

Final

Shoreline Restoration Plan Component of the Shoreline Master Program for the City Milton Shorelines: Surprise Lake and Hylebos Creek

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SHORELINE RESTORATION PLAN CITY OF MILTON

1.0 INTRODUCTION

The City of Milton's Shoreline Master Program applies to activities in the shoreline jurisdiction zone. Compensatory mitigation is required for activities that have adverse effects on the ecological functions and values of the shoreline. By law, the proponent of any such activity is required to return the subject shoreline to a condition equivalent to the baseline level at the time the activity takes place. It is understood that some uses and developments cannot always be mitigated fully, resulting in incremental and unavoidable degradation of the baseline condition. The subsequent challenge is to improve the shoreline over time in areas where the baseline condition is degraded, severely or marginally.

WAC Section 173-26-201(2)(f) of the Shoreline Master Program Guidelines (Guidelines)¹ says:

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

Degraded shorelines and aquatic areas are not just a result of pre-Shoreline Master Program activities, but also of unregulated activities and exempt development. The new Guidelines also require that “[l]ocal master programs shall include regulations ensuring that exempt development in the aggregate will not cause a net loss of ecological functions of the shoreline.” While some actions within shoreline jurisdiction are exempt from a permit, the Shoreline Master Program should clearly state that those actions are not exempt from compliance with the Shoreline Management Act or the local Shoreline Master Program. Because the shoreline environment is also affected by activities taking

¹ 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 <http://www.ecy.wa.gov/programs/sea/sma/guidelines/index.html> for more background.

place outside of a specific local master program’s jurisdiction (e.g., outside of city limits, outside of the shoreline area within the city), assembly of out-of-jurisdiction actions, programs and policies can be essential for understanding how the City fits into the larger watershed context. The latter is critical when establishing realistic goals and objectives for dynamic and highly interconnected environments.

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, improvements to water quality, and removal of bulkhead structures, piers, and armoring. 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).

As directed by the Guidelines, the following discussions provide a summary of baseline shoreline conditions, list restoration goals and objectives, and discuss existing or potential programs and projects that positively impact the shoreline environment. In total, implementation of the Shoreline Master Program (with mitigation of project-related impacts) in combination with this Restoration Plan (for restoration of lost ecological functions that occurred prior to a specific project) should result in a net improvement in the City of Milton’s shoreline environment in the long term.

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

2.0 SHORELINE INVENTORY SUMMARY

2.1 Introduction

The City recently completed a comprehensive inventory and analysis of its shorelines (The Watershed Company and Makers 2011) as an element of its Shoreline Master Program update. The purpose of the shoreline inventory and analysis was to gain a greater understanding of the existing condition of Milton’s shoreline environment to ensure the updated Shoreline Master Program policies and regulations are well-suited in protecting ecological processes and functions. The inventory describes existing physical

and biological conditions in the shoreline zones within City limits and includes recommendations for restoration of ecological functions where they are degraded. The *Shoreline Analysis Report for the City of Milton's Shorelines: Surprise Lake and Hylebos Creek* (The Watershed Company and Makers 2011) 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." At a minimum, the waterbodies designated as shorelines of the state are streams whose mean annual flow is 20 cubic feet per second (cfs) or greater and lakes whose area is greater than 20 acres. Shorelands are defined as:

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

The City's existing Shoreline Master Program is presently is in the process of being updated (The Watershed Company and Makers 2011).

2.3 Inventory

The City of Milton' shoreline inventory includes all land within the City's proposed shoreline jurisdiction (see Figure 1). In order to break down the shoreline into manageable units and to help evaluate differences between discrete shoreline areas, the shorelines have been divided into assessment units based on waterbody, land use and ecological condition. Hylebos Creek, with one non-contiguous jurisdictional wetland area, makes of one unit; Surprise Lake is the second. Table 1 shows the shoreline frontage and acreage of each assessment unit. A summary of inventory and analysis information from the Shoreline Analysis Report is presented in the following sections.

2.3.1 Land Use and Physical Conditions

The City of Milton is located partially in King County and partially in Pierce County. The City is bordered to the north by the City of Federal Way and unincorporated portions of King County. The City is bordered to the east and southeast by the City of Edgewood and to the southwest by the City of Fife. Unincorporated portions of Pierce County border the City to the west. The City encompasses approximately 2.6 square

miles. The study area for this report includes all land currently within the City’s proposed shoreline jurisdiction (Appendix D). The total area subject to the City’s updated SMP, not including aquatic area, is approximately 47.8 acres (0.075 square mile), and encompasses approximately 1.53 miles of shoreline.

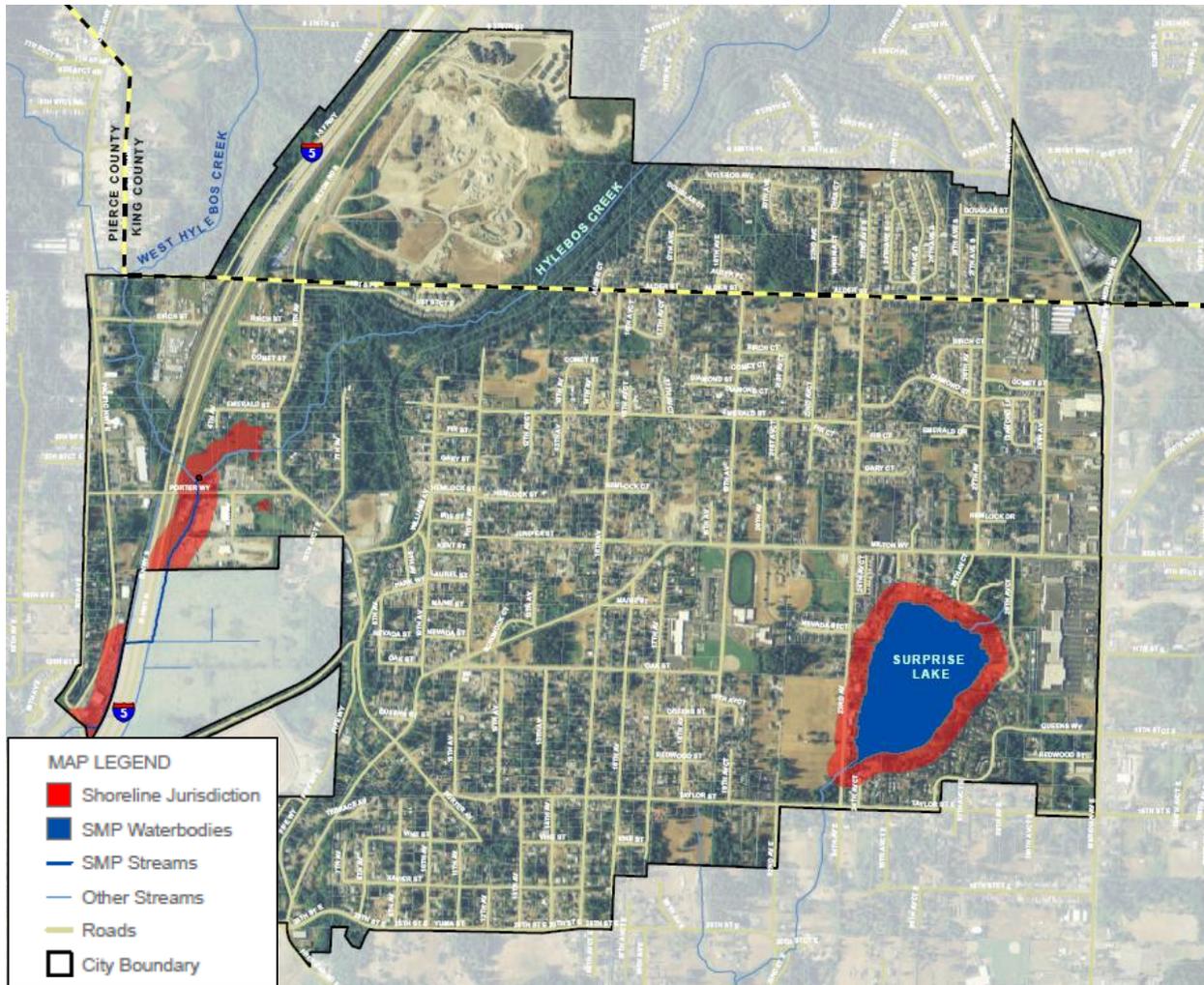


Figure 1. City of Milton shoreline jurisdiction.

Table 1. Dimensions of City of Milton shoreline assessment units.

Assessment Unit	Shoreline frontage (lineal feet)	Land Area ¹ (acres)
Surprise Lake	5,510	26.7
Hylebos Creek	2,561	21.1
TOTAL	8,071	47.8

¹Assessment unit area is the landward portion of the shoreline management area.

Present land use in shoreline jurisdiction varies between assessment units. Surprise Lake is nearly fully developed, with single-family and multi-family homes making up the majority of the area. Remaining area consists of two common greenbelt areas, three vacant lots, and a private recreational facility. There is no public access to the lake. Single-family residences in the Hylebos Creek assessment unit are confined to the area upstream of the 20-cfs point and are all adjacent to associated wetlands. Land use downstream of the 20 cfs point is industrial. Zoning generally reflects the land uses in each unit.

The elements of impervious surface, overwater cover, shoreline armoring, critical areas, listed species, water quality, and Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and listed species occurrence are shown in Table 2.

Table 2. Summary of Inventory by Assessment Unit.

Inventory Element	Shoreline Assessment Unit	
	Surprise Lake	Hylebos Creek
Impervious Surface	29.6%	47.8%
Overwater Cover¹	<ul style="list-style-type: none"> • 16,117 sf • 2.9 sf/linear foot of shoreline • 21 docks 	<ul style="list-style-type: none"> • 1,307 sf • 0.5 sf/linear foot of shorelines • Porter Way bridge crossing and one local access bridge
Shoreline Armoring¹	Bulkheads: 28%	N/A
Critical Areas	<ul style="list-style-type: none"> • Floodplain – 11.6% • PHS² bald eagle buffer – 100% • PHS waterfowl concentration/wetlands – 5.7% • Wetlands – 4.5% • Erosion hazard area – 83.5% • Seismic hazard area – 8.9% 	<ul style="list-style-type: none"> • Floodplain – 37.4% • Floodway – 9.5% • Wetlands – 35.1% • Landslide hazard area – 3.3% • Volcanic hazard area – 100% • Seismic hazard area – 87.2%
Listed Species	None	<ul style="list-style-type: none"> • Chinook salmon (potential but unlikely) • Steelhead (potential but unlikely) • Other salmonids known to use or potentially use Hylebos Creek are Coho, chum and pink salmon
Impaired Waters (303d/305b)	None	<ul style="list-style-type: none"> • Copper • Fecal coliform • Bioassessment • Dissolved oxygen

¹ Overwater cover and shoreline armoring information derived from aerial photograph interpretation by The Watershed Company
² Priority Habitats and Species

2.3.2 Biological Resources and Critical Areas

The City of Milton is located in King and Pierce Counties in the Puget Sound Region, and contains freshwater shorelines associated with Washington State's Water Resource Inventory Area (WRIA) 10: Puyallup-White River. The City's shorelines are more specifically located in the Hylebos Sub-basin, which covers 29 square miles and releases water directly into Puget Sound.

Surprise Lake is approximately 32 acres in size, consisting of the entire lake body, and drains into Surprise Lake Creek via an outlet in the southwestern corner of the lake. Surprise Lake Creek flows south-southwest before discharging to Hylebos Creek just south of the City limits. Several small pockets of scrub-shrub wetland and emergent wetland areas (vegetated with reed canarygrass or mowed) persist around the Surprise Lake shoreline (Adolfson Associates 2003).

Within the City, Hylebos Creek includes two separate segments within shoreline jurisdiction (separated by an area of Urban Growth Area (UGA)), totaling approximately 0.5 miles in length. The main stem of Hylebos Creek originates in King County near State Route 18, and then flows south into the City of Milton before joining West Hylebos Creek. After leaving the City limits, Hylebos Creek flows northwesterly before emptying into Commencement Bay in the City of Tacoma. Most wetlands along Hylebos Creek in and adjacent to the City of Milton are primarily palustrine emergent wetlands dominated by reed canarygrass. Other vegetation includes willow, cattails, and cottonwood (Adolfson Associates 2003). Wetland associated with portions of East Hylebos Creek and West Hylebos Creek, just north of their confluence, are within the jurisdictional shoreline unit. These extend upstream from the confluence of East and West Hylebos Creeks. They extend upstream along West Hylebos Creek to Interstate 5 and upstream along East Hylebos Creek to a point just west of the 5th Avenue culvert. A second, separate associated wetland area is located south of Porter Way, approximately 600 feet east of Hylebos Creek. This small mapped wetland is within the creek's 100-year floodplain and thus considered associated with the shoreline. The wetlands are separated from the creek by developed portions of the Milton Industrial Park.

Biological resources of the Milton shoreline areas perform hydrologic, vegetative, hyporheic and habitat functions, which are used in the Shoreline Analysis Report (The Watershed Company and Makers 2011) to evaluate assessment unit performance. They are summarized in the following paragraphs and Table 3.

Biological functions of Surprise Lake rate low-moderate. Residential lots dominated by lawn, as well as other nearby developed areas outside of shoreline jurisdiction, likely carry contaminants from fertilizers, pesticides, sediments, hydrocarbons, metals and other pollutants to the lake, impacting water quality function. The lack of native shoreline vegetation and wetlands affect the shoreline's ability to perform hydrologic functions and habitat functions. A general lack of historical water quality controls

through stormwater management has also contributed to the continued degradation of Surprise Lake water quality. Some habitat functions, such as food production and delivery, are supported by non-native vegetation on lakeside properties. Bank armoring detracts from habitat function of the shoreline, but protect the shoreline by providing stability. Overall, the lack of both living and dead vegetation greatly limits many biological functions, include wave attenuation, nutrient and sediment removal, bank stabilization, temperature regulation, and food production and delivery. The vegetated shoreline on the Camp Edgewood property helps to provide some of these functions.

The Hylebos Creek shoreline functions moderately. Adjacent wetlands and sections of broad floodplain contribute to the creek's ability to store flood water and sediment, perform water quality functions, and attenuate flow. However, the channelized and industrial downstream sections result in a simple channel lacking habitat features and impeding the creek's ability to recruit large woody debris, dissipate stream flow energy, and perform habitat functions. The coarse soils of the area limit hyporheic function in the creek.

In addition to the floodplain and wetlands associated with Hylebos Creek, the entirety of the creek's shoreline area is a volcanic hazard area, and most of it is seismic hazard area. Surprise Lake includes more than 83% erosion hazard area and almost 10% seismic hazard area, as well as small floodplain and wetland areas (11.6% and 4.5%, respectively). The lake is also entirely within a WDFW PHS bald eagle buffer and has a small area of PHS waterfowl concentration. There are no State or Federal listed fish species in the lake, but Hylebos Creek supports Chinook salmon and steelhead trout, as well as potentially containing Coho, chum and pink salmon.

Table 3. Summary of shoreline inventory ecological function ratings by assessment unit.

Shoreline Processes and Functions Occurring within Assessment Unit	Shoreline Assessment Unit	
	Surprise Lake	Hylebos Creek
Hydrologic		
Storage of water and sediment	Low-moderate	Low-moderate
Transport of water and sediment	N/A	Moderate
Attenuation of flow energy	Moderate	Moderate
Developing pools, riffles and gravel bars	N/A	Low-moderate
Removing excess nutrients and toxic compounds	Low-moderate	Moderate
Recruitment and transport of LWD and other organic materials	Low-moderate	Low
Vegetation		
Temperature regulation	Moderate	Low-moderate
Water quality improvement	Low-moderate	Moderate
Attenuation of flow energy	Moderate	Low-moderate
Sediment removal	Low-moderate	Moderate
Recruitment of LWD and organic matter	Low-moderate	Low
Hyporheic		
Removing excess nutrients and toxic compounds	N/A	Moderate
Water storage and maintenance of base flows	N/A	Moderate
Support of vegetation	N/A	Moderate
Habitat		

Shoreline Processes and Functions Occurring within Assessment Unit	Shoreline Assessment Unit	
	Surprise Lake	Hylebos Creek
Physical space and conditions for life history support	Low-moderate	Low-moderate
Food production and delivery	Low-moderate	Moderate
Summary	Low-moderate	Moderate

3.0 RESTORATION GOALS AND OBJECTIVES

In accordance with statewide provisions (WAC 173-26-201(2)(f)), this restoration plan will “include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program.” The documents summarized in this section target at various levels the general goal of shoreline ecological function improvement. In support of this goal, the City’s 2011 Shoreline Master Program (4.C.6.b.) includes the following policies as part of the Shoreline Restoration and Ecological Enhancement use requirements:

1. The City should consider shoreline restoration and ecological enhancement as an alternative to structural shoreline stabilization and protection measures where feasible.
2. All shoreline restoration and ecological enhancement projects should protect the integrity of adjacent natural resources including aquatic habitats and water quality.
3. Where possible, shoreline restoration should use maintenance-free or low-maintenance designs.
4. The City should pursue the recommendations in the shoreline restoration plan prepared as part of this SMP update. The City should give priority to projects consistent with this plan.
5. Shoreline restoration and enhancement should not extend waterward more than necessary to achieve the intended results.

3.1 Comprehensive Plan

The Land Use Element of the City’s Comprehensive Plan list several goals and policies related to sensitive lands, including streams and wetlands, as follows:

Goal SL.1 The City shall protect environmentally sensitive lands.

Policy SL 1.1 All development activities shall be located, designed, constructed, and managed to minimize disturbance of and minimize adverse impacts to fish and wildlife resources, including spawning, nesting, rearing and habitat areas, and migratory routes.

Policy SL 1.2 The City shall prohibit the unnecessary disturbance of natural vegetation and wooded areas in new development, in accordance with the critical areas ordinance.

Policy SL 1.3 Where there is a high probability of erosion, grading shall be kept to a minimum and disturbed vegetation shall be restored as soon as feasible. In all cases, appropriate measures to control erosion and sedimentation shall be required.

Policy SL 1.4 The City shall seek to retain as open space, wetlands, river and stream banks, ravines, and any other areas that provide essential habitat for sensitive and locally important plant or wildlife species.

Policy SL 1.5 The City shall protect wetlands to enable them to fulfill their natural functions as recipients of floodwaters and as habitat for wildlife through the critical areas ordinance.

Policy SL 1.6 The City shall consider the impacts of new development on water quality as part of its review process and require any appropriate mitigating measures. Impacts on fish resources shall be a priority concern in such reviews.

Policy SL 1.7 The City shall protect its domestic water supply from potential contamination hazards through the adoption and implementation of wellhead protection and related land use regulations.

Policy SL 1.8 Best available science for the protection of threatened and endangered species and their habitats will be used in review of updates to the City's critical areas regulations.

3.2 Pierce County Shoreline Restoration Report

The Pierce County SMP update includes five goals in its restoration report component (ESA Adolphson 2009). These goals are intended to fulfill the County-wide restoration vision:

"The County will strive to restore, protect and enhance the shoreline resources and ecological processes that contribute to those resources through a combination of public actions and voluntary private actions. Restoration efforts, combined with protection of existing shoreline resources, will be targeted to create a net improvement in the shoreline ecosystem over time so as to benefit native fish and wildlife, and maintain public amenities for the people of Pierce County, Washington."

The Pierce County restoration goals are as follows:

- (1) To improve shoreline processes, functions, and values over time through regulatory and voluntary and incentive-based public and private programs and actions that are consistent with the SMP and other agency/locally adopted restoration plans.

- (2) To increase the availability, viability and sustainability of shoreline habitats for salmon, shellfish, forage fish, shorebirds and marine seabirds, and other species; improve habitat quality for sensitive and/or locally important species; and support the biological recovery goals for federally protected species.
- (3) To integrate restoration efforts with capital projects and other resource management efforts including, but not limited to, shellfish closure response plans and water cleanup plans.
- (4) To encourage cooperative restoration actions involving local, state, and federal public agencies, tribes, non-government organizations, and private landowners.
- (5) To participate in the Puget Sound Partnership and commit energy and resources to implementation of the Puget Sound Action Agenda.

4.0 ONGOING CITY PLANS AND PROGRAMS

The City of Milton implements elements of the Growth Management Act through the adoption of the Comprehensive Plan and the Municipal Code, which includes Critical Areas Regulations that apply outside of shoreline jurisdiction. The City also implements stormwater regulations, and flood hazard regulations.

4.1 Comprehensive Plan

The City completed a partial update of its Comprehensive Plan in 2006. As part of this update, the City began to address the creation of a Hylebos Creek Environmental Conservation District. Specifically, the City is working with the Washington State Department of Transportation (WSDOT) and the Friends of Hylebos (now merged with Earth Corps) to preserve areas around the creek and intends to include the Conservation District plans in the updated Comprehensive Plan in order to obtain grants and other support from WSDOT.

4.2 Critical Areas Regulations

The City of Milton critical areas regulations are contained in the Milton Municipal Code Chapter 18.16. The regulations are based on best available science and provide protection for wetlands, critical aquifer recharge areas, geologically hazardous areas, and fish and wildlife conservation areas (including lakes, ponds and streams), and frequently flooded areas in the City. Some of the basic components of the critical areas regulations are a four-tiered watercourse typing system with standard riparian buffers ranging from 65 to 165 feet, and a four-tiered wetland rating system with standard buffers ranging from 40 to 300 feet, based on the wetland's score using Ecology's rating

system and the proposed land use adjacent to the wetland. Management of the City's critical areas using these regulations should help insure that ecological functions and values are not degraded, and impacts to critical areas are mitigated. These critical areas regulations are one important tool that will help the City meet its restoration goals.

4.3 City of Milton NPDES Phase II Stormwater Management Program

The Phase II NPDES Stormwater Management Program includes ordinances and programs in fulfillment of local, State and federal stormwater requirements, as well as identifying water quality and quantity problems that may impact the environment and making recommendations for improvements. Adoption of the 2005 Ecology Stormwater Management Manual for Western Washington is required by the NPDES Phase II permit. The plan objectives include mitigating for impacts of previous and current activities.

Implementation of the stormwater manual and effective on-site treatment of stormwater runoff before it enters the City's surface waters is one of the more important factors for the City of Milton and particularly Surprise Lake. As part of the City's NPDES permit, stormwater inspections have been conducted for business development or redevelopment after 2005 in the Surprise Lake and Hylebos Creek watersheds. The City also inspected the majority of catch basins in the Surprise Lake watershed and cleaned sediment from them where needed.

A water quality monitoring program was recently initiated in Surprise Lake, partially in response to NPDES permit considerations, although monitoring is not expressly required. More stringent low impact development (LID) requirements will be part of the City's new NPDES permit, expected in 2012. These will likely be implemented over the span of the permit and may include new monitoring requirements. Areas under consideration specifically for stormwater treatment upgrades are likely to include shopping centers and apartment complexes, and stormwater outfalls may be addressed under new requirements as well.

5.0 PARTNERSHIPS

Federal, state, regional, and local agencies and organizations are actively involved in shoreline restoration, conservation, and protection in and around the City of Milton. These partners and their local roles in shoreline protection and/or restoration are identified below and generally organized in order by the scope of the organization, from the larger state and watershed scale to the City-scale in the Milton area.

5.1 Washington State Conservation Commission

The completion of the 1999 Salmonid Habitat Limiting Factors Report for the Puyallup River Watershed Area (WRIA) 10 identifies areas in the Puyallup watershed in need of protection, as well as data gaps. Milton shorelines are not specifically addressed.

5.2 Washington State Department of Ecology

The Puyallup-White Watershed Assessment Summary was completed by Ecology in 1995. This document describes existing data on water rights, stream flows, precipitation, geology, hydrology, water quality, fisheries resources, and land use patterns.

WRIA 10 is currently not working under the Watershed Planning Act (Ecology is the lead agency for this legislation).

5.3 Shared Strategy for Puget Sound

Shared Strategy for Puget Sound (SSPS) is a collaborate effort supported by State and federal agencies, local governments and non-government organizations, and legislators, aimed at encouraging recovery plans to protect and restore salmon runs in Puget Sound. The Puyallup/White River Watershed Profile of the Puget Sound Salmon Recovery Plan (SSPS 2007) identifies as limiting factors in salmon recovery access, sedimentation, lack of nearshore habitat, point and non-point source pollution, degraded and lacking riparian conditions, and lost floodplain processes. The Plan includes a number of recommendations for salmon recovery actions on Hylebos Creek. Recommended actions are to address habitat diversity and flow conditions.

5.4 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. Some of the Partnership's key tasks are as follows:

- Develop a set of recommendations for the Governor, the Legislature and Congress to preserve the health of Puget Sound by 2020 and ensure that marine and freshwaters support healthy populations of native species as well as water quality and quantity to support both human needs and ecosystem functions.
- Engage citizens, watershed groups, local governments, tribes, state and federal agencies, businesses and the environmental community in the development of recommendations.

- Review current and potential funding sources for protection and restoration of the ecosystem and, where possible, make recommendations for the priority of expenditures to achieve the desired 2020 outcomes.

The Partnership through the 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. This includes integrating the work of the Puget Sound Nearshore Restoration Project to increase focus on completing work necessary to request Puget Sound restoration funds under the Water Resources Development Act slated for 2012.

5.5 Pierce County

5.5.1 Pierce County Public Works and Utilities: Surface Water Management Division

The Pierce County Public Works and Utilities Department's Surface Water Management Division completed the White River Basin Plan Characterization Report in 2007. The document includes an analysis of basin conditions, including impervious surface, land use, water quality, habitat, floodplain, and stream characteristics. The County intends to present recommendations for solutions to identified problems regarding water quality, habitat, and floodplains in the next phase of study.

5.5.2 Pierce County Parks and Recreation

The Pierce County Park, Recreation and Open Space Plan was completed in 2008 and updated in 2009 (Pierce County 2009). One of the core values put forth in the plan is the conservation of natural and open spaces, wildlife habitat, shoreline environments, and ecological resources. Goals of the plan include providing parks and open spaces that conserve and enhance environmental features, link open space and significant environmental features, and incorporate natural areas to protect and conserve threatened species, habitat, and migration corridors.

5.5.3 Pierce County Lead Entity

Pierce County serves as the Lead Entity for the Puyallup/White watershed. The lead entity is charged with gathering information so that the "Citizen's Advisory Committee" (CAC) of stakeholders can rank projects for funding consideration by the Salmon Recovery Funding Board (SRFB). The CAC's mission is "to support the recovery of self-sustaining, harvestable salmon populations in Puget Sound by restoring and protecting the habitat in WRIAs 10 and 12."

The Salmon Habitat Protection and Restoration Strategy for WRIAs 10 and 12 was completed in March 2008 (Pierce County 2008). The goal of the document is "to provide guidance to the CAC and TAG [Technical Advisory Group], the SRF Board, and Project Sponsors to identify and prioritize salmon habitat recovery projects in WRIAs 10 and

12.” No projects within Milton shoreline jurisdiction are identified in the strategy, although the lower Hylebos Creek reaches are mentioned in the discussion of Chinook salmon recovery. The lack of projects presently within Milton shoreline jurisdiction does not preclude future project recommendations within the City.

5.6 Pierce Conservation District and Stream Team

The Conservation District’s mission is “To protect the natural resources and sustainable agriculture of Pierce County, by empowering local individuals and communities.” To this end, the District provides guidance to Pierce County landowners on practices that reduce non-point pollution; in some cases, the Conservation District provides funding for landowners to assist them in implementing best management practices. The District’s 5-Year Plan (2010 to 2015) summarizes the agency’s priorities: to enhance and protect soil water, biodiversity, salmon, shellfish, and native plant resources; to assist landowners in protecting water quality, improving habitat, and conserving natural resources, while sustaining the agricultural community; and to involve and educate the local community through volunteer projects that improve stream quality in the County for the benefit of fish, wildlife and people.

The Stream Team began as a one-year Conservation District project and continues to work county-wide with volunteers to complete habitat and water quality improvement projects. They have partnered with Friends of Hylebos Creek (now merged with Earth Corps) for restoration within the City of Milton (see Section 5.9). The City hopes to continue this partnership with a storm drain marker program.

5.7 South Puget Sound Salmon Enhancement Group (SPSSEG)

This 501(c)(3) organization’s mission is to work in cooperation with other groups to locate funding and plan, implement, and monitor fish and habitat enhancement and restoration projects, focusing on salmon and aquatic habitats. The SPSSEG takes an ecosystem approach and utilizes volunteers and public education in the region, which includes the entirety of WRIA 10.

5.8 Puyallup Tribe

The Tribe’s Natural/Environmental Resources Program’s mission is:

“To protect, enhance, manage and restore the Natural Resources of the Puyallup Tribe of Indians. Key department entities include Water Quality, Air Quality, Wildlife, Fisheries, GIS and Environmental. This department continues to build relationships and establishes cooperation with local, state and federal jurisdictions to protect human health and the environment of Tribal members.”

Goals of the Tribe include addressing habitat mitigation associated with PSE/CWA water right issues; continuing water quality sampling, monitoring, and analysis; and

continuing watershed analysis for habitat enhancement and restoration opportunities. Past and current projects address habitat at the mouth of Hylebos Creek but not presently within the Milton shoreline.

5.9 Friends of the Hylebos (Earth Corps)

The Friends of the Hylebos has officially merged with Earth Corps. This group works with local communities, protecting and restoring streams and other natural areas in the Hylebos watershed. They continue to partner with the City of Milton for Hylebos Creek restoration and culvert replacement projects within the City and surrounding jurisdiction.

5.10 National Fish and Wildlife Foundation (NFWF) Community Salmon Fund

The NFWF and Pierce County formed the Pierce County Community Salmon Fund in 2002 as a funding program for restoration projects that involved landowners and raise local support for salmon recovery. The goals of the Fund are:

- To fund salmon protection and restoration projects that have a substantial benefit to the watershed and that are consistent with Pierce County's Ecosystem and Diagnosis Treatment (EDT).
- To enlist landowners and community groups in project implementation and monitoring.
- To foster creativity and leadership in the community to address conservation needs.
- To focus on community members and groups that can be of particular help in salmon recovery.

6.0 POTENTIAL PROJECTS

Consistent with Ecology's definition of restoration (WAC 173-26), the term is used in the following sections to refer to any of a number of actions and strategies to create a new ecological resource, restore a converted or highly degraded resource, enhance an existing degraded resource, or protect an existing high quality resource. It does not include projects intended to reestablish historic resources.

Possible projects for the two assessment units are discussed separated below, as they largely focus on different aspects of restoration.

6.1 Surprise Lake

Surprise Lake drains to Surprise Lake Creek and ultimately to Hylebos Creek, a salmon-bearing stream. However, due to fish passage barriers downstream, salmon are not able to reach Surprise Lake. The lake is subject to the ubiquitous impacts of urbanization on watershed-level processes. These common sources of aquatic area impacts include stormwater runoff, deforestation, construction and other development, and direct human actions. Thus, restoration opportunities on and around Surprise Lake focus generally on water quality and the potential benefits to salmon downstream in Hylebos Creek, with additional potential for terrestrial habitat improvements.

General restoration opportunities for the Surprise Lake assessment unit are:

- Improve stormwater treatment facilities both within and outside of shoreline jurisdiction where adjoining surface waters are directly connected to Surprise Lake.
- Removal of Eurasian milfoil and other invasive aquatic plants.
- Nearshore vegetation enhancement.
- Remove non-native invasive terrestrial vegetation.
- Shoreline enhancement with native trees and shrubs.
- Shared overwater structures rather than individual structures.
- Shoreline armoring removal or modification.
- Overwater cover and in-water structure reduction and removal.
- Impervious surface reduction.

The City hosted a series of natural yard care workshops in recent years, in partnership with the Tacoma-Pierce County Health Department. A potential similar project would be to develop such a program on a somewhat broader scale, for contractors and other developers. This could include and affect landowners and private land in both the Surprise Lake shoreline jurisdiction and the greater watershed.

As the shoreline property surrounding Surprise Lake is entirely in private ownership, implementation of restoration opportunities within the jurisdiction will be entirely voluntary. Other opportunities outside of shoreline jurisdiction have greater potential for governmental and organizational support.

A 2003 shoreline characterization (Adolfson Associates, Inc. 2003) identified two restoration projects in the lake that still apply to present day conditions. They are listed in the characterization report as:

1. Protect existing wetland and aquatic bed vegetation, and
2. Explore opportunities to work with property owners to retain and/or plant native shoreline vegetation as filter strips to protect lake water quality.

Water quality issues in the lake can be addressed through restoration and other actions both in and outside of the shoreline jurisdiction. Directly along the shoreline, runoff from lawns and residential development can be treated using vegetated filter strips, as recommended above in Item 2, raising water quality function of the shoreline buffer. In addition, voluntary reduction in the use of fertilizers and pesticides by landowners on the lake would contribute to better water quality. Specific actions that can be voluntarily implemented within shoreline jurisdiction are:

- Planting native species along shorelines in residential yards.
- Reducing lawn fertilizers and pesticides in the care and treatment of residential landscapes.
- Reducing construction of residential docks and piers through sharing these structures with neighboring landowners.
- Softening or removing shoreline armoring.

In the areas of the sub-basin surrounding the lake and lakeside residences, water quality function can be addressed in a number of ways. While some of these are presented in Section 7 as strategies for restoration, specific recommended actions include:

- Improving stormwater treatment facilities for existing facilities in the sub-basin.
- Implementing stormwater treatment and controls with new road construction or road projects in the sub-basin.
- Improving treatment when improving or remodeling existing structures in the sub-basin.
- Monitoring water quality in stormwater runoff during construction and other development project implementation.

A storm drain marker program for the Surprise Lake watershed is supported by the City. The City has proposed moving forward with this project as part of their partnership with the Stream Team.

6.2 Hylebos Creek

Based on ecological analyses of Hylebos Creek within the Milton shoreline jurisdiction, general restoration actions that would benefit the creek by returning the creek bed to a more natural morphology include:

- Enhancing habitat with large woody debris and promoting large woody debris recruitment.
- Promoting pool, riffle and gravel bar development.
- Enhancing hydrologic condition.
- Removing non-native and invasive vegetation.
- Improving water quality.

- Restoring degraded wetlands.

The first three general restoration actions listed above are focused on restoring the creek to a more natural flow condition (increased channel sinuosity, size, and bank stability), by promoting habitat forming processes using wood placement and recruitment.

As with Surprise Lake, ownership of the creek's shoreline is private and implementation of restoration actions would be largely voluntary or would require that the City acquire ownership of restoration project areas. However, a number of agencies and groups have implemented projects on the creek and plan to continue to do so (see Section 5.0).

The 2003 characterization report (Adolfson Associates, Inc. 2003) identifies a specific potential restoration area at the confluence of West and East Hylebos Creeks for protection and enhancement. The site was also proposed for acquisition in the City's 1995 Comprehensive Plan. The area is primarily reed canarygrass-dominated wetland and has the potential to provide valuable flood storage, as well as perform water quality and habitat functions if restored.

Projects to restore the lower Hylebos in areas where it has been channelized are highly recommended because they have the potential to improve many ecological functions. Revegetation of the channel where the riparian zone is presently developed or otherwise unnatural should be prioritized and should include the enhancement and/or expansion of native plants along the stream, including the addition of trees along the channel to promote future large woody debris recruitment. Riparian enhancement and restoration projects probably provide the widest range of potential ecological functional improvements. The denser physical barrier provided by plants serves to attenuate storm flows, provide shade, decrease sedimentation, remove excess nutrients and pollutants, and slow riverbank erosion. The overall increase in native vegetation provides greater availability of terrestrial habitat and higher potential for large woody debris recruitment. Higher plant species and structural diversity increases food production and nest/travel/rest site availability for different species. These projects may be promoted wherever riparian habitat is lacking.

The potential for a natural yard care program for contractors and landowners, as mentioned in Section 6.1 for Surprise Lake, is also a possibility for the Hylebos Creek watershed.

Restoration of a migrating channel where it has been confined and straightened is another potential project with the capacity for high return of ecological function. This would improve recruitment of organic material and development of habitat features such as riverbank gravels. The removal of bank hardening is included with this action, followed by the encouragement or active restoration of a natural, meandering stream channel

Restoring wetlands and floodplains along the creek will serve to augment water storage and protect downstream properties, as well as improving other typical wetland functions, including those that address water quality and wildlife habitat.

7.0 STRATEGIES TO ACHIEVE LOCAL RESTORATION GOALS

This section discusses programmatic measures for Milton designed to foster shoreline restoration and achieve a net improvement in shoreline ecological processes, functions, and habitats. With projected budget and staff limitations, the City of Milton does not anticipate leading most restoration projects or programs. However, the City's SMP represents an important vehicle for facilitating and encouraging restoration projects and programs that could be led by private and/or non-profit entities. The discussion of restoration mechanisms and strategies below highlights programmatic measures that the City may potentially implement as part of the proposed SMP, as well as parallel activities that would be led by other governmental and non-governmental organizations.

7.1 Milton Public Works Department NPDES Phase II

The City could implement LID and stormwater regulations and recommendations proposed in the 2010 NPDES Phase II Annual Report. These include stormwater improvement and monitoring programs in the Surprise Lake watershed, as well as avenues to encouraging LID techniques and measures for use in private development.

7.2 Capital Improvement Projects and Transportation Improvement Plans

The City could develop and incorporate a shoreline restoration goal for capital and transportation improvements. Stormwater discharge to Surprise Lake is a potential projects candidate the for restoration component. Culvert work in the Hylebos Creek area could also be addressed as a potential restoration opportunity.

7.3 Development Opportunities/Incentives

New development opportunities are limited in Milton's shoreline jurisdiction. If, however, development is proposed in the future, the City should consider looking for opportunities to conduct restoration in addition 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 allow for "banking" and off-site, in-lieu opportunities.

Through the SMP, the City may provide development incentives for restoration, including the waiving of some or all of the development application fees, infrastructure improvement fees, or stormwater fees. This may serve to encourage innovation in development design to include more access and preservation.

7.5 Tax Relief/Fee System

A tax relief/fee system to directly fund shoreline restoration measures may be investigated in the future. One possibility is to have the City work with the County to craft a preferential tax incentive through the Open Space-Public Benefit Rating System-Tax Program administered by the County under the Open Space Taxation Act (RCW 84.34) to encourage private landowners to preserve natural shore-zone features for "open space" tax relief. Ecology has published a technical guidance document for local governments who wish to use this tool to improve landowner stewardship of natural resources. More information about this program can be found at <http://www.ecy.wa.gov/biblio/99108.html>. 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 that 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.

7.6 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 may establish an account that may serve as a source of local match monies for non-profit organizations implementing restoration of the City's shorelines. This fund may be administered by the City shoreline administrator and be supported by a levy on new shoreline development proportional to the size or cost of the new development project. Monies drawn from the fund would be used as a local match for restoration grant funds, such as the SRFB, Aquatic Lands Enhancement Account (ALEA), or another source.

7.8 Resource Directory

Development of a resource list would be helpful in aiding both property owners and City departments who want to be involved in restoration. For example, landowners and/or the City might be directed toward SRFB. 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.

7.9 Volunteer Coordination

The City may emphasize and accomplish restoration projects by using volunteers from within the community. The City can also coordinate with the groups listed in Section 5.0, many of which already have volunteer programs in place. Voluntary efforts by landowners in shoreline jurisdiction should be pursued to address the use of vegetated buffers for water quality control, shoreline vegetation enhancement, pollutant reduction, and other functional issues in Hylebos Creek and Surprise Lake.

7.10 Regional Coordination

The City should look for opportunities to coordinate restoration efforts with Pierce County and the Pierce Conservation District and Stream Team for involvement in regional restoration planning and implementation. Coordination with other entities outside of the City may also promote conservation efforts on Hylebos Creek, and the creek flows through both King and Peirce Counties and the Cities of Federal Way, Fife, and Tacoma, as well as two drainage districts 21 and 23).

8.0 PROPOSED IMPLEMENTATION TARGETS AND MONITORING METHODS

8.1 Project Evaluation

When a restoration project is proposed for implementation by the City, other agency, or by a private party, the project should be evaluated to ensure that the project's objectives are consistent with those of this Restoration Plan of the SMP and, if applicable, that the project warrants implementation above other candidate projects. (It is recognized that, due to funding sources or other constraints, the range of any individual project may be narrow.) It is also expected that the list of potential projects may change over time, that new projects will be identified and existing opportunities will become less relevant as restoration occurs and as other environmental conditions, or our knowledge of them, change.

When evaluating potential projects, priority should be given to projects most meeting the following criteria:

- 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 has a high probability of success.
- 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.

The City should consider developing a project “score card” as a tool to evaluate projects consistent with these criteria.

8.2 Monitoring and Adaptive Management

In addition to project monitoring required for individual restoration and mitigation projects, the City should conduct system-wide monitoring of shoreline conditions and development activity, to the degree practical, recognizing that individual project monitoring does not provide an assessment of overall shoreline ecological health. 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 those listed below:
 - a. New shoreline development
 - b. Shoreline variances and the nature of the variance
 - c. Compliance issues
 - d. New impervious surface areas
 - e. Stormwater treatment facility construction/improvement
 - f. Vegetation retention/loss
 - g. Bulkheads/armoring

The City may require project proponents to monitor as part of project mitigation, which may be incorporated into this process. Regardless, as development and restoration activities occur in the shoreline area, the City should seek to monitor shoreline conditions to determine whether both project specific and SMP overall goals are being achieved.

2. Re-review status of environmental processes and functions at the time of periodic SMP updates to, at a minimum, validate the effectiveness of the SMP. Re-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.

Under the Shoreline Management Act, the SMP is required to result in no net loss of shoreline ecological functions. If this standard is found to not be met at the time of review, the City will be required to take corrective actions. The goal for restoration is to achieve a net improvement. The cumulative effect of restoration over time between reviews should be evaluated along with an assessment of impacts of development that is not fully mitigated to determine effectiveness at achieving a net improvement to shoreline ecological functions.

Evaluation of shoreline conditions, permit activity, policy, and regulatory effectiveness should occur at varying levels of detail consistent with the Comprehensive Plan update cycle. A complete reassessment of conditions, policies and regulations should be considered every seven years. To conduct a valid reassessment of the shoreline conditions every seven years, it is necessary to monitor, record and maintain key environmental metrics to allow a comparison with baseline conditions. As monitoring occurs, the City should reassess environmental conditions and restoration objectives. Those ecological processes and functions that are found to be worsening may need to become elevated in priority to prevent loss of critical resources. Alternatively, successful restoration may reduce the importance of some restoration objectives in the future.

8.3 Reporting

The restoration opportunities presented in this document included are based upon a detailed inventory and analysis of shoreline conditions by many sources. Nonetheless, exhaustive scientific information about shoreline conditions and restoration options is cost prohibitive at this stage. Additionally, restoration is at times experimental. Monitoring must be an aspect of all restoration projects. Information from monitoring studies will help demonstrate what restoration is most successful. Generally, conservation of existing natural areas is the least likely to result in failure. Alternatively, enhancement (as opposed to complete restoration of functions), has the highest degree of uncertainty.

This Restoration Plan does not provide a comprehensive scientific index of restoration opportunities that allows the City to objectively compare opportunities against each other. If funding was available, restoration opportunities could be ranked by which opportunities are expected to have the highest rates of success, which address the most pressing needs, and other factors. Funding could also support a long-term monitoring program that evaluates restoration over the life of the SMP (as opposed to independent monitoring for each project). However, the following table (Table 5) outlines a possible schedule and funding sources for implementation of a variety of efforts that could improve shoreline ecological function, and are described in previous sections of this report.

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

Restoration Project/Program	Schedule	Funding Source or Commitment
Washington State Conservation Commission	Ongoing	The City will refer to the 1998 Salmonid Habitat Limiting Factors Report for guidance regarding habitat limiting factors and data gaps as restoration projects are considered.
Washington Department of Ecology	Ongoing	The Puyallup-White Watershed Assessment was completed in 1995. The City is not currently working under the Watershed Planning Act.
Shared Strategy for Puget Sound	Ongoing	Projects addressing ecological needs in the Hylebos Creek will be supported as practicable by the City.
Pierce Conservation District/Stream Team	Ongoing	The City will pursue partnership opportunities as time and budget permit.
Milton Comprehensive Plan	Partial revision in 2006	The City makes a substantial commitment of staff time in the course of project and program reviews to determine consistency and compliance with the Comprehensive Plan.
Milton Critical Areas Regulations	Revised in 2004	The City makes a substantial commitment of staff time in the course of project and program reviews to determine consistency and compliance with their Critical Areas Regulations.
Milton Phase II NPDES Stormwater Management Program	Adopted in 2005	The SWMP commits the City to education and outreach, public involvement, detection and enforcement, stormwater control, and pollution prevention. Future updates will emphasize LID and stormwater treatment and monitoring.

City planning staff is encouraged to track all land use and development activity, including exemptions, within shoreline jurisdiction, and may incorporate actions and programs of the other departments as well. A report may 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 stream bank stabilized through plantings, or linear feet of shoreline armoring removed. The report would also outline implementation of various programs and restoration actions (by the City or other groups) that relate to watershed health.

The staff report may be assembled to coincide with Comprehensive Plan updates and may be used, in light of the goals and objectives of the Shoreline Master Program, to determine whether implementation of the SMP is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the Inventory and Analysis Report. In the long term, the City should be able to demonstrate a net improvement in the City of Milton's shoreline environment.

9.0 REFERENCES

- Adolfson Associates, Inc. 2003. City of Milton Shoreline Characterization. Phase 1 Study. Prepared for the City of Milton, WA.
- Shared Strategy for Puget Sound (SSPS). 2007. Puget Sound Salmon Recovery Plan. Submitted by Shared Strategy Development Committee and adopted by National Marine Fisheries Service on January 19, 2007.
- Pierce County. 2008. Salmon Habitat Protection and Restoration Strategy, WRIA 10: Puyallup Watershed, WRIA 12: Chambers/Clover Creek Watershed. Pierce County (Lead Entity) guidance document, March 2008. 52pp.
- The Watershed Company and Makers. 2011. Final Shoreline Analysis Report for the City of Milton's Shorelines: Surprise Lake and Hylebos Creek. Prepared for the City of Milton Planning and Community Development Department. Milton, WA.