

# **RESTORATION PLAN**

## **CITY OF BLAINE SHORELINE MASTER PROGRAM UPDATE**

**DECEMBER 2014**

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### **Administration.**

The views expressed herein are those of the authors and do not necessarily reflect the views of NOAA or any of its subagencies.

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## **1.0 INTRODUCTION**

### **1.1 Statutory Requirements**

The Washington State Department of Ecology shoreline master program guidelines, WAC 173-26, direct local governments to review and update their shoreline master programs, including development of a “real and meaningful” strategy to address restoration of shorelines.

Restoration planning is required by WAC 173-26-186 and shall include goals, policies, and actions for restoration of impaired shoreline ecological functions. The goal of restoration planning is to implement elements that will serve to improve the overall condition of habitat and resources within the shoreline area. Restoration plans will vary based on:

- Size of jurisdiction
- Extent and conditions of shorelines
- Availability of grants, volunteer programs, and other tools
- The nature of ecological functions to be addressed

This restoration plan describes restoration opportunities identified through a detailed inventory and assessment of ecosystem processes and shoreline ecological functions in the City of Blaine. The results of this assessment are detailed and described in the City of Blaine Draft Shoreline Inventory and Analysis Report and the accompanying map folio.

### **1.2 No Net Loss and Restoration**

The concept of no net loss is a central idea for shoreline management and is rooted in the goals, policies, and governing principles of the Shoreline Management Act, RCW 90.58, and the Shoreline Management Guidelines. In general, the state’s policy goals for shorelines of the state include the “protection and restoration of ecological functions of shoreline natural resources.” No net loss of ecological function is accomplished through a combination of regulatory and non-regulatory approaches, including the shoreline regulations and this restoration plan. Restoration planning to achieve no net loss is dependent upon economic incentives, available funding sources, volunteer programs, and other programs.

Shoreline restoration planning is required to address the elements included in WAC 173-26-201(2)(f). These requirements provide the framework for restoring impacted, degraded, or missing ecological functions resulting from past development of the shoreline. The Department of Ecology master program guidelines state that:

“Restore,” “Restoration,” or “ecological restoration,” means 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.

The City of Blaine has a number of areas with the potential for restoration of shoreline functions and ecological processes. Restoration and enhancement opportunities are generally related to improvements in water quality, enhancement of degraded wetland areas, restoration of shoreline vegetation and removal of toxic materials, such as creosote pilings. These opportunities are detailed on a reach-by-reach basis in Section 4, below.

### **1.3 Restoration Plan Requirements**

Ecology's shoreline guidelines suggest that restoration plans consider and address all of the following (WAC 173-26-201(2)(f)):

- Identify degraded areas, impaired ecological functions, and sites with potential for restoration;
- Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions;
- Identify existing and ongoing projects and programs that are currently being implemented, or are reasonably assured of being implemented, which are designed to contribute to local restoration goals;
- Identify additional projects and programs needed to achieve local restoration goals and implementation strategies including identifying prospective funding sources for those projects and programs;
- Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals; and
- Provide 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.

These restoration requirements are intended to provide a framework to restore impaired, altered, or degraded shoreline functions. The restoration is not intended to mitigate past or future development impacts, but to improve overall ecological conditions over time.

## **2.0 DEGRADED AREAS AND IMPACTED FUNCTIONS**

Drayton Harbor, Semiahmoo Bay, and Dakota and California Creeks are all important resources for the City of Blaine and the surrounding area.<sup>1</sup> All of these water bodies have been negatively impacted by past development that has resulted in degraded water quality, loss of habitat and impaired ecological functions. Drayton Harbor is the most significant water body within the City of Blaine. It provides important habitat for marine birds and migratory waterfowl such as Black Brant. The Harbor contains substantial eelgrass beds and provides important habitat for surf smelt, sand lance and Pacific herring. Water quality problems have led to the closure of shellfish beds within Drayton Harbor. Shellfish closures have also affected Semiahmoo Bay. The source of these problems is thought to be primarily from high levels of fecal coliform, nitrates and other pollutants originating in the Dakota and California Creek drainages. Numerous opportunities exist for improving water quality within the watershed that will have a positive effect on Drayton Harbor.

Wetlands located adjacent to Drayton Harbor and throughout the two tributary drainages have been impacted by past residential, commercial and industrial development and by ongoing uses, such as agriculture. Opportunities exist for restoration of wetland vegetation and re-connection of off-channel wetlands. Shoreline vegetation along the shoreline has also been significantly impacted by past development. Important opportunities exist for restoring (and

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<sup>1</sup> California Creek and most of Dakota Creek are located outside the city limits, but are include here as important contributors to the water quality of Drayton Harbor and the potential impact they have on the shorelines within the city.

protecting) shoreline processes through the planting of native shoreline vegetation and the re-establishment of habitat corridors.

Semiahmoo Spit is an ever-present reminder of the importance of protecting natural processes of sediment transport. Limiting construction of new structures that block sediment transport as well as pursuing opportunities for removal of existing obstructions will support the restoration of these processes. Finally, opportunities exist for replacing old creosote pilings with non-toxic materials so that toxic inputs to the shoreline environment can be reduced while not losing important perches for water birds. For more detailed information regarding specific locations of degraded areas and impaired functions, refer to the City of Blaine Draft Shoreline Inventory and Analysis Report and accompanying data sheets.

### **3.0 RESTORATION GOALS & POLICIES**

Shoreline restoration is rooted in the idea that the widespread loss or alteration of rivers, streams, marine waters, estuaries, wetlands and adjacent uplands and alteration of their associated ecological functions have serious implications for our quality of life and for overall ecosystem sustainability. The overarching goals, priorities and objectives of restoration planning are to improve water quality through natural processes, restore degraded and lost habitat and corridors, and improve connectivity of shoreline environments. The following goals and policies are consistent with the Blaine Shoreline Management Master Program.

#### **3.1 Shoreline Master Program Purpose**

The purpose for which the Blaine Shoreline Master Program has been developed includes:

To manage the shorelines of the City to minimize, insofar as practical, damage to the shoreline area, while actively encouraging the restoration and enhancement of degraded shoreline functions and processes.

#### **3.2 Shoreline Restoration Goal and Objectives**

Goal: Support the restoration and enhancement of shoreline ecological functions within the City of Blaine through vegetation conservation and timely restoration and enhancement of impaired shoreline areas to achieve a net gain in shoreline ecological functions over time.

This goal is intended to support the following objectives:

- Protection of naturally occurring shoreline processes, including eroding banks, littoral drift and shoreform accretion.
- Protection and restoration of native vegetation and native vegetation corridors.
- Protection and restoration of estuaries, salt marshes, wetlands and riparian areas associated with Dakota and California Creeks.
- Management and treatment of stormwater and wastewater from new and existing uses.

#### **3.3 Shoreline Restoration Policies**

##### 3.3.1 General Policies

Policy: The goals and objectives of the City of Blaine Shoreline Restoration Plan should be supported and pursued to achieve a net gain in shoreline ecological functions.

Policy: Areas of existing native vegetation should be protected and allowed to mature to enhance shoreline functions and ecological processes.

Policy: Cooperative restoration programs between local, state, and federal agencies, tribes, non-profit organizations, and landowners should be encouraged to address shorelines with impaired ecological functions and/or processes.

Policy: Restoration actions should be prioritized to restore native vegetation in riparian and estuarine areas, improve water quality, and restore native vegetation and natural hydrologic functions of degraded areas.

Policy: Restoration and enhancement efforts should be targeted towards improving habitat requirements of sensitive, priority and/or locally important fish and wildlife species.

Policy: Shoreline ecological functions and processes and features should be restored and enhanced through voluntary and incentive-based public and private programs.

### 3.3.2 Shoreline Use

Policy: Preference should be given to water-dependent uses that are consistent with preservation of shoreline ecological functions and processes. Secondary preference should be given to water-related and water-enjoyment uses. Nonwater-oriented uses should be allowed only when substantial public benefit is provided with respect to the goals of the Act for public access and ecological restoration.

### 3.3.3 Aquatic Environment

Policy: New over-water structures shall only be allowed for water-dependent uses or public access or ecological restoration.

### 3.3.4 High Intensity Environment

Policy: New development shall be required to include environmental cleanup and restoration of the shoreline to comply with any relevant state and federal law.

### 3.3.5 Urban Conservancy Environment

Policy: Uses that preserve the natural character of the area or promote preservation of open space, critical areas, floodplain, or sensitive lands either directly or over the long term should be the primary allowed uses. Uses that result in restoration of ecological functions should be allowed if found compatible.

### 3.3.6 Shoreline Residential Environment

Policy: Development should be permitted only in those shoreline areas where adequate setbacks or buffers are possible to ensure no net loss of shoreline ecological functions, where there are adequate access, water, sewage disposal, and utilities systems and public services available, and where the environment can support the proposed use in a manner which protects or restores the ecological functions.

### 3.3.7 Critical Areas

Policy: The protection of existing ecological functions and ecosystem-wide processes should be encouraged and, wherever possible, restoration of degraded areas should be supported.

Policy: The protection and restoration of critical areas within shoreline jurisdiction should be encouraged through implementation of the full spectrum of planning and regulatory measures.

### 3.3.8 Critical Saltwater Habitat

Policy: Critical saltwater habitats, including nearshore habitats, should be protected and, where appropriate, restored to assure no net loss of ecological functions.

Policy: Degraded riparian and estuarine ecosystems should be restored wherever feasible, especially salt marsh habitats.

Policy: Sediment inflow and transport regimes should be protected and restored.

### 3.3.9 Rivers and Streams

Policy: River and stream corridors should be protected and restored where necessary to ensure no net loss of ecological functions within shoreline jurisdiction.

Policy: Degraded riverine shoreline areas should be restored wherever feasible.

### 3.3.10 Vegetation Conservation

Policy: The ecological functions and ecosystem-wide processes performed by vegetation along shorelines should be protected and restored.

Policy: Vegetation conservation and restoration policies and regulations should be implemented as necessary to assure no net loss of ecological functions, to avoid adverse impacts on soil hydrology, and to reduce the hazard of slope failures or accelerated erosion.

Policy: Riparian corridors and significant habitat should be protected and restored.

### 3.3.11 Aquaculture

Policy: Community restoration projects associated with aquaculture should be reviewed and permitted in a timely manner.

### 3.3.12 Commercial Development

Policy: New water-dependent commercial uses should provide public access, should be encouraged to provide on-site ecological restoration, where feasible, and should prohibit non-water uses unless they are part of a mixed-use project that includes water-oriented uses.

### 3.3.13 Industrial Development

Policy: Where feasible, industrial development should incorporate environmental cleanup and restoration of the shoreline area.

Policy: Restoration of impaired shoreline ecological functions and processes should be encouraged as part of industrial and port development.

### 3.3.14 Landfill and Excavation

Policy: Fills waterward of the ordinary high water mark should be allowed only when necessary to support: water-dependent uses, public access, ecological restoration, and other uses as outlined by WAC 173-26-231(3)(c). Unavoidable impacts should be mitigated to the maximum extent practicable.

Policy: Landfill should be permitted in limited instances to restore uplands where recent erosion has rapidly reduced upland area, to build beaches and protective berms for shore stabilization or recreation, to restore or enhance degraded shoreline ecological functions and processes, or to moderately elevate low uplands to make such uplands more suitable for purposes consistent with this Program.

### 3.3.15 Shoreline Protection

Policy: Wherever possible, construction of shoreline protection structures should provide for protection, preservation and restoration of ecological functions and ecosystem-wide processes.

### 3.3.16 Shoreline Stabilization

Policy: Failing, harmful, unnecessary, or ineffective structures should be removed and, where appropriate, replaced. Shoreline ecological functions and processes should be restored using non-structural methods or less harmful long-term stabilization measures.

## **4.0 RESTORATION OPPORTUNITIES**

The City of Blaine has a number of potential restoration opportunities as mentioned in the introduction of this restoration plan. The amount and timing of restoration will depend on the availability of funding and coordination between the City, other agencies and volunteers. The following are areas of degraded ecological function or areas providing opportunities for future restoration and enhancement.

**Note:** Priority restoration opportunities are designated by the word “*Priority*” included after the description. In instances where two or more “*Priority*” opportunities are identified they are considered to be of equal importance and urgency.

### **4.1 Reach 1**

Reach 1 is described as the marine shoreline on Semiahmoo Bay from the Canadian border south to the mouth of Cain Creek. Restoration and enhancement opportunities within Reach 1 include the following:

- Preserve and enhance terrestrial vegetation associated with Cain Creek which includes control of invasive species; (*Priority*)
- Control non-native plant species in this reach outside the Cain Creek watershed;
- Maintain the freshwater source to Cain Creek primarily through wetland enhancement and creation in the upstream watershed;
- Enhance stormwater quality in the watershed through stormwater retrofitting including cooperative efforts with WSDOT; and
- Remove obstructions to fish migration to Cain Creek.

### **4.2 Reach 2**

Reach 2 includes the marine shoreline on Semiahmoo Bay from Cain Creek to the west end of the Marine Drive peninsula. Restoration and enhancement opportunities within Reach 2 include the following:

- Remove asphalt and refuse rip-rap and where conditions allow establish a more natural intertidal environment including gravel and sand beaches that benefit wildlife; (*Priority*)
- Preserve and enhance terrestrial vegetation associated with Cain Creek;
- Control non-native plant species in this area, particularly the Japanese knotweed, and establish native plant species; (*Priority*)
- Maintain the freshwater source to Cain Creek;
- Remove obstructions to fish migration to Cain Creek;
- Enhance native vegetation in eastern portion of Marine Park to provide screening for critical bird habitat;

- Improve the existing tide pools or create new tide pools;
- Identify and designate certain shorelines, salt marsh and intertidal areas located northeast of Marine Park as habitat conservation areas and limit physical access to these areas; and
- Remove creosote pilings and replace the perches with environmentally safe materials.

#### **4.3 Reach 3**

Reach 3 includes the marine shoreline along Drayton Harbor from the tip of the Marine Drive spit back to the north-south shoreline adjacent to, but not including, the Burlington-Northern railroad right-of-way. Restoration and enhancement opportunities within Reach 3 include the following:

- Enhance the disturbed wetland located south of Marine Drive between the parking area and the railroad to provide marine bird habitat; (*Priority*) and
- Explore the possibility of daylighting Cain Creek to pass through the wetland area south of Marine Drive before discharging to Semiahmoo Bay north of Marine Drive.

#### **4.4 Reach 4**

Reach 4 includes the marine shoreline along Drayton Harbor south from the boat launch (and including the railroad right-of-way) to the point where Peace Portal Drive is located immediately landward of the Burlington-Northern railroad (near Cedar Street right-of-way). Restoration and enhancement opportunities within Reach 4 include the following:

- Preserve, enhance, and possibly expand the salt marsh habitat at the north end of the reach;
- Preserve and enhance the fresh water wetland in the same area; and
- Remove non-native vegetation from the shoreline. (*Priority*)

#### **4.5 Reach 5**

Reach 5 includes the marine shoreline along Drayton Harbor where the Burlington-Northern railroad right-of-way is located immediately adjacent to Peace Portal Drive (approximately from Cedar Street to north of Albert Street). No restoration or enhancement opportunities have been identified within Reach 5.

#### **4.6 Reach 6**

Reach 6 includes the marine shoreline along Drayton Harbor from the point where the railroad leaves the shoreline south to the mouth of Dakota Creek. Restoration and enhancement opportunities within Reach 6 include the following:

- Preserve the existing vegetation corridor in the center of the reach (Monfort Park), which includes prime eagle habitat; (*Priority*)
- Encourage property owners to restore the native plant community on the shoreline slopes through a cooperative effort with the City; (*Priority*)
- Preserve and enhance existing shoreline vegetation; and
- Remove existing bulkheads and replace, if necessary, with soft armoring techniques.

#### **4.7 Reach 7**

Reach 7 is defined as the shoreline of Dakota Creek from the mouth of the creek upstream to the city limits line (on the north bank) near Interstate-5. Most of the south bank is located in

unincorporated Whatcom County in the former Blaine urban growth area (UGA). Restoration and enhancement opportunities within Reach 7 include the following:

- Preserve the riparian corridor, the terrestrial vegetation and associated habitat;
- Enhance the riparian buffer with native trees and shrubs; and
- Work with Whatcom County to achieve water quality improvements in the upper watershed. (*Priority*)

#### 4.8 Reach 8

Reach 8 is defined as the shoreline of Dakota Creek from the mouth of the Blaine UGA. Restoration and enhancement opportunities within Reach 8 include the following:

Reach is now outside city limits and UGA.

- Preserve the riparian corridor, the terrestrial vegetation and associated habitat;
- Enhance the riparian buffer with native trees and shrubs;
- Increase the width of the riparian buffer in pasture areas; and
- Work with Whatcom County to achieve water quality improvements in the upper watershed.

#### 4.9 Reach 9

Reach 9 includes the marine shoreline along Drayton Harbor from the mouth of Dakota Creek to the mouth of California Creek. The entire reach is located within unincorporated Whatcom County within the Blaine UGA. Restoration and enhancement opportunities within Reach 9 include the following:

- Preserve forested habitat along the shoreline; (*Priority*)
- Limit bulkhead/jetty construction and, if required, encourage use of soft engineering technologies; and
- Encourage native plant landscaping for residential lots to increase wildlife function and decrease potential contaminants from lawn products in surface runoff.

#### 4.10 Reach 10

Reach 10 is defined as the shoreline of California Creek from the mouth of the Blaine UGA to the bridge at Blaine Road. The entire reach is located in unincorporated Whatcom County within the Blaine UGA. Restoration and enhancement opportunities within Reach 10 include the following:

Reach is now outside city limits and UGA.

- Preserve forested riparian habitat;
- Enhance shoreline areas with native plantings where lacking; and
- Work with Whatcom County to achieve water quality improvements in the upper watershed. (*Priority*)

#### 4.11 Reach 11

Reach 11 is defined as the shoreline of California Creek from the mouth of the Blaine UGA upstream to the eastern extent of the Blaine UGA. The entire reach is located in unincorporated Whatcom County within the Blaine UGA. Restoration and enhancement opportunities within Reach 11 include the following:

Reach is now outside city limits and UGA.

- Preserve forested riparian habitat;
- Enhance shoreline areas with native plantings where lacking;

- Work with Whatcom County to achieve water quality improvements in the upper watershed ; (*Priority*)
- Re-connect off-channel wetlands; and (*Priority*)
- Remove undetermined blockage to fish passage at Blaine Road.

#### 4.12 Reach 12

Reach 12 includes the marine shoreline along Drayton Creek west to the City limits. The entire reach is located within the Blaine UGA. Restoration and enhancement opportunities within Reach 12 include the following:

Reach is now outside city limits and UGA.

of California Whatcom County Reach 12 include the

- Preserve forested habitat along shoreline where it exists;
- Preserve and enhance wetlands and in larger contributing basin; (*Priority*)
- Limit bulkhead/jetty construction and, if required, encourage use of soft engineering technologies; and
- Encourage native plant landscaping for residential lots to increase wildlife function and decrease potential contaminants from lawn products in surface runoff.

#### 4.13 Reach 13

Reach 13 includes the marine shoreline along Drayton Harbor from the city limits line to the beginning of Semiahmoo Spit. Restoration and enhancement opportunities within Reach 13 include the following:

- Preserve forested habitat along shoreline where it exists; (*Priority*)
- Limit bulkhead/jetty construction and, if required, encourage use of soft engineering technologies;
- Encourage native plant landscaping for residential lots to increase wildlife function and decrease potential contaminants from lawn products in surface runoff; and
- Work with Drayton Harbor Shellfish Advisory Group to restore health of shellfish beds in Drayton Harbor.

#### 4.14 Reach 14

Reach 14 includes the marine shoreline along Drayton Harbor from the beginning of the neck of Semiahmoo Spit to the southwest edge of the Semiahmoo Marina. Restoration and enhancement opportunities within Reach 14 include the following:

- Maintain offshore eelgrass beds and surf smelt and sand lance spawning areas; (*Priority*)
- Provide visual screening along shoreline to reduce conflicts between wildlife usage and human activities; and
- Enhance open areas with native herbaceous and low shrub species targeting visual screening functions and wildlife habitat attributes.

#### 4.15 Reach 15

Reach 15 is identified as the marine shoreline along Drayton Harbor and Semiahmoo Bay from the southern edge of the Semiahmoo Marina to the northwestern extent of the Semiahmoo Resort. Restoration and enhancement opportunities within Reach 15 include the following:

- Redesign bulkhead features to improve habitat value;

- Replace creosote piles with non-toxic materials such as steel and concrete; (*Priority*) and
- Enhance upland immediately west of marina with native plantings to improve habitat for wildlife.

#### **4.16 Reach 16**

Reach 16 is identified as the marine shoreline along Semiahmoo Bay from the western extent of Semiahmoo Resort to the western edge of Semiahmoo Park (just east of the decommissioning wastewater treatment plant). Restoration and enhancement opportunities within Reach 16 include the following:

- Maintain offshore eelgrass beds and surf smelt and sand lance spawning areas;
- Provide visual screening along shoreline to reduce conflicts between wildlife usage and human activities;
- Enhance open areas with native herbaceous and low shrub species targeting visual screening functions and wildlife habitat attributes; and,
- Restore and enhance eroded shoreline sections to reduce potential for reactionary, emergency responses to infrastructure damage or threat and to enhance habitat. (*Priority*)

#### **4.17 Reach 17**

Reach 17 is defined as the marine shoreline along Semiahmoo Bay from just east of the wastewater treatment plan southwest to the existing City limits and continuing southwesterly to the southern extent of the Blaine UGA. Approximately one-third of this reach is located within the City and the remaining two-thirds is located in unincorporated Whatcom County. Restoration and enhancement opportunities within Reach 17 include the following:

- Preserve forested habitat along shoreline where it exists; (*Priority*)
- Limit bulkhead/jetty construction and, if required, encourage use of soft engineering technologies; and
- Encourage native plant landscaping for residential lots to increase wildlife function and decrease potential contaminants from lawn products in surface runoff.

#### **4.18 Overall Priorities**

Overall priority projects include Marine Park shoreline restoration, developing a program to assist homeowners to restore native vegetation communities on residential shoreline properties, developing a cooperative program with Whatcom County to protect and reduce contaminant sources in the Dakota Creek watershed, and continuing the effort to control invasive species and restore native plants communities on City-owned shoreline properties.

These are not presented in a prioritized order. All are considered high-priority efforts to be undertaken as funding and staff capacity allows.

## **5.0 RESTORATION PROGRAMS AND PARTNERS**

### **5.1 Restoration Programs**

#### **5.1.1 WRIA 1 Salmon Recovery Plan (SRP)**

The SRP outlines actions necessary to recover ESA-listed salmonid populations, with a particular focus on Chinook salmon. The draft SRP includes a Salmonid Habitat Restoration

Strategy that identifies and prioritizes specific projects to protect and restore habitats and the ecosystem processes essential to the recovery of threatened Chinook salmon and bull trout, along with other salmonids native to the Nooksack watershed. The restoration measures identified in the SRP have the potential to benefit the full range of shoreline processes and can therefore be expected to have a direct benefit on shoreline ecological functions throughout the County. The SRP addresses restoration within the Drayton Harbor watershed to a limited degree.

#### 5.1.2 WRIA 1 Watershed Management Plan (WMP)

The WRIA 1 planning process provides a framework for government and non-governmental organizations to plan for and address issues relating to water quantity, water quality, instream flow and fish habitat within Whatcom County. The result of this planning effort was the WEIA 1 Watershed Management Plan (WMP). The WMP is intended to be a living document that will be updated over time as projects and programs to address water quantity, quality, instream flows, and fish habitat are implemented. These projects are expected to have direct benefits on shoreline resources and contribute to meeting the no net loss goals of the Shoreline Management Act and the Blaine Shoreline Master Program.

#### 5.1.3 Conservation Resource Enhancement Program (CREP)

CREP is a joint partnership between the State of Washington and the USDA, and is administered by the Whatcom Conservation District and the Natural Resource Conservation Service. This conservation program provides incentives to restore and improve salmon and steelhead habitat on private land. This program is voluntary for landowners, and generally involves planting trees and shrubs for 10-15 years to stabilize stream and riverbanks.

#### 5.1.4 Puget Sound Nearshore Ecosystem Restoration Project (PSNERP)

The PSNERP is a large-scale effort whose goals are to identify significant ecosystem problems, evaluate potential solutions, and restore and preserve critical nearshore habitat. The project is a cooperative effort among government organizations, tribes, industries and environmental organizations to preserve and restore the health of the Sound's nearshore areas.

#### 5.1.5 Whatcom County Shoreline Restoration Plan

In conjunction with updating its shoreline management program, Whatcom County has developed a draft Restoration Plan. This plan identifies restoration projects within the City of Blaine and urban growth area, as well as in the upper watersheds of Dakota and California Creeks, that have the potential to restore and enhance the shoreline processes within the City.

## **5.2 Restoration Partners**

### 5.2.1 Lummi Nation

The Lummi Nation is active in most of the ongoing natural resource protection and management efforts in Whatcom County. These efforts encompass a wide range of issues related to salmon recovery, shellfish management, aquaculture, and water quality/quantity.

### 5.2.2 Nooksack Tribe

The Nooksack Tribe is also very active in natural resource protection and management, with a focus on fisheries and shellfish. The Nooksack Natural Resources Department (NNR) works to protect and recover the treaty resources of the Nooksack Tribe by assessing, preserving and restoring salmon habitat, and by managing fish and shellfish resources for the long term in an ecologically sound, sustainable manner.

### 5.2.3 Nooksack Salmon Enhancement Association (NSEA)

NSEA is one of the 14 regional salmon enhancement groups in the Washington Department of Fish and Wildlife Regional Fisheries Enhancement Group Program. NSEA works closely with local, state, and federal agencies and local tribes, including the Whatcom Conservation District, the Nooksack Recovery Team, WDFW, DNR, Ecology, USFWS, the Nooksack Tribe, and the Lummi Nation. NSEA works with habitat restoration and salmon enhancement through replanting native vegetation, restoring riparian zones, reducing livestock impacts on water quality, improving instream habitat, and stabilizing eroding banks.

### 5.2.4 Whatcom Conservation District (WCD)

Whatcom Conservation District works with landowners and farmers to manage natural resources in Whatcom County. WCD is involved in school programs such as 6<sup>th</sup> Grade Tour (of restoration sites) and Students for Salmon (in coordination with NSEA). These programs could be used to increase ecological awareness and involvement among school-aged children.

### 5.2.5 Puget Sound Partnership (PSP)

The Puget Sound Action Team (PSP) provides a variety of programs and funding opportunities for restoration and rehabilitation of waters of the Puget Sound. The City of Blaine or other agencies or groups may be eligible for the Public Involvement and Education (PIE) grant program administered through PSP. The PIE grants are used to improve water quality of the Puget Sound through public involvement in restoration and education and by providing opportunities to reduce impacts to and increase enjoyment of Puget Sound.

### 5.2.6 Washington Department of Ecology (Ecology)

Washington Department of Ecology has regulatory authority over waters of the state. Ecology is actively involved in watershed planning, as well as outreach and education efforts to improve water quality throughout Whatcom County. Ecology also administers the Coastal Zone Management (CZM) grant program that funds shoreline planning and improvement projects, such as the Blaine Shoreline Master Program Update and the Blaine Boardwalk.

### 5.2.7 Washington Department of Fish and Wildlife (WDFW)

The Washington Department of Fish and Wildlife is a state leader in providing technical support staff as well as funding for salmon recovery and habitat protection and restoration efforts. One of the mechanisms for this support is through the Priority Habitats and Species (PHS) program, which provides management guidelines pertaining to a wide variety of habitats and species throughout the state.

### 5.2.8 Washington State Department of Natural Resources (DNR)

The Washington State Department of Natural Resources manages forests, farms, commercial properties and underwater lands under state ownership within Whatcom County. Much of this land is dedicated to supporting public institutions like schools and universities. DNR's aquatic lands are managed to provide access to rivers, lakes, streams and Puget Sound. The DNR also works to serve the continuation of navigation and commerce.

### 5.2.9 Recreation and Conservation Office (RCO)

The RCO administers a wide range of grant programs that support development of recreational facilities, acquisition of open space and greenways, protection and enhancement of aquatic lands, and increased access to public resources.

#### 5.2.10 Marine Resources Committee (MRC)

The Whatcom County MRC, which is part of a network of seven such committees in the state, is charged with identifying and solving problems with local marine resources, such as intertidal and estuarine habitat, shellfish beds, and bottomfish.

#### 5.2.11 WSU Cooperative Extension

WSU Cooperative Extension, a non-degree program funded through Washington State University, offers a variety of hands-on public educational materials and programs that support environmental and natural resource management in the community. Courses are available to landowners in the following subject areas: forestry, riparian management, water, wildlife, and watershed and beach masters. WSU Cooperative Extension often works closely with other community organizations such as the Conservation District and Whatcom County in providing public educational services. The Cooperative Extension is also active in supporting agriculture and best management practices throughout Whatcom County.

#### 5.2.12 Whatcom County

Whatcom County has jurisdiction over a large area of land that impacts the quality of the shorelines within the City of Blaine. County land use regulations have recently been updated to provide increased protection of aquatic resources, and the County has also prepared a draft shoreline restoration plan that addresses the Drayton Harbor watershed. The County is also one of the lead agencies in the implementation of the WRIA 1 Salmon Recovery Plan and Watershed Management Plan.

#### 5.2.13 Port of Bellingham

The Port of Bellingham owns and operates the Blaine marina. The Port has been working with staff from the City of Blaine on completing an update to the Blaine Marina Master Plan. It is anticipated that this plan will support the City's restoration goals and objectives in the marina area.

#### 5.2.14 Drayton Harbor Shellfish Advisory Group

The Drayton Harbor Shellfish Advisory Group has been instrumental in bringing public awareness to the closure of important shellfish beds in the Drayton Harbor area. The City will continue to work with this group to improve the water quality of the harbor to allow future upgrades of shellfish harvest areas.

#### 5.2.15 Semiahmoo Resort Association (SRA)

The SRA is an important partner with the City with respect to the future development of the Semiahmoo area of Blaine, including Semiahmoo Spit and the Semiahmoo Marina.

## **6.0 IMPLEMENTATION AND MONITORING**

### **6.1 Timelines and Benchmarks**

The goals and objectives of this Restoration Plan are intended to be implemented over the course of the next twenty years, with some actions being accomplished in the short-term through adoption of the updated Blaine Shoreline Master Program and other actions being completed within 5, 10 or 20 years. The following section presents the groups of actions that are anticipated to be completed during the course of the various time horizons. These groupings include the restoration opportunities discussed previously in Section 4 and can be used as benchmarks for reviewing the success of the restoration strategies and evaluating the need for any changes.

### 6.1.1 Short-term Benchmark

- Protection of shoreline processes and existing shoreline vegetation through adoption of updated SMP policies and regulations
- Protection of vegetation associated with Cain Creek
- Maintain freshwater source of Cain Creek – ongoing through all time periods
- Protection of shoreline, saltmarsh and intertidal areas adjacent to Marine Park
- Preserve existing vegetation corridor in Reach 6 and Reach 7
- Limit new obstructions such as bulkheads and jetties
- Protect and maintain offshore eelgrass beds and surf smelt and sand lance spawning areas

### 6.1.2 Five-year Benchmark

- Control non-native species in the vicinity of Cain Creek
- Remove asphalt and refuse rip-rap and where conditions allow establish a more natural intertidal environment including gravel and sand beaches that benefit wildlife
- Control non-native species in vicinity of Marine Park, particularly the Japanese Knotweed
- Remove obstruction to fish passage to Cain Creek
- Enhance native vegetation in Marine Park – 50% complete
- Cain Creek vegetation enhancement in Reach 1 and 2
- Wetland enhancement south of Marine Drive in Reach 3
- Enhance existing shoreline vegetation in Reach 6 and Reach 7 – 25% complete
- Work with County on water quality improvements in upper watersheds
- Encourage native plant landscaping on residential lots within City
- Work with Shellfish Advisory Group to restore health of shellfish beds
- Enhance native vegetation in Reach 14 and Reach 16 to provide visual screening – 50% complete
- Enhance upland vegetation in Reach 15 west of marina to improve habitat for wildlife

### 6.1.3 Ten-year Benchmark

- Improve existing or create new tide pools at Marine Park
- Enhance native vegetation in Marine Park – 100% complete
- Enhance and possibly expand the saltmarsh at the north end of Reach 4
- Remove non-native vegetation from shoreline in Reach 4
- Enhance existing shoreline vegetation in Reach 6 and Reach 7 – 50% complete
- Remove existing bulkheads and replace with soft armoring technologies, if necessary – 50% complete
- Work with County on water quality improvements in upper watersheds
- Vegetation enhancement within existing City limits
- Preserve and enhance vegetation corridors in UGA upon annexation
- Limit new obstructions such as bulkheads and jetties in UGA upon annexation
- Re-connect off-channel wetlands within Reach 11
- Remove blockage to fish passage at Blaine Road
- Preserve and enhance wetlands in larger contributing basin affecting Drayton Harbor
- Enhance native vegetation in Reach 14 and Reach 16 to provide visual screening – 100% complete
- Replace creosote pilings adjacent to Reach 15 with non-toxic materials – 50% complete

#### 6.1.4 Twenty-year Benchmark

- Enhance existing shoreline vegetation in Reach 6 and Reach 7 – 100% complete
- Remove existing bulkheads and replace with soft armoring technologies, if necessary – 50% complete
- Work with County on water quality improvements in upper watersheds
- Increase width of riparian buffer in Reach 8
- Preserve and enhance vegetation corridors in UGA upon annexation
- Limit new obstructions such as bulkheads and jetties in UGA upon annexation
- Preserve and enhance wetlands in larger contributing basin affecting Drayton Harbor
- Replace creosote pilings adjacent to Reach 15 with non-toxic materials – 100% complete
- Redesign bulkhead features adjacent to Reach 15 to improve habitat value
- Vegetation enhancement within UGA

### **6.2 Current and Future Projects and Programs**

The City is currently involved in the following restorations efforts:

- Development of a shoreline restoration plan for Marine Park including invasive species control, terrestrial habitat/native vegetation enhancement, rip-rap modifications, and beach enhancement.
- Development and implementation of a shoreline interpretive signage program with educational elements including wildlife, habitat, maritime history, shoreline industry, and water quality.
- Invasive species control and native vegetation restoration at various City-owned properties. This incremental program is being developed and is currently being executed at the first site (Washington Avenue ROW/Dakota Creek Kayak Launch).

Future projects under consideration by City include:

- Marine Park shoreline restoration.
- Cain Creek invasive species control.
- Wharf District wetland restoration and enhancement.
- Semiahmoo Spit shoreline restoration and enhancement in areas where erosion is threatening infrastructure and may trigger emergency responses.

Programs which the City may develop to encourage and facilitate restoration include:

- Planning and design assistance for single-family property owners wishing to restore shoreline areas degraded by invasive species and ornamental plantings.
- An in-lieu wetlands mitigation program to facilitate enhancement and creation of wetlands in the Cain Creek watershed.

### **6.3 Monitoring and Adaptive Management**

Adaptive management is the process of continually reviewing and improving management policies and practices in response to results. As data are gathered and compared to prior results, the City will be able to better understand the success of completed restoration efforts and how environmental functions and processes are being impacted. As this understanding increases, the City will have the opportunity to adjust shoreline and restoration policies,

regulations and priorities to adapt to changes in conditions and new information. The City will need to take action based on the principles of adaptive management if the mandate of no net loss of shoreline ecological functions is not being met and if shoreline restoration goals and objectives are not being met satisfactorily.

The City should monitor development and shoreline processes through a variety of methods, including:

- Tracking information using permitting activities and GIS work to display new shoreline development, shoreline variances, compliance issues, new impervious surfaces, vegetation retention/loss, and bulkheads/armoring.
- Review and provide input to regional ongoing monitoring programs through the coordination with regional agencies to identify any major environmental changes that might occur.
- Re-review the status of environmental processes and functions at the time of periodic SMP updates to validate the effectiveness of the SMP, including what restoration activities actually occurred.

Policies, goals, regulations, and restoration efforts should be monitored and evaluated every five years. Through the collection and display of data, the City should be able to monitor and adapt to changing shoreline conditions to ensure that the goals of the shoreline program related to no net loss and restoration are being met.

#### 6.4 Potential Funding Sources

Local, state, and federal public agencies, along with other non-profit organizations offer a variety of funding and grant sources for restoration projects. The following table outlines a select few as examples of potential funding sources.

**Table 1 – Grant Funding Sources**

Grant Name	Allocating Entity	Grant Size	Contact
Coastal Zone Management Administration/ Implementation Awards	Washington State Department of Ecology	\$19,000 – 29,000	Bev Huether Phone: (360)407-7254 Email: bhue461@ecy.wa.gov
Nonpoint Source Implementation Grant (319) Program	Environmental Protection Agency, Washington State Department of Ecology	Varies	Aleciea Tilley Email: atill461@ecy.wa.gov
Community-Based Restoration Program	NOAA	\$1,000 to 500,000	Chris Doley Phone: (301) 713-0174 Email: chris.doley@noaa.gov
Cooperative Endangered Species Conservation Fund	USFWS	\$1,000 to 14,000	Dan Morgan Phone: (703) 358-2061 Email: Dan.Morgan@fws.gov
Habitat Conservation	USFWS	Varies	Sally Valdes

			Phone: (703) 358-2201 Email: sally.valdes@fws.gov
Aquatic Lands Enhancement Grants (ALEA)	RCO	Varies	Lorinda Anderson
PSAT Public Involvement and Education Fund	PSAT	Varies	<a href="http://www.psat.wa.gov/Programs/Education.htm">www.psat.wa.gov/Programs/Education.htm</a>

## 7.0 RESTORATION MANAGEMENT AND UNCERTAINTY

Volunteer efforts and regional coordination among governmental and non-governmental agencies are two components that are key to the success of restoration projects. Regulatory and non-regulatory incentives could also be utilized to encourage new projects to include some restoration as a condition of development. Management and maintenance are also integral to creating successful restoration projects. The availability of government funding to support restoration and ongoing maintenance efforts is also subject to change. Based on all of these factors, a degree of uncertainty exists related to how quickly and how successfully the City will be able to achieve its goals related to restoration of the City's shoreline areas. However, with a strong policy base, a clear commitment from City administration and a framework that includes adoptive management, there is strong likelihood of success.

## 8.0 REFERENCES

Port Townsend. City of, Shoreline Master Program. Port Townsend: 2006.

Puget Sound Action Team. PSAT Public Involvement and Education. Seattle:  
<http://www.psat.wa.gov/Programs/Education.htm>

Washington State Department of Ecology. Coastal Zone Management Administration/Implementation Awards.

NOAA. Community-Based Restoration Program

USFWS. Cooperative Endanger

National Research Council 1992