Shoreline Restoration Plan for Shorelines in the City of South Bend

The Watershed Company

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SHORELINE RESTORATION PLAN

for Shorelines in the City of South Bend

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SHORELINE RESTORATION PLAN

FOR SHORELINES IN THE CITY OF SOUTH BEND

1 INTRODUCTION

The Shoreline Restoration Plan provides an important **non-regulatory** component of the SMP to ensure that shoreline functions are maintained or improved despite incremental losses from shoreline development. These losses may occur in spite of SMP regulations and mitigation actions.

The Shoreline Restoration Plan draws on previous and current planning efforts to identify possible restoration projects and priorities; key partners in implementing shoreline restoration; and potential funding opportunities. The Shoreline Restoration Plan represents a long-term vision for **voluntary** restoration that will be implemented over time to result in ongoing improvement to shoreline ecological function within the City of South Bend.

The restoration opportunities identified in this plan are focused primarily on publicly owned open spaces and natural areas; however, some of the opportunities identified in this plan address private property. The city does not intend to require restoration on private property, nor to commit privately-owned land for restoration purposes without the willing and voluntary cooperation and participation of the affected landowners.

1.1 Purpose

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

Secondarily, the Shoreline Restoration Plan may enable the City of South Bend to ensure that the minimum requirement of no net loss of shoreline ecological function is achieved on a city-wide basis, regardless of any shortcomings of individual projects or activities. By law, activities that have adverse effects on the ecological functions of the shoreline must be mitigated (WAC 173-26-201(2)(e)). Proponents of such activities are individually required to mitigate such adverse effects to pre-activity, or baseline, conditions. However, some shoreline impacts that may be sufficiently minor on an individual level become significant when considered cumulatively. Unregulated activities, such as operation and maintenance of existing

developments, may also degrade baseline conditions. Finally, while the City of South Bend's SMP applies only to activities within the shoreline jurisdiction, upland or upstream activities beyond jurisdictional boundaries may have offsite impacts on shoreline functions. Without restoration and protection measures to offset them, these impacts can result in cumulative, incremental, and unavoidable degradation of the overall baseline condition. Accordingly, the Shoreline Restoration Plan serves as a guide for ecological restoration and protection activities implemented voluntarily by the city and other government agencies, developers, non-profit groups, and property owners within the shoreline jurisdiction. Taken together, these activities should lead to improvement of overall shoreline ecological functions over time.

1.2 Uses of this Restoration Plan

In addition to meeting grant requirements, this Shoreline Restoration Plan can be used by property owners and other interest groups as listed below.

- Information resource: Section 5 of this Plan identifies a number of organizations that provide guidance, and in some cases funding, for a wide variety of restoration projects. These organizations can be consulted by property owners or other parties wishing to undertake a restoration action.

- Grant applications: Program and projects included in this Plan may find it easier to obtain grant funding from sources that require or recommend inclusion in a publicly-vetted and adopted plan.

- Mitigation: In situations that require offsite mitigation, this Plan can provide a source of programmatic or specific project ideas that maximize the regional impact of the mitigation.

Depending on the scale and type of project, property owners and interest groups wishing to conduct a restoration action may need to obtain permits from the city, as well as Ecology, the Washington Department of Fish and Wildlife, the Washington Department of Natural Resources, and/or the U.S. Army Corps of Engineers. Projects within the shoreline jurisdiction would also need to comply with the city's SMP, including the incorporated critical areas regulations. Also depending on the scale and type of project, professionals, including biologists or engineers, may need to assist in project design and implementation.

2 SHORELINE INVENTORY AND ANALYSIS SUMMARY

The city recently completed an inventory and analysis of its shorelines (January 2015) as an element of its SMP update. The Shoreline Analysis Report for Shorelines in the City of South Bend (The Watershed Company and Berk 2015) summarizes the current regulatory framework; describes existing physical and biological conditions; and includes recommendations for restoration of ecological functions where they are degraded. The inventory and analysis information in the following section is summarized from detailed information presented in the Shoreline Analysis Report.

The City's shoreline jurisdiction includes approximately 192 acres over approximately 7.3 miles. In South Bend, the following waters qualify as Shorelines of the State.

- Willapa River (including tidal waters associated with Potter Slough and Mailboat Slough)
- Skidmore Slough

Additionally, per the SMA, all areas within the floodway are included as part of shoreline jurisdiction, as well as the area up to 200 feet landward of the floodway where a contiguous floodplain is present. Figure 2-1 provides an overview of shoreline jurisdiction in the city.

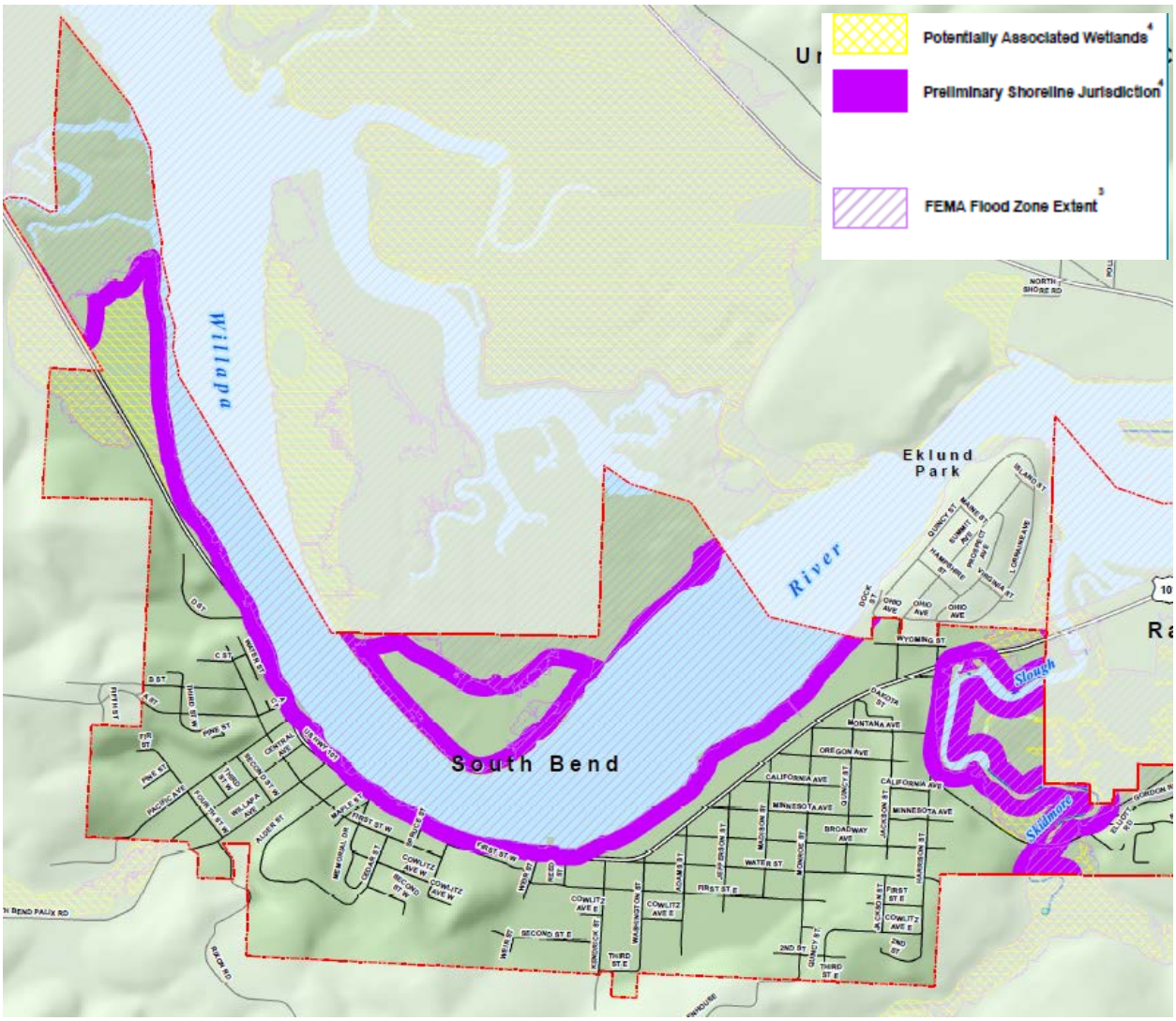

Figure 2-1. Map of shoreline jurisdiction in the City of South Bend. Shoreline jurisdiction includes areas shown in purple, as well as potentially associated wetlands and areas waterward of the Ordinary High Water Mark.

Key habitats associated with shorelines in South Bend include tidal wetlands and riparian habitats. Shallow water estuarine ecosystems, such as Potter Slough and marsh complexes on the northern side of the Willapa River, are particularly productive ecosystems that provide important habitats for the rearing of small, subyearling ocean-type Chinook salmon during estuarine residency (Levings et al. 1991, 1995, Bottom et al. 2005). Shallow water estuarine habitats may provide spatial separation from aquatic predators that reside in deeper waters, improved protection from predators through higher turbidity levels (Gregory and Levings 1998), as well as improved foraging capacity (Levings et al. 1991). Although conditions in the Lower Willapa River are not generally suitable for salmon spawning habitat, tributaries to Skidmore Slough in unincorporated Pacific County produce coho and chum salmon (Smith

1999). Tide gates on Skidmore Slough restrict tidal influence there, which likely limits habitat access for juvenile salmonids produced in the Willapa River.

Riparian vegetation is limited throughout most of the city. Where riparian vegetation exists, it contributes to important to fish and wildlife habitats, including microclimate regulation, invertebrate and detrital food sources for juvenile fish, shaded cover, and woody debris recruitment (Naiman and Decamps 1997). In some cases, dense monocultures of non-native, invasive vegetation form, precluding native vegetation. Potential effects of invasive plant species in riparian and instream habitats include increased instream water temperatures, lowered dissolved oxygen, changes in pH, reduced bank stability, altered flow conditions and increased localized flooding.

Spartina was introduced into Willapa Bay in 1894 as packing material for oyster shipments from the East Coast (Ecology, electronic reference). In 2002, *Spartina* had colonized 15,000 acres of former mudflat in Willapa Bay (Ecology, electronic reference). By establishing marsh vegetation, *Spartina* encourages deposition and transforms mud flats into marshes. This change displaces functions associated with mud flat habitats, including shellfish beds in Willapa Bay and shorebird foraging habitat. Following a coordinated effort among government, non-profit, and private entities to eliminate *Spartina*, today only isolated patches of the plant remain in Willapa Bay and the lower reaches of the Willapa River.

The Willapa River at South Bend is designated as a Class A surface water under Surface Water Quality Standards (Chapter 173-201A WAC). A Total Maximum Daily Load (TMDL) has been established for bacteria and dissolved oxygen, which have previously exceeded established thresholds in the Lower Willapa River. As part of an effort to address dissolved oxygen concerns associated with the South Bend and Raymond wastewater treatment plants (WWTPs), the two cities entered an interlocal agreement to construct and treat wastewater at a combined regional WWTP located in Raymond. The new WWTP went on-line in 2013, and the former South Bend facility was decommissioned. The new $30 million WWTP is capable of treating the projected flows of both communities until at least 2027 while meeting water quality standards (Creative Community Solutions 2013). A summary of impaired water quality listings in South Bend's shoreline jurisdiction is provided in Table 2-1.

Table 2-1. Impaired water quality listings in South Bend's shoreline jurisdiction. (Source: Ecology 2012.)

Waterbody	Parameter	Status
Unnamed tributary to Willapa River	Bacteria	TMDL
Willapa River	Bacteria	303(d) impaired
	Bacteria and Dissolved Oxygen	TMDL

3 RESTORATION GOALS

General goals for restoration in the City of South Bend were developed based on a review of policies in the existing Pacific County SMP and the existing conditions in the City of South Bend. Proposed restoration goals are listed below.

- Reclaim and restore degraded areas to restore natural processes to the extent feasible.
- Preserve estuarine areas for fisheries and wildlife protection.
- Monitor and control invasive, noxious weeds with all due diligence.
- Continue to improve water quality conditions in the city's shorelines, in accord with the established Total Maximum Daily Loads (TMDLs).

4 ONGOING PLANS AND PROGRAMS

Several plans and programs have been developed that include goals and recommendations relevant to shoreline habitat protection and restoration in the City of South Bend. These existing plans are highlighted below.

4.1 South Bend Comprehensive Plan

The city's Draft Comprehensive Plan (City of South Bend 2014) includes several policies that either directly or indirectly address restoration and voluntary protection of ecological functions. These include the following:

- Work with the Pacific County Lead Entity (Water Resource Inventory Area 24) to ensure appropriate protection of anadromous fish use of surface waters within the city (7.2 of the Draft Comprehensive Plan).

- Monitor and consider climate change science and its impact on land uses along the Willapa River and its associated tidal wetlands as more data becomes available (7.9 of the Draft Comprehensive Plan).

- Prepare a study that explores restoring the former South Bend sewer lagoon as a wetland/fish and wildlife habitat mitigation-banking site (7.11 & 11.2 of the Draft Comprehensive Plan). [Note that a mitigation site is intended to maintain (rather than restore) ecological functions within the broader service area of the bank; however, a net gain in ecological functions could be expected locally as a result of the mitigation bank].

- Prepare a stormwater management plan that analyzes stormwater runoff and flooding issues, develops a general stormwater conveyance plan, and identifies projects and programs, including measures for protecting water quality (11.3 of the Draft Comprehensive Plan).

- Encourage the retention of properties under public and nonprofit ownership with intact natural vegetation as open space. Key focus areas include lands northwest of the Ron Craig Boat Launch, Old Mill Pond, and city-owned properties along the Willapa River (6.2 of the Draft Comprehensive Plan).

4.2 South Bend 2010-2016 Comprehensive Park Plan

The city's Comprehensive Park Plan (City of South Bend 2010) primarily focused on upgrading, maintaining, and expanding parks amenities and facilities. The plan identified Mill Creek Park, Helen Davis Park, and a proposed South Bend Wetland Trail Park as lands set aside for natural resource preservation, open space, remnant landscapes, and visual aesthetics and buffering. The plan identified the city's support for the Willapa Bay Regional Fisheries Enhancement Group's plan to develop the South Bend Wetlands Park, which would include trails through the wetlands north of the city. Such trails would need to comply with critical area regulations to ensure that functions are maintained. Additionally, to the extent that the trails could incorporate educational signs and experiences, the project could have long-term benefits for shoreline protection and restoration.

4.3 Willapa River Watershed Total Maximum Daily Loads (TMDLs)

As described in Section 2, the Willapa River and its tributaries are impaired with low dissolved oxygen level and high fecal coliform levels during certain times of year. Between 2004 and 2008, Ecology published TMDLs for the Willapa River, which are management plans designed to bring affected waters into compliance with applicable water quality criteria and to limit further water quality impairments. Since then, entities and organizations throughout the watershed have been working to improve water quality conditions. Strategies include control of discharges to the river, and protection and enhancement of riparian corridors to provide shade and organic material to the nearshore. The city has made a major step in implementing the TMDL for dissolved oxygen by decommissioning its WWTP and partnering with Raymond to develop a regional WWTP. Continued implementation of activities identified in the TMDL Water Quality Improvement Implementation Plans will help improve water quality within the city and the surrounding areas.

4.4 Pacific County (WRIA 24) Strategic Plan for Salmon Recovery

In 2001, the Pacific County WRIA 24 Strategic Plan for Salmon Recovery was completed. The overall goal of the Plan is to "reestablish the connection between fish and their habitat through the identification of human actions and their effects on salmon survival" (Applied Environmental Services 2001). The plan provides a scientific framework for prioritizing and selecting habitat restoration and protection projects that are most likely to contribute effectively and significantly to sustained salmon survival. Recommended restoration strategies include removing migration barriers; protecting and restoring riparian habitat; reducing sediment loads; replenishing stream productivity; and protecting intact, high quality, key habitats.

4.5 Statewide *Spartina* Integrated Weed Management Plan

This plan was initiated by the Washington Department of Agriculture in 2005 and carried out with cooperation from agencies such as the Department of Fish and Wildlife and the Department of Natural Resources. The goal of the management program is to preserve and protect the integrity of the native saltmarsh and mudflat ecosystems from the encroachment of *Spartina* by eradicating existing infestations and preventing new infestations. This is accomplished through removal of *Spartina* grass from tidelands; monitoring for regrowth; surveying nearby shorelines to identify spreading locations; and prevention of seed production.

5 EXISTING AND POTENTIAL PARTNERSHIPS

Several state, regional, and local agencies and organizations are actively involved in shoreline restoration, conservation, and protection in and around Pacific County and in the City of South Bend. These partners and their local roles in shoreline protection and/or restoration are identified below.

5.1 Local and Regional

5.1.1 Pacific County Conservation District (PCCD)

The Pacific County Conservation District provides programs and services to landowners and residents, including natural resource education and technical assistance on restoration and conservation activities. The PCCD can help landowners qualify for incentive- based grant programs. These programs include the Conservation Stewardship Program and the Environmental Quality Incentives Program, which both provide financial and technical assistance for landowners to implement conservation practices.

The PCCD also acts as the Lead Entity for salmon recovery in the Willapa Watershed (WRIA 24). The Pacific County Lead Entity guides implementation of salmon recovery actions in the watershed, and is responsible for selecting and allocating grant funding from the Salmon Recovery Funding Board. The PCCD also coordinates the Pacific County Marine Resource Committee, described below. An annual tree sale program sells native trees and shrubs for conservation planting.

5.1.2 Pacific County Marine Resource Committee (MRC)

The Pacific County MRC is a 28-member appointed citizen board that serves as a steward for the marine and estuarine resources in the County by facilitating science-based policies, research, and education.

5.1.3 Willapa Bay Regional Fisheries Enhancement Group (RFEG)

The Willapa Bay RFEG is one of 14 RFEGs in the State of Washington. The group works to restore salmon habitat in Pacific County, including all of the streams that drain to Willapa Bay. Projects include assessments of existing salmon habitat and salmon populations; removal of salmon blockages; stream restoration; salmon enhancement; and nutrient enhancement. The RFEG has sponsored several projects within the City of South Bend, including culvert removal and bridge construction on Old South Bend Raymond Road and stream restoration at Mill Pond Creek.

5.1.4 Washington Coast Sustainable Salmon Partnership (WCSSP)

The WCSSP is organized under an interlocal agreement between Counties, Cities, Tribes, and Ports within the region. Each year since 2013, the WCSSP, along with others in the region, has proposed the Washington Coast Restoration Initiative (WCRI) to the Washington State legislature. The concept behind the WCRI is to dedicate funds to sustaining salmon runs in coastal Washington watersheds. In 2013, the WCRI resulted in ~$2 million in restoration funding from the legislature. In 2015, $15 million in projects were proposed through the WCRI. Project funding will depend on allocation of funds from the state legislature.

5.1.5 Washington State University- Pacific County Extension

The Extension's Pacific County-based educators work provide educational programs and resources to support the natural resource economy in Pacific County. Local programs include forest stewardship, marine resources, invasive species control, water resources, and wood products programs.

5.2 State

5.2.1 Department of Fish and Wildlife (WDFW)

In addition to its role reviewing applications for in-water work and issuing Hydraulic Project Approvals, the WDFW develops management plans for Washington's Priority Habitats and Species. The WDFW also leads the state in resolving fish passage barrier problems through the Fish Passage Program, supporting public, state, and local agencies in their efforts to prioritize and fund fish passage barrier repairs across the state.

5.2.2 Recreation and Conservation Office (RCO)

The RCO manages grant programs to create outdoor recreation opportunities, protect high quality wildlife habitat and farmland, and aid salmon recovery.

5.2.3 Department of Ecology

Ecology is an active partner in monitoring and improving water quality conditions in accordance with the Willapa TMDLs. Ecology also coordinates and leads the Washington State Marine Spatial Planning interagency team. Staff from Ecology provide technical support and regulatory assistance to the City of South Bend when needed.

5.2.4 Washington Department of Natural Resources (WDNR)

Washington DNR owns and manages approximately 5 million acres of tidelands, forestlands, rangelands, and agriculture lands in Washington State. Washington DNR manages these lands for revenue, outdoor recreation, and habitat for native fish and wildlife. Within the City of

South Bend, WDNR does not own any upland lands. State-owned aquatic lands occur along the Willapa River. The agency is a partner in the control of Spartina in Willapa Bay.

5.3 Non-Governmental Organizations

In addition to the agencies and organizations listed in the above sections, several non-governmental organizations are active in Pacific County and could contribute to restoration in the City of South Bend. Possible entities include The Nature Conservancy, Trout Unlimited, Ducks Unlimited, Wild Fish Conservancy, and land trusts such as Pacific County Land Trust, Forterra, and Sportsmen's National Land Trust.

5.4 Private Landowners

Private landowners play an important role in future watershed conditions. Where private landowners are willing to voluntarily restore lands and manage them in such a way to minimize potential impacts, these landowners help protect, conserve, and restore shoreline ecosystem conditions.

6 Restoration Opportunities

The following activities are among the highest priority for improving shoreline functions in the City of South Bend.

Stormwater Management Planning

Per the city's Draft Comprehensive Plan, prepare a stormwater management plan that addresses stormwater and flooding issues, and identifies projects and programs, including measures to improve water quality.

Removal of derelict piles and in-water structures

As described in the Shoreline Analysis Report, numerous derelict piles and in-water structures are found throughout the city's shoreline jurisdiction. These piles are associated with relic pile dikes, fish traps and docks. Creosote was likely used as a wood preservative for most of these piles. Creosote includes many chemical compounds, including polycyclic aromatic hydrocarbons, which can leach into the surrounding waters, presenting water quality concerns. The physical structure of piles can also locally alter aquatic species assemblages and predator/prey relationships. For example, predators may use the pile structure as a location from which to ambush prey. Overwater structures, such as piers, affect aquatic ecosystems by shading areas of submerged aquatic vegetation and creating abrupt light transitions that can alter habitat use by local species assemblages. Removal of derelict piles and overwater

structures will help improve water quality and restore instream habitat conditions in the Willapa River.

Riparian vegetation enhancement

The city's Draft Comprehensive Plan also identifies retention of areas in public and non-profit ownership with intact native vegetation as open space. In addition to retention of these lands, there may be opportunities for enhancement of vegetative diversity. Riparian revegetation and enhancement can be a relatively low-cost restoration activity to implement. Because planting can occur on a site-by-site basis, it can easily be conducted by individual landowners or on a more coordinated citywide basis.

Restoration of intertidal marsh vegetation along the Willapa River

Several opportunities exist to restore intertidal marsh along the shoreline of the Willapa River. The scale of potential intertidal restoration could range from removing dikes and restoring natural processes over large areas to enhancing smaller patches of intertidal marsh along the Willapa River.

The city is in the final stages of permitting to convert the existing South Bend WWTP lagoons into vegetated habitat with elevations similar to the surrounding area. The area would flood under high flow events. Following the construction activity, which is scheduled to occur in the summer of 2015, intertidal vegetation will be allowed to colonize the site from surrounding areas. The site will be managed for at least three years to ensure that the site meets performance standards. A dike road is presently used to access the site from the northeast. The road serves other properties in addition to the WWTP, so any possibilities of modifying hydraulic connectivity on the east side of the marsh would need to involve voluntary participation from the owners of those properties.

Because intertidal marsh restoration can change the landscape, topography, and agricultural productivity or affected and adjacent lands, it is important to reinforce that any restoration actions identified in this plan would only occur through voluntary participation by landowners. The restoration of tidal exchange has been proposed for Skidmore Slough. However, the Port of Willapa Bay owns much of the land surrounding Skidmore Slough, and it is interested in maintaining the productivity of industrial and agricultural lands. Any restoration of Skidmore Slough would need to involve the Port and other surrounding landowners and ensure that their interests are addressed.

Softening of bank armoring with bioengineered approaches

Where feasible, replace hard structural armoring, such as rip rap and pile dikes with bioengineered alternatives that incorporate features such as large woody debris, live plantings, and other natural features that provide instream structure and habitat.

Continued monitoring and control of Spartina

As noted above and in the Shoreline Analysis Report, the control of Spartina has been a significant, joint agency effort in Willapa Bay and extending into the Willapa River. Efforts to remove the non-native and invasive plant have been successful; however, continued monitoring and maintenance should remain a priority to ensure that the plant is not allowed to reestablish in Willapa Bay.

Outreach and Education

Land use activities on privately owned lands both within and outside of shoreline jurisdiction play a significant role in hydrologic, water quality, and geomorphic functions and processes of a watershed. Outreach and education measures that help inform and engage the public to limit degradation and/or improve shoreline functions are essential to effectively maintain and restore conditions in the watershed. Examples of outreach and education opportunities include workshops, interpretive signs, videos on public television, and one-on-one outreach to individual landowners. The city's restoration partners may play a significant role in outreach and education.

7 FUNDING OPPORTUNITIES

Possible avenues to fund and implement restoration projects could include incorporating ecological enhancement goals and policies into comprehensive planning and coordinating with restoration partners to pursue grant funding opportunities. Several grant funding opportunities are available that could help support the protection and restoration of shorelines. Public grant funding sources, generally available on an annual basis, are described in Table 7-1. A sample of potential funding from private sources is listed in Table 7-2.

Table 7-1. Potential public funding sources for restoration and protection of shoreline ecological functions

Agency	Grant or Fee Name	Description
Washington State Recreation and Conservation Office	Salmon Recovery Funding Board Grants	Funds projects that protect and restore salmon habitat
	Land and Water Conservation Fund	Funding to preserve and develop outdoor recreation resources,

Agency	Grant or Fee Name	Description
		including parks, trails, and wildlife lands.
	Washington Wildlife and Recreation Program	Provides funding for a broad range of land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland preservation, and construction of outdoor recreation facilities.
Washington Department of Fish and Wildlife	Aquatic Lands Enhancement Account Grants	Funding to buy, protect, and restore aquatic lands habitat and to provide public access to the shoreline.
Washington Department of Ecology	Coastal Protection Fund / Terry Husseman Grants	Funding to: restore or enhance environmental, recreational, archaeological, or aesthetic resources; investigate the long-term effects of oil spills; and develop and implement aquatic land geographic information systems.
US Fish and Wildlife Service	Coastal Wetland Conservation Grants	Competitive matching grants to State agencies to acquire, restore, and enhance coastal wetlands.
	Cooperative Endangered Species Conservation Fund (section 6 of the Endangered Species Act)	Grants to states to participate in a wide array of voluntary conservation projects for candidate, proposed, and listed species.
	Partners for Fish and Wildlife Restoration	Technical assistance and cost-share incentives to private landowners to restore fish and wildlife habitats

Table 7-2. Potential private funding sources for restoration and protection of shoreline ecological functions

Group	Grant Focus
National Fish and Wildlife Foundation	Provides funding on a competitive basis to projects that sustain, restore and enhance the Nation's fish, wildlife, plants and their habitats.
The Burning Foundation	Grants to protect threatened rivers, forests, and native fish populations.
FishAmerica Foundation	In partnership with the NOAA Restoration Center, grants for community-based restoration of marine and anadromous fish species.
The Konsgaard-Goldman Foundation	Grants for forest protection and initiatives addressing climate change in Washington State.
The Northwest Fund for the Environment	Grants to protect and restore aquatic ecosystems.
Washington State Parks Foundation	Provides Small and Simple Grants, Individual Grants, and Program Support grants for restoration and education at Washington’s State Parks.

8 IMPLEMENTATION

The City of South Bend Shoreline Restoration Plan provides an important non-regulatory component of the SMP, which helps establish a framework to improve shoreline functions. The Shoreline Restoration Plan represents a vision for restoration that will be implemented over time. Presently, the restoration opportunities identified in the plan are conceptual. With the city's leadership and partnership with agencies, NGOs, or individual landowners (Section 5), these conceptual restoration opportunities could be funded and implemented. The city will track project implementation over time to document restoration actions on a city-wide basis.

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10 LIST OF ACRONYMS AND ABBREVIATIONS

Ecology ..... Washington Department of Ecology

MRC ..... Marine Resource Committee

NOAA..... National Oceanic and Atmospheric Administration

RFEG ..... Regional Fisheries Enhancement Group

SMA ..... Shoreline Management Act

SMP ..... Shoreline Master Program

TMDL..... Total Maximum Daily Load

WAC..... Washington Administrative Code

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

WDNR ..... Washington Department of Natural Resources

WRIA ..... Water Resource Inventory Area

WWTP..... Waste Water Treatment Plant