

City of Langley Shoreline Master Program Update Draft Restoration Plan

Ecology Grant No. G1100124
Deliverable for Task 4.1
July 2012



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1.0 INTRODUCTION AND BACKGROUND

The City of Langley (City) is updating its Shoreline Master Program (SMP) to comply with the requirements of the Washington State Shoreline Management Act (SMA or the Act) (Revised Code of Washington [RCW] 90.58).

This restoration plan has been prepared in accordance with the Washington State Department of Ecology shoreline management guidelines (Washington Administrative Code [WAC] 173-26, Part III). The guidelines direct local government review and updates of SMPs. A significant feature of the guidelines is the requirement that local governments include within their SMPs a “real and meaningful” strategy to address restoration of shorelines (WAC 173-26-186(8)). The state guidelines emphasize that any development must achieve no net loss of ecological functions. The guidelines go on to require a goal of using restoration to improve the overall condition of habitat and resources and make “planning for and fostering restoration” an obligation of local governments.

The City’s shoreline inventory and characterization report (ESA, 2011) identifies which shoreline ecological functions and ecosystem processes have been impaired. In updating its SMP, the City is required to identify and plan for ways to restore or enhance those impaired functions and processes. Restoration planning should be focused on tools such as economic incentives, broad funding sources such as salmon restoration funding, volunteer programs, and other strategies.

Restoration planning provides an opportunity for the City and its citizens to evaluate ways to make ecological improvements to their shorelines. In the context of the SMP, planning for shoreline restoration includes establishing goals and policies, working cooperatively with other regional entities, and supporting restoration through other regulatory and non-regulatory programs. Substantial restoration work is already occurring throughout Puget Sound. Efforts to recover salmon habitat are a high priority for agencies and organizations; however, resources for restoration are limited and competition for grant funding is intense. The objective of this restoration plan is to help the City and the public understand the specific shoreline restoration opportunities in Langley and how these opportunities might be prioritized in order to maximize the available resources.

1.1 Shoreline Planning Jurisdiction

In the City of Langley, the shoreline area to be regulated by the SMP includes the following:

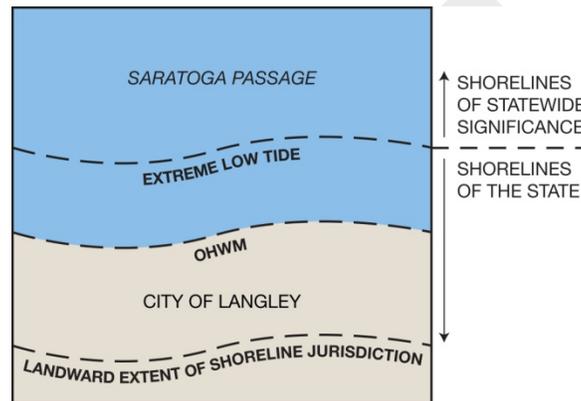
- The Puget Sound shore within the City’s municipal boundary;
- The open water and tidelands extending to the middle of Saratoga Passage;
- The upland area 200 feet landward of the ordinary high water mark (OHWM); and
- Any associated wetlands (none have been identified).

The SMA designates specific shorelines as “shorelines of statewide significance.” These include portions of Puget Sound and other marine water bodies, rivers with mean annual flow of 1,000 cubic feet per second or greater, and freshwater lakes 20 acres or larger. Consistent with RCW

90.58.020 and 090, the SMA raises the status of “shorelines of statewide significance” by establishing specific preferences for uses and calling for a higher level of effort in implementing the objectives of the SMA.

For the City of Langley, shorelines of statewide significance include the open water areas of Puget Sound lying seaward from the line of extreme low tide to the middle of Saratoga Passage (Figure 1). The shorelands landward of extreme low tide do not meet the criteria of RCW 90.58.030(2)(e) for designation as shorelines of statewide significance and are considered shorelines of the state.

Figure 1 Shoreline of Statewide Significance



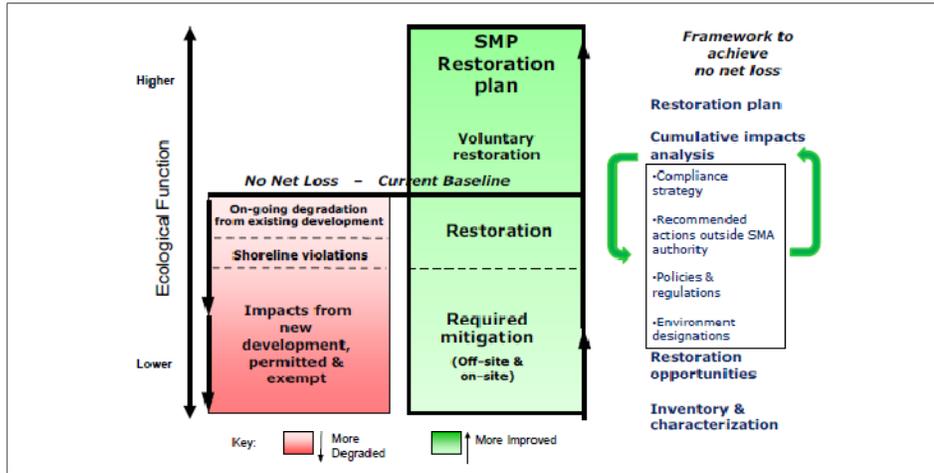
1.2 Regulatory Background

The state has directed local governments to develop SMP provisions “...to achieve overall improvements in shoreline ecological functions over time when compared to the status upon adoption of the master program.” This overarching goal is accomplished primarily through two distinct objectives:

- **Protection** of existing shoreline functions through regulations and mitigation requirements to ensure “no net loss” of ecological functions from baseline environmental conditions; and
- **Restoration** of shoreline ecological functions that have been impaired from past development practices or alterations.

Figure 2 illustrates the role of the SMP update in achieving no net loss through mitigation and restoration.

Figure 2. Achieving No Net Loss of Ecological Function



Source: Department of Ecology

The concept of no net loss of shoreline ecological function is embedded in the SMA and in the goals, policies, and governing principles of the shoreline guidelines. The state's general policy goals for shorelines of the state include the "protection and restoration of ecological functions of shoreline natural resources." This goal derives from the SMA, which states that "permitted uses in the shoreline shall be designed and conducted in a manner that minimizes insofar as practical, any resultant damage to the ecology and environment of the shoreline area." The governing principles of the guidelines further clarify that protection of shoreline ecological functions is accomplished through the following (WAC 173-26-186):

- a) Meaningful understanding of the current shoreline ecological conditions;
- b) Regulations and mitigation standards that ensure that permitted developments do not cause a net loss of ecological functions;
- c) Regulations that ensure exempt developments in the aggregate do not result in net loss of ecological functions;
- d) Goals and policies for restoring ecologically impaired shorelines;
- e) Regulations and programs that fairly allocate the burden of mitigating cumulative impacts among development opportunities; and
- f) Incentives or voluntary measures designed to restore and protect ecological functions.

The restoration planning component of the SMP is focused on voluntary mechanisms, not regulatory provisions. It identifies economic incentives, available funding sources, volunteer programs, and other programs that can contribute to a no net loss strategy. However, the restoration framework developed for these non-compensatory or voluntary mitigation projects can also be applied to compensatory mitigation projects that are required as part of permitting.

In this way, all efforts to improve ecosystem functioning are coordinated and will be designed to work together.

1.3 Defining Restoration

There are numerous definitions for “restoration” in scientific and regulatory publications. Specific elements of these definitions often differ, but the core element of repairing damage to an existing, degraded ecosystem remains consistent. In the SMP context, the WAC defines “restoration” or “ecological restoration” as follows:

“...the reestablishment or upgrading of impaired ecological shoreline processes or functions. This may be accomplished through measures including, but not limited to, revegetation, removal of intrusive shoreline structures and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions” (WAC 173-26-020(27)).

Using the WAC definition of restoration in regard to state shorelines, it is clear the effort should be focused on specific shoreline areas where natural ecological functions have been impaired or degraded. The emphasis in the WAC is to achieve overall improvement in existing shoreline processes or functions, if these functions are impaired. The goal is not to restore historically natural conditions, but rather to improve existing, degraded conditions. In this context, restoration can be broadly implemented through a combination of programmatic measures (such as surface water management; water quality improvement; public education) and site-specific projects (such as bulkhead replacement or riparian plantings).

The state guidelines do not state that local programs should or could require individual permittees to restore past damage to an ecosystem as a condition of a permit for new development. For these reasons, restoration planning focuses on the city as a whole, rather than on a parcel-by-parcel or permit-by-permit basis.

1.4 Key Elements of Restoration Planning in the SMP Update Process

The state guidelines provide six key elements for shoreline restoration planning as part of a local jurisdiction’s master program (WAC 173-26-201(2)(f)). Table 1 summarizes how these elements are addressed in the organization and content of this restoration plan. These requirements provide the framework to restore altered or missing ecological functions resulting from past development of the shoreline.

Table 1. Key Elements of Shoreline Restoration Planning

<i>Key elements for the shoreline restoration planning process WAC 173-26-201(2)(f)</i>	<i>Section in this Plan</i>
Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration.	Sections 2 and 4
Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions.	Section 4
Identify existing and ongoing projects and programs that are currently being implemented that are designed to contribute to local restoration goals (such as capital improvement programs (CIPs) and watershed planning efforts (WRIA habitat/recovery plans).	Section 3
Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs.	Sections 4 and 5
Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals.	Section 6
Provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals (e.g., monitoring of restoration project sites).	Sections 4 and 6

This restoration plan provides a vision for ecological restoration and includes goals, objectives, and opportunities. It also establishes City strategies for implementation, including recognition of existing and ongoing programs, and it provides a framework for long-term monitoring of shoreline restoration and shoreline conditions. This restoration plan includes broad objectives. Specific implementation measures, budgets, schedules, and individual monitoring programs will be needed for individual restoration projects as they occur.

2.0 DEGRADED SHORELINE AREAS AND FUNCTIONS

Shoreline restoration planning begins with the identification of “degraded areas” or areas with “impaired ecological functions.” The following discussion of existing degraded areas and functions is summarized from the *City of Langley Final Shoreline Inventory and Characterization Report* (ESA, 2011).

Shoreline development is a major factor affecting the physical and biological processes that form shoreline functions. East Whidbey Island includes the most densely populated shorelines on the island, and more of the shoreline is armored than other areas of the island. This is particularly true of Langley, which is one of only three incorporated municipalities on Whidbey. Development has resulted in shoreline armoring, loss of marine riparian vegetation, a lowered capacity to slow and filter runoff, and overwater coverage. All of these alterations have resulted in adverse changes to nearshore habitats. The major shoreline management issues in Langley are as follows:

- Construction of bulkheads in Langley West and along Seawall Park has disconnected the shoreline from the coastal bluffs and uplands. As a result, the natural processes that erode the bluffs over time, nourishing beaches and supporting wildlife habitats, have been altered.
- The three docks in the harbor partially intercept the transport of sediment along the drift cell. Sediment builds up within the harbor and at the boat launch. That sediment is not available for beach nourishment further along the cell.
- The docks create overwater coverage of portions of the nearshore. Overwater coverage creates uniform shade, altering the predator-prey dynamic and nearshore vegetation communities. Expansion of the facilities could exacerbate these issues.
- The mouth of Saratoga Creek is completely modified. Stream mouths in less modified condition can provide wood and nutrients to support fish and wildlife habitats.
- Marine riparian vegetation has been greatly altered by installation of the seawall; commercial development on 1st Street, Wharf Street, and Sunrise Lane; shoreline modification; and landscaping with lawns. Natural inputs of wood and organic debris, as well as shade, are diminished in nearshore areas.
- Several primary residential structures are located close to the bluff edge, particularly in Langley East. As erosion occurs and the bluff retreats, homeowners may request permits for bank stabilization. Shoreline modification updrift of these shorelines could accelerate erosion, as could sea level rise. Lack of stormwater facilities may also increase soil saturation and accelerate bluff erosion.

Despite these changes, the Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) analysis completed in 2010 as part of the Strategic Needs Assessment Report found that Langley was within a reach of shoreline that has some of the least degraded geomorphic processes in Puget Sound. There are opportunities both to preserve remaining intact areas and to restore degraded functions within the City's shorelines.

3.0 EXISTING RESTORATION PROGRAMS

A number of local and regional planning efforts have been developed to address water resource management, water quality, and salmon habitat recovery in Puget Sound. These existing plans and programs provide a framework of goals, policies, and funding mechanisms. The goals, policies, and actions identified in this restoration plan should coordinate and be consistent with this broader framework of conservation and restoration work in the region.

Table 2 provides a summary of government, Tribal, and nonprofit organizations involved in programs that affect shorelines on Whidbey Island and greater Puget Sound. Agencies and organizations are listed in alphabetical order.

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Table 2. Potential Restoration Partner Organizations and their Roles in Future Restoration

Partner Agency or Organization	Mission and Scope	Role in Future Restoration Efforts
Adopt-A-Stream Foundation www.streamkeeper.org	Provides educational programs and performs restoration work on streams and wetlands. Examples of restoration projects include daylighting streams, installing fish ladders, installing riparian plantings, adding large wood to streams, and public outreach. AASF worked with community members to restore riparian habitat along Maxwelton Creek on Whidbey Island.	Provide public education, assist with design and implementation of restoration projects.
Environmental Protection Agency Region 10: Pacific Northwest Grants Administration Unit yosemite.epa.gov/R10/HOMEPAGE.NSF/webpage/Grants	Through the Clean Water State Revolving Fund Program, EPA provides funds to states and tribes who make loans to communities, individuals, and others for high-priority activities to improve water quality. The Nonpoint Source Implementation Grant (319) Program funds designated state and tribal agencies to implement approved nonpoint source management programs. EPA also provides grants through the Wetland Protection, Restoration, and Stewardship Discretionary Funding Program.	Potential funding for water quality improvement programs, wetlands protection and restoration, estuary management efforts, wildlife habitat restoration, streambank buffer zones, and nonpoint source pollutant control.
Forterra (formerly Cascade Land Conservancy) www.forterra.org	Conserves natural and working landscapes in the Olympic and central Cascade regions through acquisition of lands and conservation easements.	Potential partner for acquisition of conservation easements or properties for restoration.
Interagency Committee for Outdoor Recreation Washington Wildlife Recreation Program www.rco.wa.gov/grants/wwrp.shtml	Provides funding for a broad range of land protection and outdoor recreation projects, including park acquisition and development, habitat conservation, and construction of outdoor recreation facilities.	Potential funding source for habitat conservation and recreation projects in shoreline areas.
Island County Beach Watchers www.beachwatchers.wsu.edu/island	Program administered by WSU Extension to train volunteers to monitor beaches, provide public education, and participate in restoration projects. More than 300 Island County volunteers have completed Beach Watcher training.	Source of information and volunteers for restoration projects.

Partner Agency or Organization	Mission and Scope	Role in Future Restoration Efforts
<p>Island County Marine Resources Committee</p> <p>www.islandcountymrc.org/ Island County</p>	<p>The MRC is an advisory body to county government, established in 1999 under the federal Northwest Straits Initiative. Members are volunteers from diverse local interests. The MRC is leading the Ebey's Prairie Bioswale project and is involved in marine nearshore biological surveys, derelict gear and creosote debris removal, public education and outreach (including WSU Shore Stewards), and establishment of Saratoga Passage Marine Stewardship Area.</p>	<p>Source of technical information and assistance; potential project partner for restoration and public outreach.</p>
<p>Island County Shore Stewards</p> <p>www.shorestewards.org/</p>	<p>Provides training and education to teach salmon-friendly best practices to shoreline property owners. Approximately 750 property owners in Island County have enrolled in the Shore Stewards program.</p>	<p>Source of information and training for private shoreline property owners.</p>
<p>Island County (WRIA 6) Lead Entity</p> <p>www.islandcountyeoh.org/page/57</p>	<p>Island County is the designated Lead Entity for salmon recovery in WRIA 6. As Lead Entity, the County evaluates and prioritizes proposed restoration projects in WRIA 6 based on input from a Water Resources Advisory Committee (WRAC) and a Technical Advisory Group (TAG). The WRAC is a citizen committee that receives technical assistance and guidance from the TAG, which includes private, state, tribal, and local representatives with expertise in salmon recovery. The WRAC and TAG evaluate proposals for restoration projects and create a prioritized list of projects for submittal to the Salmon Recovery Funding Board.</p>	<p>The Lead Entity provides the mechanism for local agencies and groups to obtain grants from the Salmon Recovery Funding Board.</p>

Partner Agency or Organization	Mission and Scope	Role in Future Restoration Efforts
<p>National Fish and Wildlife Foundation</p> <p>www.nfwf.org</p>	<p>NFWF administers grant programs for projects that improve and restore native salmon habitat, remove barriers to fish passage, or for the acquisition of land/ conservation easements on private lands where the habitat is critical to salmon species. Grant programs include Bring Back the Natives: A Public-Private Partnership for Restoring Populations of Native Aquatic Species; Five-Star Restoration Matching Grants Program; Marine Debris Prevention and Removal Program; Puget Sound Marine Conservation Fund; the Migratory Bird Conservancy; and the Community Salmon Fund.</p>	<p>Potential funding source for salmon habitat enhancement projects and removal of marine debris.</p>
<p>National Wildlife Federation</p> <p>http://www.nwf.org/Get-Outside/Outdoor-Activities/Garden-for-Wildlife.aspx</p>	<p>Runs a backyard wildlife certification program. Whidbey Island recently became a Certified Community Wildlife Habitat.</p>	<p>Potential partner in providing education to property owners on gardening and landscaping for wildlife habitat.</p>
<p>NOAA Restoration Center Community-based Restoration Program Northwest Region</p> <p>www.habitat.noaa.gov/restoration/programs/crp.html</p>	<p>A financial and technical assistance program that helps communities implement restoration projects. Programs include 3-Year Partnership Grants, Project Grants, American Sportfishing Association's FishAmerica Foundation Grants, National Fish & Wildlife Foundation/National Association of Counties Coastal Counties Restoration Initiative, and American Rivers funding for fish passage projects.</p>	<p>Potential source of funding and technical assistance for salmon habitat enhancement projects.</p>
<p>Northwest Straits Commission</p> <p>www.nwstraits.org</p>	<p>The Commission provides guidance and offers resources to the marine resources committees, with the goal of mobilizing science to focus on key priorities and coordinating regional priorities for the ecosystem. Manages the Puget Sound derelict gear removal project which has removed thousands of derelict nets and crab pots.</p>	<p>Source of technical information and assistance; potential project partner for restoration and public outreach.</p>

Partner Agency or Organization	Mission and Scope	Role in Future Restoration Efforts
<p>Northwest Straits Foundation www.nwstraits.org/ Foundation</p>	<p>Mission is to protect and restore the marine resources of the Northwest Straits by supporting research, monitoring, restoration, stewardship, conservation and education programs, and projects at the local and regional level. Seeks funding for projects and programs in partnership with the Northwest Straits Commission, the seven County Marine Resources Committees, Tribes, federal/state/local agencies, universities, other non-profit organizations, and businesses.</p>	<p>Potential partner in obtaining funding for restoration projects.</p>
<p>People for Puget Sound pugetsound.org</p>	<p>Non-profit organization founded in 1991 to protect the health of Puget Sound. Key programs address community-based restoration, oil spill prevention, stormwater management, toxics, septic systems, and public involvement and education.</p>	<p>Potential partner to garner community and volunteer support for shoreline restoration and education projects.</p>
<p>Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) www.pugetsoundnearshore.org/</p>	<p>PSNERP is a regional organization that is responsible for identifying significant ecosystem problems in the Puget Sound basin, evaluating potential solutions, and restoring and preserving critical nearshore habitat. The Estuary and Salmon Restoration Program (ESRP) is a protection and restoration funding opportunity being developed by PSNERP to support the transition from opportunistic project funding to strategic and sustained nearshore ecosystem restoration in Puget Sound. The ESRP uses state capital funds and NOAA Restoration Center resources to fund restoration and protection projects.</p>	<p>Assist with identification of recommendations for restoration actions. Potential funding source for nearshore restoration projects.</p>
<p>Salmon Recovery Funding Board (SRFB) www.rco.wa.gov/boards/srfb.shtml</p>	<p>Supports salmon recovery by funding habitat protection and restoration projects and related programs and activities that produce sustainable and measurable benefits for fish and their habitat. Distributes funds through two grant programs: SRFB grants and Family Forest Fish Passage Program grants.</p>	<p>Potential funding source for salmon recovery projects.</p>
<p>Stewardship Partners www.stewardshippartners.org</p>	<p>A non-profit organization that helps private landowners restore and preserve the natural landscapes of Washington state. Major projects include the promotion of low impact development techniques and rain gardens.</p>	<p>Source of information and workshops on low impact development techniques.</p>

Partner Agency or Organization	Mission and Scope	Role in Future Restoration Efforts
The Nature Conservancy www.nature.org/ourinitiatives/regions/northamerica/unitedstates/washington/index.htm	Conservation organization working around the world to protect ecologically important lands and waters for nature and people through education and land acquisition.	Potential source of funding for land acquisition and protection; public involvement and education.
U.S. Fish & Wildlife Service Washington Fish and Wildlife Office www.fws.gov/wafwo/WPR.html	Administers the Partners for Fish and Wildlife Program, Puget Sound Program, National Fish Passage Program, Cooperative Endangered Species Conservation Fund, and North American Wetlands Conservation Act Grants Program.	Potential source of funding and technical assistance for wetlands and wildlife conservation projects, barrier culvert removal, off-channel habitat, restoration of native vegetation.
Washington Department of Fish and Wildlife wdfw.wa.gov/grants/	State agency with a dual mandate from the Washington legislature to: (1) protect and enhance fish and wildlife and their habitats; and (2) provide sustainable, fish and wildlife-related recreational and commercial opportunities. WDFW administers grant programs (Aquatic Lands Enhancement Account Volunteer Cooperative Projects Program and Landowner Incentive Program) for the protection, enhancement, or restoration of habitat.	Technical assistance for fish and wildlife enhancement projects. Potential grant funding source. Permitting for in-water restoration work.
Washington State Department of Ecology Water Quality Program www.ecy.wa.gov/programs/wq/wqhome.html	Ecology administers several grant programs to address aquatic invasive vegetation and water quality, including: Aquatic Weeds Financial Assistance Program, Freshwater Algae Control Program, Centennial Clean Water Fund, State Revolving Loan Fund, and Section 319 Nonpoint Source Grants Program. Coastal habitat funding programs include the Coastal Protection Fund and Coastal Zone Management Administration/ Implementation Awards.	Potential funding source for projects to control invasive aquatic vegetation, improve water quality, protect and restore coastal habitat.

Partner Agency or Organization	Mission and Scope	Role in Future Restoration Efforts
<p>Washington State Department of Health Office of Shellfish and Water Protection</p> <p>www.doh.wa.gov/ehp/sf/default.htm</p>	<p>Mission is to improve the health of people in Washington state by ensuring shellfish are safe to eat, beaches are safe for swimming, and on-site sewage and reclaimed water systems are properly managed.</p>	<p>Provides monitoring data and advisories about marine water quality and biotoxins.</p>
<p>Washington State Department of Natural Resources (DNR) Aquatic Lands Restoration Funding Aquatic Resources Division</p> <p>www.dnr.wa.gov/ResearchScience/Topics/AquaticClean-UpRestoration/Pages/aqr_restoration_program.aspx</p>	<p>DNR partners with other organizations to remove and fund removal of creosote piles, derelict vessels, and other cleanup in the nearshore environment. Projects include removing debris that washes onto area beaches, lagoons, and estuaries, as well as removing structures and pilings that line the nearshore and no longer serve a function.</p> <p>DNR's Aquatic Restoration Program works to restore, enhance, create, and protect healthy ecological conditions in freshwater, saltwater, and estuarine aquatic systems through partnerships with agencies and organizations.</p>	<p>Potential source of funding, support for grant applications, restoration design, project management and implementation.</p>
<p>Whidbey Audubon Society</p> <p>whidbeyaudubon.org/</p>	<p>Mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats.</p>	<p>Potential to help recruit volunteers for restoration projects.</p>
<p>Whidbey Camano Land Trust</p> <p>www.wclt.org</p>	<p>Protects land through acquisition and conservation easements. Provides public education and stewardship. Has protected over 7,000 acres in Island County since 1984.</p>	<p>Potential partner for land conservation projects.</p>
<p>Whidbey Island Conservation District</p> <p>www.whidbeycd.org</p>	<p>A political subdivision of state government that has worked with farmers, landowners, and local partners to preserve natural resources on Whidbey Island since 1967.</p>	<p>Potential to assist with information and assistance to property owners on topics such as low impact development techniques.</p>
<p>Whidbey Watershed Stewards</p> <p>http://www.whidbeywatersheds.org/</p>	<p>Promotes nearshore and watershed health by linking water, land, wildlife, and people on Whidbey Island through education, research, and restoration.</p>	<p>Potential to assist landowners with restoring streamside properties on Whidbey Island and assist in obtaining funding and volunteer help.</p>

Partner Agency or Organization	Mission and Scope	Role in Future Restoration Efforts
WSU Island County Extension county.wsu.edu/island/Pages/default.aspx	Provides practical guidance for protecting streams, rivers, lakes, wetlands, estuaries, and marine waters.	Assist with information and technical guidance on numerous water-related topics such as rain gardens, septic system maintenance, and shoreline protection.

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4.0 RESTORATION GOALS, PRIORITIES, AND AREAS

This plan seeks to establish a basic framework for improving the quality and sustainability of shoreline resources in Langley over time in a collaborative and cohesive manner. This overarching goal is consistent with the Shoreline Management Act and with the regional strategy for restoring Puget Sound, which is embodied in Engrossed Substitute Senate Bill (ESSB) 5372 signed by the state legislature in May 2007. In ESSB 5372, the legislature declared that:

“Puget Sound, including Hood Canal and the waters that flow to it are a national treasure and a unique resource. Residents enjoy a way of life centered around these waters that depends upon clean and healthy marine and freshwater resources. Puget Sound is in serious decline.... This decline is indicated by loss of and damage to critical habitat, rapid decline in species populations, increases in aquatic nuisance species, numerous toxics contaminated sites, urbanization and attendant storm water drainage, closure of beaches to shellfish harvest due to disease risks, low-dissolved oxygen levels causing death of marine life, and other phenomena. If left unchecked, these conditions will worsen. Puget Sound must be restored and protected in a more coherent and effective manner. The current system is highly fragmented. Immediate and concerted action is necessary by all levels of government working with the public, nongovernmental organizations, and the private sector to ensure a thriving natural system that exists in harmony with a vibrant economy.”

The legislature directed the Puget Sound Partnership (the Partnership) to coordinate and lead the regional restoration effort. The Partnership has developed an ‘Action Agenda’ that describes the steps needed to restore the Sound by 2020. In identifying specific restoration goals and objectives that the Action Agenda must achieve, the legislature described the characteristics of a healthy and restored Puget Sound as follows:

- A healthy human population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem;
- A quality of human life that is sustained by a functioning Puget Sound ecosystem;
- Healthy and sustaining populations of native species in Puget Sound, including a robust food web;
- A healthy Puget Sound where freshwater, estuary, nearshore, marine, and upland habitats are protected, restored, and sustained;
- An ecosystem that is supported by groundwater levels as well as river and streamflow levels sufficient to sustain people, fish, and wildlife, and the natural functions of the environment; and
- Fresh and marine waters and sediments of a sufficient quality so that the waters in the region are safe for drinking, swimming, shellfish harvest and consumption, and other human uses and enjoyment, and are not harmful to the native marine mammals, fish, birds, and shellfish of the region.

This plan seeks to achieve those same goals by contributing to the Puget Sound restoration effort and to the specific strategies being developed by the Partnership as part of the 2020 Action Agenda (Puget Sound Partnership, 2008). This plan is also intended to be compatible with and incorporate the restoration goals already developed by other restoration planning entities and organizations in the region.

4.1 Restoration Vision

The following vision statement for the City of Langley establishes the overarching idea of the future restored ecosystem and provides a basis for the framework, including the restoration goals and objectives.

Restoration Vision: Degraded ecological processes and habitats of the Langley shoreline are restored so that, when combined with protection of existing resources, a net improvement to the shoreline ecosystem is obtained to benefit native fish and wildlife and the people of Langley. Restoration occurs over time through a combination of public and private ventures and leverages opportunities presented by shoreline development in a way that enhances the environment and is compatible with planned shoreline uses.

4.2 Restoration Goals and Objectives

Table 3 summarizes the City's goals for restoring its shoreline areas. These goals identify the direction of needed improvement. For each goal, Table 3 lists examples of specific objectives that can be measured to assess progress over time toward achieving the stated goals. For example, to meet the goal of improving water quality, an objective would be to remove creosote pilings.

Table 3. Shoreline Restoration Goals and Example Objectives

Goal	Example Objectives
Improve or maintain water quality	<ul style="list-style-type: none"> • Remove/replace unused creosote pilings. • Retrofit stormwater systems to current standards. • Implement low impact development projects to reduce runoff.
Restore degraded and lost habitat within the boat harbor	<ul style="list-style-type: none"> • Replace overwater structures with grating to allow for light penetration to the water. • Remove derelict structures as part of marina redevelopment.
Improve the connectivity of the shoreline environments	<ul style="list-style-type: none"> • Protect and restore native vegetation corridors along stream mouths and the nearshore riparian zone. • Ensure that culverts allow for fish passage.
Protect and restore natural processes that are needed to support no net loss of ecosystem and habitat functions	<ul style="list-style-type: none"> • Protect naturally eroding bluffs that provide sediment sources to beaches.

4.3 Restoration Opportunities and Areas

Table 4 provides a list of specific restoration opportunities and sites in the City's shoreline planning area. Exact locations for each type of restoration would be determined during the design of specific projects. The table summarizes how each opportunity would affect shoreline ecological functions, and assigns a general priority level and timeline for each project.

Restoration opportunities are generally divided into low- and high-priority projects. **High priority** projects are those that meet at least some of the following criteria:

- The project would increase functional connectivity or link existing habitats.
- Public property or willing private property owners are involved.
- The project is compatible with adjacent land uses.
- Public support is likely.
- The project has a good likelihood of success based on ecological processes and functions in the watershed.
- The project is likely to be eligible for grant funding and/or partnerships with other agencies or organizations.

Table 4 also lists the recommended timing for each restoration opportunity as “short-term” or “long-term.” **Short-term** (approximately 1-5 years) restoration projects include those that could be implemented by local landowners and volunteers and that would benefit the areas that are most in need. Short-term restoration efforts include habitat restoration and enhancement efforts in publicly owned areas of the shorelines. These projects could be implemented in the near term, depending on grant cycles and coordination with volunteer and community organizations. **Long-term** (approximately 5-10 years) restoration projects could be those that require coordination with other jurisdictions or that cover larger land areas. These projects may be more difficult to implement and would likely require more planning and permitting.

4.4 Project Evaluation

When a project is proposed for implementation, it should be evaluated to ensure that its objectives are consistent with this restoration plan and warrant implementation above other candidate projects. Because of funding sources or other constraints, the scope of individual projects may be narrow. Also, the list of potential projects may change over time as new projects are identified, as restoration occurs, and as other environmental conditions, or our knowledge of them, change.

When evaluating potential projects, the following criteria should be considered in assessing priority (the criteria are not listed in order of importance):

- Restoration meets the goals and objectives for shoreline restoration.

- Restoration of processes is generally of greater importance than restoration of functions.
- Restoration avoids residual impacts to other functions or processes.
- Projects address a known degraded condition.
- Conditions that are progressively worsening are of greater priority.
- Restoration has a high benefit-to-cost ratio.
- Restoration is feasible, such as being located on and accessed by public property or private property that is cooperatively available for restoration. Restoration should avoid conflicts with adjacent property owners.
- There is public support for the project.
- The project is supported by and consistent with other restoration plans, such as the WRIA 6 salmon recovery plan.

The WRIA 6 Multi-Species Salmon Recovery Plan established that protection projects should be of greater priority than restoration. In addition, recent recommendations from the Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) have highlighted that restoration projects should be of greater priority than enhancement projects (Cereghino et al. 2011).

Overall, PSNERP and many restoration practitioners in Puget Sound maintain that restoration projects that directly address the degradation of nearshore ecosystem processes are preferred over those that simply address lost ecosystem structure or focus on individual species. Process-based restoration involves making intentional changes to an ecosystem to allow erosion, accretion, tidal exchange, accumulation of wood debris, and other natural processes to occur. Process-based restoration projects tend to result in more resilient, self-sustaining ecosystem processes. In contrast, restoration that is focused on habitat structure (i.e., species-based) aims to improve the services an ecosystem provides to a single species or a group of species by providing a specific structure or habitat composition. Species-based restoration focuses on restoring ecosystem structure, and is considered a temporary fix as the underlying ecosystem processes are not addressed by the restoration.

Table 4. City of Langley Restoration Opportunities

Conditions and Causes of Impairment	Shoreline Ecological Function Affected	Programmatic Restoration and Management Opportunities	Priority and Timing
Bulkheads on the shoreline deflect wave action and disrupt natural coastal processes. Bulkheads disrupt natural delivery of sediment to coastal areas, as well as increase beach scouring.	Hydraulic Sediment transport and deposition	Low probability of removing or softening shoreline armoring in Langley West because of the presence of homes and in the harbor area because of the presence of vertical structures and the fact that the entire Langley waterfront is developed over what would have been the backshore area.	Low priority; public support unlikely. Long-term
Alteration to and development near feeder bluffs can reduce the potential of these areas to provide sediment delivery to coastal zones, disrupting natural coastal beach accretion. The seawall and other bulkheads have separated coastal bluffs from the shoreline.	Sediment delivery and beach creation	Protecting unarmored bluffs should be a priority. Streams can also be a source of sediment to the nearshore. Moderate probability of ensuring that existing culverts are large enough and fish-friendly.	High priority for bluff protection. Short-term if property owners are willing.
Marina riparian vegetation is generally absent due to development of the seawall and harbor area. Input of wood and other organic materials is lacking. The absence of a back beach reduces the chances to accumulate large wood.	Riparian habitat structure	Explore potential to remove or soften portions of the seawall. Revegetate area above seawall with native vegetation. Redevelopment of the marina could be an opportunity to enhance shoreline riparian vegetation	High priority, short term for revegetation. Lower priority, longer term for seawall removal or replacement as part of marina redevelopment.
Man-made debris and remnant structures, including pile and wood structures in the harbor area and along Langley East, potentially disrupt nearshore habitats and sediment transport and accretion processes.	Nearshore habitat Water quality	Target removal of abandoned and dilapidated man-made structures in the shoreline. Determine if remnant pilings are treated with creosote and prioritize removal.	High priority, short term. Programs and funding currently available. Identified as a project in the WRIA 6 2011-13 Three-Year Implementation Work Plan, particularly in forage fish spawning areas.

Conditions and Causes of Impairment	Shoreline Ecological Function Affected	Programmatic Restoration and Management Opportunities	Priority and Timing
Overwater structures created by the docks in the harbor area create uniform shade, altering the predator-prey dynamic and the marine vegetation communities.	Nearshore habitat	Decreasing total overwater coverage is unlikely. However, in the event that the marina is redeveloped, grating can be used to increase light penetration through the docks and piers.	High priority when marina is redeveloped.
Conveyance and treatment problems within the stormwater infrastructure in Langley contribute to water quality issues and add to the instability of bluffs.	Water quality Bluff stability	Implement recommendations of the 2009 Comprehensive Stormwater Management Plan including the use of low impact development (LID) tools, such as rain gardens, pervious pavement and other methods described in the LID Manual.	High priority, short term.

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5.0 IMPLEMENTATION STRATEGIES AND FUNDING SOURCES

To ensure that restoration goals are being achieved, it is important for the City to evaluate the performance of this plan and adapt to changing conditions. At a minimum, this restoration plan (as well as the entire Shoreline Master Program) will be reevaluated according to the schedule adopted by the state legislature (the next update for Langley would be in 20__ under the current schedule). ESA recommends that the City reevaluate the success of the SMP and its restoration goals consistent with the schedule for update of the City's Comprehensive Plan.

The City intends to adhere as closely as possible to the timelines and benchmarks described in Section 6, depending on the availability of staff and funding. A key strategy is to partner with other agencies and organizations on large or complex projects that have regional benefits to salmon recovery. For example, as part of its SMP restoration planning, Island County has undertaken a process to prioritize potential restoration projects along the county's shorelines using guidance in the *Strategies for Nearshore Protection and Restoration in Puget Sound* (Cereghino et al. 2011). There may be opportunities for the City to participate in restoration projects that the County identifies through this process.

The City can consider including restoration measures with public works projects such as those identified in the City's Comprehensive Stormwater Management Plan (URS and Isaksen 2009). Restoration could also be incorporated with recreation projects such as parks and trails. The Parks, Open Space, and Trails Element of the City's Comprehensive Plan (2011) describes that critical areas, including shorelines, are the foundation for a connected system of habitat and open space areas throughout the city.

Another way the City could accomplish restoration projects is by using community volunteers. Volunteers could be recruited for project implementation and monitoring and the City could provide equipment and expertise. The City could also fund a volunteer coordinator to organize projects, solicit environmental groups and individual volunteers to complete the projects, and partner or coordinate with other government entities on projects.

When shoreline development occurs, the City could look for opportunities to conduct restoration in addition to the minimum mitigation requirements. Development may present timing opportunities for restoration that would not otherwise occur and may not be available in the future. Mitigation may also allow for the "banking" of opportunities. In certain cases, on-site mitigation opportunities may be limited due to building site constraints, limited potential ecological gains, or other site-specific factors. In these instances, the proposed SMP regulations provide for the City shoreline administrator to identify an off-site restoration area in lieu of on-site mitigation.

The City could also provide development incentives for restoration that might include waiving some or all development application fees or waiving City-required infrastructure improvement fees. This could encourage developers to try to be more imaginative or innovative in their development designs.

5.1 Sources of Funding and Technical Assistance

A number of state and federal agencies provide opportunities for grant funding and technical assistance, particularly efforts related to salmon recovery. Table 5 provides a summary of the major funding and technical assistance resources available to the City of Langley and its residents.

Management measures that address each kind of restoration action are described in detail in the PSNERP document *Management Measures for Protecting and Restoring the Puget Sound Nearshore* (Clancy et al. 2009).

The City could consider using a Public Benefit Rating System similar to the program administered by the Island County Planning & Community Development Department (<http://www.islandcounty.net/planning/PBRS.htm>). The PBRS is authorized under the Open Space Taxation Act (RCW 84.34) to encourage private landowners to preserve natural features for "open space" tax relief.

Ecology has published a technical guidance document for local governments who wish to use a Public Benefit Rating System to improve landowner stewardship of natural resources. More information about this program can be found in *Applying the Public Benefit Rating System as a Watershed Action Tool* (Rubey 1999). The guidance in this report provides "technically based property selection criteria designed to augment existing open space efforts with protection of key natural resource features which directly benefit the watershed. Communities can choose to use any portion, or all, of these criteria when tailoring a Public Benefit Rating System to address the specific watershed issues they are facing."

Another possibility is establishing a Shoreline Restoration Fund. A chief limitation to implementing restoration is local funding, which is often required as a match for state and federal grant sources. To foster ecological restoration of the City's shorelines, the City could establish an account that may serve as a source of local match monies. This fund could be administered by the City shoreline administrator. The City could explore approaches to establishing this fund such as a surcharge on permit fees or an in-lieu fee program. Monies drawn from the fund would be used as a local match for restoration grant funds, such as the Salmon Recovery Funding Board (SRFB), Aquatic Lands Enhancement Account (ALEA), or another source.

5.2 Voluntary Restoration on Private Lands

Most of the shoreline area in Langley is located on private properties. Public outreach and voluntary restoration actions are a key component of the success of this plan. Private property owners often serve as the best stewards for their land and will voluntarily enhance or restore conditions. As stated in Chapter 1, the Shoreline Restoration Plan is a non-regulatory and voluntary program undertaken by the City and environmental partners willing to improve habitat and existing conditions within the shoreline jurisdiction.

Voluntary actions may include citizens assisting a public agency or stewardship group with plantings or other measures on public lands such as parks or open space. Voluntary actions may also include restoration undertaken on private properties by landowners to improve habitat and

water quality. Voluntary restoration on private properties may range from minor projects that do not require permitting in and of themselves (such as removal of weeds) to larger-scale projects that require permit approval (such as grading, culvert removal, or streambank stabilization). Expert assistance is required to design and permit large-scale restoration projects. Expertise needed may include engineering, fisheries biology, wetland or wildlife science and/or or geotechnical services. Minor restoration may not require expert assistance and can be accomplished with general information provided by the City, Island County, or state government.

The following web sites provide information for shoreline landowners for voluntary restoration actions:

- Water quality – aquatic plants, algae and lakes:
(<http://www.ecy.wa.gov/programs/wq/links/plants.html>)
- Protecting Your Stream - Ten Actions for Streamside Property Owners (WSU Extension Office, Clark County, 2008) (available at:
<http://clark.wsu.edu/volunteer/ws/faqs.html>)
- Washington Department of Fish and Wildlife Backyard Wildlife Sanctuary Program
(<http://wdfw.wa.gov/living/backyard/>)
- National Wildlife Federation Garden for Wildlife Program
(<http://www.nwf.org/Get-Outside/Outdoor-Activities/Garden-for-Wildlife.aspx>)

Shore Stewards are shoreline property owners and residents of waterfront communities with shared beach access who voluntarily follow 10 wildlife-friendly guidelines in caring for their beaches, bluffs, gardens, and homes. These guidelines help them create and preserve a healthy shoreline environment for fish, wildlife, birds, and people. This program was created to help shoreline residents feel more connected to the nearshore ecosystem because it has been found that when people understand the natural processes at work on their beaches, they may play a more active, positive role in the preservation of healthy, fish-friendly wildlife habitats.

The 10 guidelines for shoreline living are described in detail in the Shore Stewards *Guide for Shoreline Living*. They include the following:

1. Use water wisely.
2. Maintain your septic system.
3. Limit pesticide and fertilizer usage.
4. Manage upland water runoff.
5. Encourage native plants and trees.
6. Know permit procedures for shoreline development.
7. Develop on bluffs with care.

8. Minimize bulkheads, docks and other structures.
9. Respect intertidal life.
10. Preserve eelgrass beds and forage fish spawning habitat.

Shore Stewards was created in 2002 with grant funding by the Island County Marine Resources Committee. The pilot program was launched on Camano Island by a group of Washington State University (WSU) Beach Watchers who wrote the Shore Stewards Guide. Shore Stewards is now expanding to other counties of Puget Sound.

Since the City recognizes that there are important opportunities to improve shoreline ecological conditions and functions through non-regulatory, volunteer actions by shoreline residents and property owners, it might examine the potential for property tax breaks for shoreline property owners who are actively managing their property for habitat protection or enhancement. This type of program would require a certification and tracking component.

5.3 Challenges to Implementation

There are a number of potential complicating factors between the development of a shoreline restoration plan and on-the-ground implementation of its programs and projects. Some of these challenges are briefly summarized below:

- **Lack of funding:** Designing, carrying out, and monitoring the success of restoration efforts can be an expensive undertaking, particularly at larger (e.g., watershed or reach) scales. In general, funding for restoration is limited and competition for funds intensive.
- **Landowner participation:** Landowners in areas identified as priorities for restoration efforts may be unwilling or unable to participate in those efforts, while others may be willing to participate. Education and establishing incentives and funds will be key.
- **Project permitting:** Obtaining necessary permits from state and federal regulatory agencies can require substantial time and effort. Although encouraged and allowed by the SMP, complicated restoration projects may take a year or more to permit. Finding ways locally to expedite the process will be an incentive.
- **Climate change:** Changes in regional weather conditions have the potential to dramatically alter seasonal storms and flooding. Depending on the scale of change and time period over which changes occur, restoration priorities could shift substantially within a relatively short period of time. The City needs to keep aware of the everchanging forecasts for drought conditions/fire hazards, flooding/landslide danger, and potential sea level rise implications.

6.0 TIMELINES AND BENCHMARKS

A suggested timeline for implementation of this restoration plan is as follows. The accomplishment of this timeline depends largely on the availability of funding.

Within 2 years of adoption of this plan:

- Identify at least two restoration projects and assign staff to establish a schedule and explore funding options and partnerships.
- Assign staff and dedicate funding to a shoreline public education program and City-sponsored web page.

Within 5 years of adoption of this plan:

- Complete at least two of the identified restoration projects.
- Hold at least three public workshops on voluntary shoreline restoration measures.
- Have a shoreline restoration program web page online.

Within 7 years of adoption of this plan:

- Complete a feasibility study and begin conceptual design for at least one of the long-term restoration projects identified in Table 5.

Over time, restoration efforts must be evaluated against a set of benchmarks. In addition to project monitoring required for individual restoration and mitigation projects, it will be important for the City to conduct system-wide monitoring of shoreline conditions and development activity, recognizing that individual project monitoring does not provide an assessment of overall shoreline ecological health. This is necessary to assist in the documentation of cumulative impacts and no net loss of shoreline function as part of the next scheduled SMP update.. The following three-prong approach is suggested:

1. Track information using the City's permit system as activities occur (development, conservation, restoration and mitigation), such as:
 - New shoreline development
 - Shoreline variances and the nature of the variance
 - Compliance issues
 - New impervious surface areas
 - Number of pilings
 - Removal of fill

- Vegetation retention/loss
- Bulkheads/armoring

The City's requirement of project proponents to monitor as part of project mitigation will also be incorporated and helpful in this process. More specific benchmarks are developed for specific projects. For example, the benchmarks for a riparian revegetation project include reduction in cover of non-native plants, survival of installed plants, and increase in cover of native plants along the shoreline. Regardless, as development and restoration activities occur in the shoreline area, the City will need to monitor shoreline conditions to determine whether both project-specific and SMP overall goals are being achieved.

2. Periodically review and provide input to the regional ongoing monitoring programs, such as the following:
 - DNR monitoring
 - Puget Sound Ambient Monitoring Program, University of Washington
 - Puget Sound Nearshore Ecosystem Restoration Program

Through this coordination with regional agencies, the City can keep current on any major environmental changes that might be occurring, such as those associated with climate change.

3. Review status of environmental processes and functions at the time of periodic SMP updates to, at a minimum, validate the effectiveness of the SMP. Future review should consider what restoration activities actually occurred compared to stated goals, objectives, and priorities, and whether restoration projects resulted in a net improvement of shoreline resources.

Adaptive management is the process of continually improving management policies and practices to respond to results. Shoreline planning is iterative. As data are gathered and compared to past years' data, the City will be able to come to a clearer understanding of environmental processes and stressors. As understanding increases, the City will have the opportunity to adjust policies, regulations, and restoration priorities to adapt to changes in conditions and information. At a minimum, the City will be required to take corrective actions if the mandate of no net loss of shoreline ecological resources is not being met.

7.0 REFERENCES

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