 98033



This report was fund part through a grant momentee Washington Department of Ecology. Grant Number: G1000071

July 2012

The Watershed Company Reference Number: 090521

Town of Yarrow Point

The Watershed Company Contact Person: Amy Summe

**Town of Yarrow Point Contact Person:**Mona Green

Cite this document as:

The Watershed Company and Town of Yarrow Point. July 2012. Shoreline Restoration Plan for the Town of Yarrow Point Shoreline Master Program.

Prepared for the Town of Yarrow Point, WA.

# TABLE OF CONTENTS

			Page #
1	In	troduction	F1
	1.1	Purpose	1
	1.2	Restoration Plan Requirements	1
	1.3	Types of Restoration Activities	2
	1.4	Contents of this Restoration Plan	2
2	Sł	noreline Inventory and Analysis Summary	F2
	2.1	Introduction	2
	2.2	Shoreline Boundary	2
	2.3	Shoreline Analysis Report	3
		2.3.1 Land Use and Physical Conditions	3
		2.3.2 Biological Resources and Critical Areas	4
3	Re	estoration Goals and Objectives	F5
	3.1	Yarrow Point Shoreline Master Program Restoration Goals	5
	3.2	Lake Washington Restoration Goals	5
4	Oı	ngoing Town Plans and Programs	F6
	4.1	Comprehensive Plan	6
	4.2	Stormwater Management	6
	4.3	Wetherill Nature Preserve	7
5	Pa	artnerships	F7
	5.1	Puget Sound Partnership	7
	5.2	Lake Washington/Cedar/Sammamish Watershed (WRIA 8)	8
	5.3	King Conservation District	9
	5.4	Washington Department of Transportation (WSDOT) - SR 520	10
6	A	ctions and Strategies to Achieve Local Restoration Go	alsF10
	6.1	Recommended Actions to Improve Shoreline Functions	10
	6.2	Voluntary Restoration on Private Properties	10
	6.3	Town Planning	11
	6.4	Development Opportunities	12
	6.5	Resource Directory	12
	6.6	Volunteer Coordination	13
	6.7	Regional Coordination	13
7	Pr	oposed Implementation Targets and Monitoring Metho	odsF13
8		eferences	
9		st of Acronyms and Abbreviations	

## LIST OF FIGURES

Figure 1.	Yarrow Point Shoreline Reaches	F4
-----------	--------------------------------	----

## LIST OF TABLES

Table 1.	The Final Lake Washington/Cedar/Sammamish Watershed (WRIA Chinook Salmon Conservation Plan Action Start-List for Lake Was	
	Migratory Area	F8
Table 2.	Project recommendations	F11
Table 3.	Implementation Schedule and Funding for Restoration Projects,	
	Programs and Plans	F14

## SHORELINE RESTORATION PLAN

FOR TOWN OF YARROW POINT SHORELINE MASTER PROGRAM

## 1 Introduction

## 1.1 Purpose

The primary purpose of the Shoreline Restoration Plan is to plan for "overall improvements in shoreline ecological function over time, when compared to the status upon adoption of the master program" (WAC 173-26-201(2)(f)).

Secondarily, the Shoreline Restoration Plan may help a jurisdiction ensure that the no net loss standard for shoreline ecological function is achieved on a Townwide basis, notwithstanding any shortcomings of individual projects or activities. By law, activities that have adverse effects on the ecological functions and values of the shoreline must be mitigated (WAC 173-26-201(2)(e)). Proponents of such activities are individually required to mitigate for impacts to the subject shoreline areas. However, some uses and developments cannot be mitigated inkind on an individual project basis. Other impacts may be sufficiently minor on an individual level, such that mitigation is not required. Additionally, unregulated activities (such as operation and maintenance of existing legal developments) may affect shoreline functions. Finally, activities upland of shoreline jurisdiction may have offsite impacts on shoreline functions. Together, these different project impacts – out of kind, de minimus, and out of jurisdiction - may result in cumulative, incremental, and unavoidable degradation of the overall baseline condition unless additional restoration of habitat function is undertaken. Accordingly, the Restoration Plan is intended to be a source of ecological improvements implemented by the Town and other government agencies, developers, non-profit groups, and property owners inside and outside of shoreline jurisdiction to ensure no net loss of ecological function, and where possible improvement of ecological function.

## 1.2 Restoration Plan Requirements

This Restoration Plan has been prepared to meet the purposes outlined above as well as specific requirements of the SMP Guidelines (WAC Section 173-26-201(2)(f))<sup>1</sup>. In addition to meeting the requirements of the Guidelines, this Restoration Plan is intended to identify priority focal areas for future restoration and mitigation, support the Town's and other organizations' applications for

http://www.ecy.wa.gov/programs/sea/sma/guidelines/index.html for more background.

<sup>&</sup>lt;sup>1</sup> The Shoreline Master Program Guidelines were prepared by the Washington Department of Ecology and codified as WAC 173-26. The Guidelines translate the broad policies of the Shoreline Management Act (RCW 90.58.020) into standards for regulation of shoreline uses. See

grant funding, and to identify the various entities and their roles working within the Town to enhance the environment.

## 1.3 Types of Restoration Activities

Restoration of shoreline areas, in relation to shoreline processes and functions, commonly refers to methods such as re-vegetation, removal of invasive species or toxic materials, and removal of shoreline modifications, such as levees or revetments. Consistent with Ecology's definition, use of the word "restore," or any variations, in this document is not intended to encompass actions that reestablish historic 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).

#### 1.4 Contents of this Restoration Plan

As directed by the SMP Guidelines, the following discussions provide a summary of baseline shoreline conditions, list restoration goals and objectives, and describe existing or potential programs and projects that positively impact the shoreline environment. In total, implementation of the SMP in combination with this Restoration Plan will result in no net loss of ecosystem function, and voluntary actions and partnerships identified in this plan may result in a net improvement in the Town of Yarrow Point's shoreline environment.

# 2 SHORELINE INVENTORY AND ANALYSIS SUMMARY

#### 2.1 Introduction

The Town recently developed a draft comprehensive inventory and analysis of its Lake Washington shoreline (The Watershed Company and Town of Yarrow Point 2011). The inventory describes existing physical and biological conditions in the Lake Washington shoreline zone and associated wetlands within Town limits, including recommendations for restoration of ecological functions where they are degraded. The full Draft Shoreline Analysis Report is included as an appendix to the SMP and is summarized below.

## 2.2 Shoreline Boundary

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the state plus their associated "shorelands," as defined in RCW 90.58.030. Shorelands in the Town of Yarrow Point include only areas within 200 feet of the ordinary high water mark (OHWM), as established by the U.S. Army Corps of Engineers for Lake Washington, and any associated wetlands within shoreline jurisdiction. Based on a review of the Town's wetland inventory

(Town of Yarrow Point GIS) along Lake Washington, conducted as part of the shoreline analysis, shoreline-associated wetlands exist within the Wetherill Nature Preserve and within Morningside Park on Yarrow Bay. These wetland areas both extend shoreline jurisdiction outside of the minimum 200-foot jurisdiction area.

## 2.3 Shoreline Analysis Report

The Shoreline Analysis Report includes a summary of the current regulatory framework and existing shoreline conditions, as well as an analysis of ecological functions and ecosystem-wide processes, land use, and public access. For purposes of dividing the shoreline into manageable units, and to help evaluate differences among discrete shoreline areas, the Town's shoreline jurisdiction is divided into two reaches, Reach 1 and Reach 2, based on land use. Reach 1 includes the entire shoreline designated for residential land use. Reach 2 is divided into 2A and 2B and includes undeveloped public parcels within Town limits (Wetherill Nature Preserve and Morningside Park) (Figure 1). A brief summary of the land use and ecological conditions described in the Shoreline Analysis Report that pertain to this Restoration Plan are summarized below in Sections 2.3.1 and 2.3.2.

#### 2.3.1 Land Use and Physical Conditions

The Yarrow Point shoreline area is nearly fully developed with residential homes. The few areas not in residential development are the Wetherill Nature Preserve, Morningside Park, and two street end parks. The Town's shoreline is predominately zoned single-family residential (R-15). Land uses along the shoreline are not expected to change over the next 20 years, although re-builds, substantial remodels, SR 520 renovations, and some redevelopment of single-family residential parcels are likely to occur. Although there is the potential for subdivision within the shoreline jurisdiction, it is unlikely in the Town because parcels tend to be long and narrow with limited lake frontage.

The two public parks in Reach 2 provide public shoreline access and open space totalling 6.37 acres, with 1,237 linear feet of trail. An additional 0.31 acres of public access is available in Reach 1.



Figure 1. Yarrow Point Shoreline Reaches

## 2.3.2 Biological Resources and Critical Areas

The Yarrow Point shoreline zone is impacted by residential development and its associated shoreline modifications. The great majority of parcels in Reach 1 have bulkheads and/or piers, and vegetation is primarily maintained lawns, residential landscaping, and scattered trees at the water's edge. Most shrub and tree vegetation is located perpendicular to the water along property lines.

Wetherill Nature Reserve and Morningside Park (Reach 2) have unarmored shorelines (with the exception of just 2.6 feet) and are naturally vegetated but make up only 301 feet of Yarrow Point's 1.49 miles of shoreline. The shoreline in Reach 2 is comprised of emergent, scrub-shrub and forested wetland vegetation.

Morningside Park includes areas of wetland associated with the adjacent Yarrow Bay wetland complex. The Yarrow Bay wetlands are mapped as priority wetlands by WDFW (2006). Priority wetlands are those wetlands that have "[c]omparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and

wildlife seasonal ranges, limited availability, [and] high vulnerability to habitat alteration" (http://wdfw.wa.gov/hab/phshabs.htm). Although a bald eagle nest is mapped in the Yarrow Bay Wetlands, it was last active in 1999 and the nesting pair relocated to Hunts Point. However, a mapped great blue heron nesting colony is still active.

## 3 RESTORATION GOALS AND OBJECTIVES

## 3.1 Yarrow Point Shoreline Master Program Restoration Goals

Goals for restoring the Town of Yarrow Point's shorelines are presented in the Conservation and Restoration Elements of the Town's Shoreline Master Program. For each goal, specific objectives were developed for purposes of this Shoreline Restoration Plan based on proposed policies and existing conditions. Objectives refer to specific actions, ideally measurable, that can be taken to achieve the stated goals. The following SMP goals and Restoration Plan objectives help guide the development of shoreline restoration priorities.

**Goal**: Preserve and protect those features necessary for the support of wild and aquatic life and the fragile shoreline area.

**Objective A**: Protect the Wetherill Nature Preserve through the continued prohibition of motorized access and boat launching, in order to protect the shoreline environment for future generations.

**Objective B**: Protect and maintain water quality through the application of appropriate State of Washington water quality standards.

**Objective C:** Encourage educational projects and programs that foster a greater appreciation for the importance of shoreline management, environmental conservation, and restoration of ecological functions.

**Goal**: Shoreline areas with impaired ecological function shall be improved over time.

**Objective A**: Implement the Restoration Plan.

**Objective B**: Encourage landowners to restore and enhance shoreline resources through the use of native plant materials .

## 3.2 Lake Washington Restoration Goals

In addition to goals and objectives explicitly stated in the SMP, the following goals and objectives relate to the overall restoration of Lake Washington shorelines. These goals and objectives are guided by the Lake Washington/Cedar/Sammamish Chinook Salmon Recovery Plan, which the Town ratified in 2005 (See section 6.2 for further details).

**Goal**: Improve habitat conditions on Lake Washington and tributary shorelines.

**Objective A**: Eliminate man-made barriers to anadromous fish passage, prevent the creation of new barriers, and provide for transport of water, sediment and organic matter at all stream crossings.

**Objective B**: Identify hardened and eroding lakeshores and streambanks, and correct to the extent feasible with bioengineered stabilization solutions.

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

**Objective D**: Reconnect and enhance small creek mouths as juvenile rearing areas.

**Objective E**: 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.

**Goal**: Improve water quality in Lake Washington and its tributaries.

**Objective A**: Manage the quality and quantity of stormwater runoff, consistent at a minimum with the latest Washington Department of Ecology Stormwater Management Manual for Western Washington. Make any additional efforts to meet and maintain state and county water quality standards in Lake Washington tributary streams.

## 4 Ongoing Town Plans and Programs

## 4.1 Comprehensive Plan

The Town amended its Comprehensive Plan in 2004. The Plan includes goals to protect the environment and to consider the environmental impact of all new utilities services. The Comprehensive Plan refers to wetlands that have been identified within Wetherhill Nature Preserve and Morningside Park.

## 4.2 Stormwater Management

Although technically exempt from Ecology's Phase II Municipal Stormwater General Permit (permit condition S1.C2), the Town has made and continues to make substantial efforts to protect water quality in Lake Washington. In 2008, the Town developed a Comprehensive Stormwater Management Plan, in which it provided an inventory of the existing drainage system and recommendations for capital improvement projects. In 2009, the Town completed its highest priority project to minimize shoreline erosion at NE 47<sup>th</sup> St. The Town requested federal funds in 2010 to monitor pollutant levels at major outfalls, review the Town's stormwater system , and provide recommendations to improve water

quality. The Town also requested funds to address an undersized stormwater culvert upstream from a sanitary sewer line with flooding potential.

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

#### 4.3 Wetherill Nature Preserve

Sixteen-acres of land for the Preserve were donated to the towns of Hunts Point and Yarrow Point in 1988. Trails meander through the Preserve and reach the lake edge at two points, one each in Hunts Point and Yarrow Point. The Wetherill deed states "the property is conveyed to the public in perpetuity, and that it shall never be used for a purpose other than as a nature preserve and a place of retreat for the education and benefit of members of the general public." Further, the deed directs that "No boat moorage facilities, piers, or pilings should be installed along the waterfront, and access from the water to the property should be discouraged."

The Wetherill Nature Preserve is managed by a Board composed of residents of Hunts Point and Yarrow Point. In the past, yearly volunteer projects have included invasive plant eradication, construction and installation of habitat boxes for bats, planting of native species, trail maintenance, and the creation and installation of educational signage.

## 5 Partnerships

With projected budget and staff limitations, the Town of Yarrow Point is limited in implementing restoration projects or programs on its own. However, regional, local agencies and organizations are active in Yarrow Point and the surrounding area. The Town's SMP represents an important vehicle for facilitating and guiding restoration projects and programs in partnership with other government agencies or private and/or non-profit entities. The Town can provide cooperation, direction, and leadership to assure that project/program designs meet identified goals. The following series of potential partners and existing projects and programs active in the Yarrow Point area are generally organized from the larger watershed scale to the local scale.

## 5.1 Puget Sound Partnership

The Puget Sound Partnership consists of representatives from a variety of interests from the Puget Sound region, including business, agriculture, the shellfish industry, environmental organizations, local governments, tribal governments, and the Washington state legislature. The Partnership's Leadership Council released an Action Agenda in December 2008. Implementation of this Action Agenda has resulted in State and Federal funding of restoration and protection initiatives and projects.

The Puget Sound Partnership, in coordination with local governments and non-profits, is sponsoring the 'Puget Sound Starts Here' campaign to educate the public in the region about non-point source stormwater impacts on water quality. The campaign is focused on simple, clear messaging and marketing to raise awareness and effect behavior change.

# 5.2 Lake Washington/Cedar/Sammamish Watershed (WRIA 8)

The Town of Yarrow Point is one of 27 members of WRIA 8. In 2005, it ratified the Final Lake Washington/Cedar/ Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan (2005).

The WRIA 8 mission and goal statements propose that the 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 Plan goals, and 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 Lake Washington shoreline is among the highest priorities for restoration in WRIA 8 because of the importance of its shorelines for juvenile Chinook rearing. Recommended actions in the Chinook Salmon Recovery Plan to improve shoreline rearing habitat are summarized in Table 1.

Preparation of the Draft Shoreline Analysis Report for the Town of Yarrow Point (The Watershed Company and Town of Yarrow Point 2011), the draft Shoreline Master Program, and this Shoreline Restoration Plan are important steps toward furthering the goals and objectives of the WRIA 8 Chinook Salmon Conservation Plan. The Town's SMP update products rely heavily on the science behind the plan and the final plan recommendations. Provisions in the updated Shoreline Master Program may address many of the recommendations identified in Table 1; these provisions may include standards for dock design and dimensions, incentives to reduce shoreline armoring, or stormwater improvement standards.

Table 1. The Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8)
Chinook Salmon Conservation Plan Action Start-List for Lake Washington
Migratory Area

#### Goal/ Action Items

Reduce predation to outmigrating juvenile Chinook by: Reducing bank hardening, restoring overhanging riparian vegetation, replacing bulkheads 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. Offer incentives and regulatory flexibility to improve bulkhead and dock design and revegetate shorelines. Require major redevelopment projects to meet current standards.

Discourage construction of new bulkheads; offer incentives (e.g., provide expertise, expedite permitting) for voluntary removal of bulkheads, beach improvement, and riparian revegetation.

Support joint effort by NOAA Fisheries and other agencies to develop dock/pier

#### **Goal/ Action Items**

specifications to streamline federal/state/local permitting; encourage similar efforts for bulkhead specifications.

Promote value of light-permeable docks, smaller piling sizes, and community docks to both salmon and landowners. Offer financial incentives for community docks through reduced permit fees, taxes, and permitting time.

Develop workshop series on lakeside living, including: natural yard care, alternatives to vertical wall bulkheads, fish friendly dock design, best management practices for aquatic weed control, porous paving, and boat, dock, and deck maintenance.

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 through NPDES permit updates and Washington Department of Ecology's Stormwater Management Manual. Address low impact development (LID) techniques, on-site stormwater detention, control of point source pollution, and impacts from major transportation projects. Encourage LID through regulations, incentives, education/training, and demonstration projects.

Protect and restore water quality and other ecological functions in tributaries. 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.

Promote the use of "rain gardens" and other LID practices through a design competition or home/garden tour.

The Town's conservation partners are also actively pursuing projects and programs to address the above recommendations. For example, in coordination with the City of Seattle, Ecology, Puget Sound Partnership, the Governor's Office for Regulatory Assistance, and the King Conservation District (KCD), WRIA 8 has spearheaded a Green Shorelines program to encourage environmentally sensitive shoreline designs through landowner surveys and outreach (<a href="http://www.govlink.org/watersheds/8/action/greenshorelines/default.aspx">http://www.govlink.org/watersheds/8/action/greenshorelines/default.aspx</a>).

In addition to project opportunities identified in Table 1, the plan emphasizes the need to engage the public so that they will support ecological protection and restoration, and so they will implement practices that conserve shoreline functions on their own properties.

## 5.3 King Conservation District

Yarrow Point is a member jurisdiction of the King Conservation District (KCD), which provides programs and services to landowners and residents, including natural resource education, native bare root plant sales, and technical assistance for landowners.

The KCD also awards grants to member jurisdictions and WRIA forums for salmon and stream protection and restoration. To date, the Town has not received any member jurisdiction grants or targeted conservation services. However, together with neighboring Hunts Point, the Town has approximately \$12,000 in grant funding available. In order to receive grant funds, the Town will need to identify a project, develop a grant application, and provide staffing to manage the grant funds (e.g., periodic grant reporting).

Potential project and program sponsors in the Lake Washington/Cedar/ Sammamish watershed may also apply for KCD WRIA Forum grant funding through a competitive application and evaluation process.

## 5.4 Washington Department of Transportation (WSDOT) - SR 520

State Route 520 passes through the southern portion of Yarrow Point near the Wetherill Nature Preserve, just outside of shoreline jurisdiction. As mitigation for stream impacts, and also outside of shoreline jurisdiction, WSDOT will be installing fish-passable culverts under SR 520 on Fairweather Creek and Yarrow Creek. In total, culvert replacements will result in approximately 980 feet of new stream channel available to fish near Yarrow Point (WSDOT 2010).

# 6 ACTIONS AND STRATEGIES TO ACHIEVE LOCAL RESTORATION GOALS

The discussion of restoration opportunities, mechanisms, and strategies below highlights project and programmatic measures that the Town may potentially implement as part of the SMP, as well as parallel activities that would be managed by other governmental and non-governmental organizations or private landowners.

#### 6.1 Recommended Actions to Improve Shoreline Functions

Priorities for restoration identified in the Shoreline Analysis Report include the enhancement of riparian vegetation and the removal or reconfiguration of existing shoreline armoring to reduce ecological impacts. Other opportunities for shoreline enhancement include reducing overwater cover and in-water structures (e.g., through grated pier decking, pier size reduction, pile size and quantity reduction), and reductions in impervious surface coverage. Fish habitat or fish passage enhancement opportunities may also exist for those properties that have streams discharging to Lake Washington.

Restoration opportunities have been identified on both public and private properties. Since the majority of the Town's shorelines are in private ownership, many opportunities exist on private property; however, these opportunities would likely occur only through voluntary means or through re-development proposals. A description of existing opportunities for restoration is provided in Table 2.

## 6.2 Voluntary Restoration on Private Properties

Grant funding sources may be available for shoreline restoration on multiple contiguous residential lots with interested landowners. Private residents would likely need assistance from the Town or another regional partner to help with coordination and grant writing. The Green Shorelines program, a partnership between WRIA 8, the City of Seattle, Ecology, Puget Sound Partnership, and KCD may be able to provide coordination assistance. Restoring shoreline

properties that are connected to one another would provide significantly greater benefits than a more piecemeal approach.

## 6.3 Town Planning

The Town could incorporate shoreline restoration goals and projects into future Town planning efforts, including the Comprehensive Plan and Six-Year Transportation Improvement Plan or future Parks Plan.

Table 2. Project recommendations

ID	Description	Timing	Sponsor and Partners
1	Wetherill Nature Preserve Enhancement: Continue annual volunteer restoration projects in Wetherill Nature Preserve. Priority projects include invasive plant eradication, planting of native species, construction and installation of habitat boxes for bats, trail maintenance, and the development of educational signage. Pursue opportunities to educate	Annually	Wetherill Nature Preserve Board, Town of Yarrow Point, Town of Hunts Point
2	Enhancement of Public Street End Parks: Projects at public street end parks provide examples of restoration options for local residents. Native shoreline vegetation at the 42 <sup>nd</sup> Street End Park could improve filtration, bank stabilization, and foraging and refuge habitat for birds and mammals.	As funds are available	Town of Yarrow Point
3	Support Green Shorelines Program: Recent outreach efforts by other jurisdictions, such as the handbook "Green Shorelines: Bulkhead Alternatives for a Healthier Lake Washington" (City of Seattle 2008), have begun to change the perception of shoreline aesthetics, use, and ecological health. Continue to participate in WRIA 8 and look for opportunities to participate in Green Shorelines efforts.		Town of Yarrow Point, WRIA 8, City of Seattle, Ecology, Puget Sound Partnership, KCD
3	Public Education and Involvement: Due to the extent of residential development along the shoreline, public engagement in shoreline restoration is critical to the Town's future shoreline conditions. Future actions could include the development of a long-term Public Education and Outreach Plan, developing a workshop series tailored to lakeshore property owners, or holding a home/garden tour.	Ongoing	Town of Yarrow Point
4	Shoreline Riparian Restoration: Native shoreline vegetation provides filtration, bank stabilization, recruitment of organic detritus and insect prey to the Lake, as well as foraging and refuge habitat for birds and mammals. Encourage native shoreline planting wherever possible.	As funding and/or landowner interest allows	Private Landowners
5	Remove or Reconfigure Shoreline Armoring: Shoreline armoring creates a steep, abrupt shoreline and eliminates shallow water habitat. More natural shorelines absorb wave energy and provide shallow water refugia for aquatic species. Emphasis should also be given to future project proposals that involve or have the potential to restore privately-owned shoreline areas to more natural conditions.  Reduce Overwater Coverage: Reduce overwater coverage		

ID	Description	Timing	Sponsor and Partners
	through the use of grated decking and narrower ramps and walkways. Projects involving reductions in the size and/or		
	quantity of structures should be emphasized. Future projects		
7	may involve joint-use piers or pier reconstruction.	Noor town	WCDOT
1	Stormwater Treatment and Riparian Vegetation Adjacent	Near-term	WSDOT
	to SR 520: Technically a mitigation project for the SR 520		
	expansion, this project could improve water quality in Lake		
	Washington in nearby Hunts Point.		
8	Fish Passage Improvement on Fairweather Creek and		
	Yarrow Creek: Although outside of shoreline jurisdiction,		
	enhancement of fish passage on Fairweather Creek and		
	Yarrow Creek will expand habitat opportunities for salmonids	l /	
	in and around Yarrow Point.		

#### 6.4 Development Opportunities

When shoreline development occurs, the Town has the ability to look for opportunities to encourage or facilitate restoration as a companion or parallel to minimum mitigation requirements as part of the SMP. Development may present timing opportunities for restoration that would not otherwise occur and may not be available in the future. Mitigation may also be allowed through the use of a fee-in-lieu-of or exchange of land for "banking" opportunities. In certain cases, on-site mitigation opportunities are limited by building site constraints, limited potential ecological gains, or other site-specific factors. In these instances, the project proponent could contribute to an off-site restoration site within the immediate sub-basin, as identified by the Town Shoreline Administrator in lieu of on-site mitigation.

The Town can also provide coordination of the various non-profit groups or citizen volunteers that can assist with the installation and monitoring of restoration projects. The Town should also strongly encourage the participation of citizens to build a strong sense of stewardship that comes through their investment of time, money or materials in the project.

## 6.5 Resource Directory

Development of a resource list would be helpful in aiding property owners who want to be involved in restoration. Examples of grant programs that could be included are:

- Community Salmon Fund: The Community Salmon Fund has partnered with King County and the King Conservation District to provide matching funds for community based restoration projects that enhance salmonid habitat.
- Salmon Recovery Funding Board (SRFB) Grant Programs: SRFB administers two grant programs for protection and/or restoration of salmon habitat. Eligible applicants can include municipal subdivisions (cities, towns, and counties, or port, conservation districts, utility, park and recreation, and school districts), tribal governments, state agencies, nonprofit organizations, and private landowners.

• Recreation and Conservation Office (RCO) is a Washington State entity that hosts a variety of grant programs that range from recreation to watershed recovery.

#### 6.6 Volunteer Coordination

The Town could emphasize and accomplish restoration projects by using community volunteers and coordinating with organizations such as the King Conservation District, Stewardship Partners, Adopt-A-Stream, local churches, Kiwanis, Rotary International, Chamber of Commerce, or Bellevue School District. Probably the most important volunteer is the landowner that acts as the steward of the land following the completion of a project. The Town could provide ongoing assistance and resources to landowners that need additional plantings, equipment use or other materials to maintain their restoration project.

## 6.7 Regional Coordination

The Town will continue its association and involvement with the Lake Washington/Cedar/Sammamish Watershed (WRIA 8), Washington State Department of Ecology, Puget Sound Partnership, and King and Snohomish Counties. The Town may also look for other time sensitive opportunities for involvement in regional restoration planning and implementation.

# 7 PROPOSED IMPLEMENTATION TARGETS AND MONITORING METHODS

Improvement of shoreline ecological functions requires a comprehensive watershed approach that combines upland and shoreline projects and programs. The Town's shoreline jurisdiction is dominated by single-family residences, and public lands are limited to the Wetherill Nature Preserve, Morningside Park, and two street end beaches. Therefore, efforts should be made to improve shoreline ecological function through the promotion of restoration and healthy practices at all levels, from single-family property owners to parks enhancement.

Table 3 outlines a possible schedule and funding sources for implementation of a variety of efforts that could improve shoreline ecological function.

Town planning staff will track all land use and development activity, including exemptions, within shoreline jurisdiction. A report will be assembled that provides basic project information, including location, permit type issued, project description, impacts, mitigation (if any), and monitoring outcomes as appropriate. Examples of data categories might include square feet of non-native vegetation removed, square feet of native vegetation planted or maintained, reductions in chemical usage to maintain turf, linear feet of eroding bank stabilized through plantings, linear feet of shoreline armoring removed, or number of fish passage barriers corrected. The report would also update Table 2, above, and outline implementation of various programs and restoration actions (by the Town or other groups) that relate to watershed health.

The staff report will be assembled to coincide with Comprehensive Plan updates and will be used, in light of the goals and objectives of the SMP, to determine whether implementation of the SMP is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the Shoreline Analysis Report (The Watershed Company and Town of Yarrow Point 2011). In the long term, the Town should be able to demonstrate a net improvement in shoreline ecosystem functions.

Table 3. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Schedule	Funding Source or Commitment
WRIA 8- Lake Washington/Cedar/ Sammamish Watershed: Administration and Recovery Plan Implementation	Ongoing	Interlocal Agreement; Grants from King Conservation District, Salmon Recovery Funding Board, and Puget Sound Acquisition and Restoration Fund
Yarrow Point Comprehensive Plan	Ongoing	The Town will continue to make project and program reviews to determine consistency with the Comprehensive Plan.
SMP – overall plan effectiveness	7-year review	Yarrow Point general fund, Ecology grant, possible KCD funding
King Conservation District partnerships	Ongoing	The Town will pursue partnership opportunities as time and budget permit.
Private funded projects	Ongoing	Private or grant funding (e.g., KCD, Community Salmon Fund)
Public Education	Ongoing	Yarrow Point General fund, grant funds, or volunteer monitoring
Stakeholder partnerships	Annual	Yarrow Point General fund, grant funds, or volunteer monitoring

## 8 REFERENCES

City of Seattle. 2008. Green Shorelines: Bulkhead Alternatives for a Healthier Lake Washington. Seattle, WA.

Town of Yarrow Point. Six-Year Capital Improvement Program.

Town of Yarrow Point. 2004. Comprehensive Plan.

The Watershed Company and Town of Yarrow Point. May 2011. Final Shoreline Analysis Report for the Town of Yarrow Point's Lake Washington Shoreline. Prepared for the Town of Yarrow Point.

Washington Department of Ecology. 2007. Washington State Toxics Monitoring Program: Contaminants in Fish Tissue from Freshwater Environments in 2004 and 2005. Publication No. 07-03-024. June 2007. http://www.ecy.wa.gov/pubs/0703024.pdf

Washington Department of Transportation. 2010. Updated Environmental Assessment: SR 520 Bridge Replacement and HOV Program.

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



# 9 LIST OF ACRONYMS AND ABBREVIATIONS

ALEA ...... Aquatic Lands Enhancement Account Ecology ......Washington Department of Ecology GIS......Geographic Information System KCD ......King Conservation District LID .....low impact development NOAA......National Oceanographic and Atmospheric Administration NPDES......National Pollutant Discharge Elimination System OHWM .....ordinary high water mark PHS ......Priority Habitats and Species SMA .....Shoreline Management Act SMP ......Shoreline Master Program SR .....State Route WAC ......Washington Administrative Code WDFW ......Washington Department of Fish and Wildlife WRIA ......Water Resource Inventory Area WSDOT.......Washington State Department of Transportation

## APPENDIX A

## Town of Yarrow Point letter of support for the WRIA 8 Chinook Salmon Conservation Plan