CITY OF SHELTON
SHORELINE MASTER PROGRAM UPDATE

Restoration Plan
SMA Grant Agreement No. G1100005

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Photo credit: Tim Gates, Department of Ecology

TABLE OF CONTENTS

Appendix A

LIST OF TABLES

CHAPTER 1.0 INTRODUCTION

This plan was prepared as part of City of Shelton's Shoreline Master Program (SMP) Comprehensive Update project. The City is currently in the process of updating the SMP to comply with the Washington State Shoreline Management Act [1] (SMA or the Act) requirements, enacted in 1972 and the state's shoreline guidelines[2], (the guidelines) which were adopted in 2003, and amended in 2011.

This restoration plan is prepared in concert with **Mason County's Restoration Plan** (August 2012) and several County sections are intended to be applicable to Shelton's. The County establishes the overall watershed approach from which Shelton is a part of.

This Draft Restoration Plan was prepared by ESA with assistance from Herrera Environmental Consultants and Coastal Geologic Services and in cooperation with City of Shelton Community Development Department. This Draft Restoration Plan was funded by a grant from Washington State Department of Ecology (Grant No. G1100005). The Draft Restoration Plan will be reviewed by Ecology technical staff, the Joint Technical Advisory Committee, the Citizens Advisory Committee and other stakeholders prior to finalizing.

1.1 PLAN PURPOSE

This plan, in conjunction with the SMP policies and regulations, is designed to satisfy the shoreline guideline requirements for shoreline restoration planning. It provides a planning-level framework for understanding how and where shoreline ecological functions can be restored in Shelton. The plan also describes how future restoration activities can be integrated with existing and ongoing restoration efforts and the diversity of other restoration efforts being implemented by federal and state agencies, Tribes, the City of Shelton, non-governmental organizations, and private citizens.

[1] Revised Code of Washington (RCW) 90.58

[2] Washington Administrative Code (WAC) 173-26, Part III

1.2 DEFINING RESTORATION

Restoration can be defined generally as returning an area to a previous condition by improving ecological structure and function. Restoration creates a net increase in the amount, size, and/or functions of an ecosystem or components of an ecosystem compared to a baseline condition (Thom et al. 2005a)

What does Restoration Mean?

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

How is it different from Protection?

Protection requires that development be prohibited in some areas and that when allowed, development occur in a way that mitigates adverse effects on the natural environment such that the net result of the development activity is no worse than the pre-development condition. Protection also requires that deliberate measures be taken to ensure that natural ecosystem processes (such as net shore-drift, channel migration, large woody debris recruitment, for example) continue with minimal impairment.

Restoration, on the other hand, involves more than simply following and enforcing existing rules or maintaining existing conditions. It requires taking active steps to improve the condition of existing resources and replace resources that have been lost. Restoration measures are intended to supplement shoreline protection efforts such that environmental conditions improve over time.

How does Restoration fit into No Net Loss?

The concept of no net loss of shoreline ecological functions is rooted in the Shoreline Management Act and in the goals, policies, and governing principles of the state's shoreline guidelines. The Act states: "permitted uses in the shoreline shall be designed and conducted in a manner that minimizes insofar as practical, any resultant damage to the ecology and environment of the shoreline area." The guidelines suggest that no net loss is achieved primarily through regulatory mechanisms including mitigation requirements but that restoration incentives and voluntary actions are also critical to achieving no net loss.

The SMP requires that proponents of shoreline development fully mitigate impacts caused by their proposed development and although they are not required to improve conditions over and above the impacts of their development action, they may elect to implement elements of this plan as mitigation for shoreline development if appropriate. Citizens, agencies, and other groups may also elect to implement portions of this plan irrespective of any proposed development activity or requirement to mitigate impacts. Components of this plan can also be implemented as part of future capitol or resource management endeavors. As an example, a park improvement project could be designed to include removal of intertidal fill and restoration of nearshore habitat. All of these actions would have the effect of improving conditions over time, which is necessary for achieving no net loss.

CHAPTER 2.0 RESTORATION VISION & GOALS

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

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

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

- A healthy human population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem;
- A quality of human life that is sustained by a functioning Puget Sound ecosystem;

- Healthy and sustaining populations of native species in Puget Sound, including a robust food web;

- A healthy Puget Sound where freshwater, estuary, nearshore, marine, and upland habitats are protected, restored, and sustained;

- An ecosystem that is supported by ground water levels as well as river and stream flow levels sufficient to sustain people, fish, and wildlife, and the natural functions of the environment; and

- Fresh and marine waters and sediments of a sufficient quality so that the waters in the region are safe for drinking, swimming shellfish harvest and consumption, and other human uses and enjoyment, and are not harmful to the native marine mammals, fish, birds, and shellfish of the region.

This plan seeks to achieve those same goals by contributing to the Puget Sound restoration effort and to the specific strategies being developed by the Partnership as part of the 2020 Action Agenda (Puget Sound Partnership, 2009). This plan is also intended to be compatible with and incorporate the restoration goals already developed by other restoration planning entities in the region including, but not limited to: the South Puget Sound Salmon Enhancement Group, the WRIA 14 Action Plans, and many others.

2.1 RESTORATION VISION

The restoration vision for City of Shelton can be described as follows:

> A community that preserved its rural, small town atmosphere through protection and restoration of its natural setting of streams, waterfront, and lakes. A community that maintained a historic working-waterfront, while improving habitat values over time and eliminating impacts from toxic containments; with sustainable, healthy populations of shellfish, salmon and other wildlife. A community that restored its lakes so that people can swim and fish without concerns for water quality. A community and accompanying infrastructure that is resilient to floods and sea-level rise. A community composed of an informed citizenry that understands the value of marine and freshwater resources and acts consistently to protect and restore them.

2.2 RESTORATION GOALS

Shoreline Master Program goals and policies should be consistent with and integrated into the Shelton Comprehensive Plan. As the City works through the SMP update process, the following potential goals and policies related to shoreline restoration could be added to the Comprehensive Plan under a newly created Shoreline Master Program Element. The content is organized to be consistent with the structure and organization of the Shelton Comprehensive Plan elements. Some of the policy statements below are already included in the Draft SMP (2013).

SMP1. Encourage development of soft-shore stabilization measures.

SMP1a. The City should consider shoreline restoration as an alternative to structural shoreline stabilization and protection measures where:

- The length and configuration of the shoreline will accommodate such systems.
- Such an approach can be accommodated at the specific site.
- Shoreline restoration will accomplish one or more of the following objectives:
  - Recreate or enhance natural shoreline ecological functions;
  - Create or enhance natural habitat;
  - Prevent erosion that is not integral to natural shoreline ecological processes; or
  - Enhance access to publicly-owned shorelines.

SMP2. Restoration projects should be designed in a manner that complements adjacent natural resources, incorporates maintenance-free designs, minimizes in-water work, considers sea-level rise, and includes adaptive management techniques.

SMP2a. All shoreline restoration projects should protect the integrity of adjacent natural resources including aquatic habitats and water quality.

SMP2b. Where possible, shoreline restoration should use maintenance-free or low-maintenance designs including native, drought-tolerant plants.

SMP2c. Shoreline restoration should not extend waterward more than necessary to achieve the intended results.

SMP2d. Habitat protection and restoration projects should consider implications of sea-level rise and other climate change impacts to promote resiliency of habitats and species.

SMP2e. Restoration projects should have adaptive management techniques including adjusting the project design, correcting the problems (barriers to success), and implementing contingency measures.

SMP3. Encourage cooperative restoration actions involving local, state, and federal public agencies, tribes, non-government organizations, and private landowners.

SMP3a. The City should identify specific restoration opportunities where it can take the lead with support from other regional entities.

SMP3b. The City should work with the major landowners and state agencies to address contamination in sediment, soil, and ground water at Goose Lake.

SMP3c. The City should work with the major landowners in Shelton Harbor to identify opportunities for riparian and aquatic restoration.

SMP3d. The City should work with Squaxin Island Tribe to identify specific restoration opportunities for Goldsborough Creek, Oakland Bay and Johns Creek.

SMP4. Integrate restoration efforts with capital improvement projects.

SMP4a. Incorporate habitat enhancement elements into the design and implementation of public infrastructure improvement projects.

SMP4b. Prioritize enhancement and restoration efforts at public parks and publically-owned open space lands.

SMP5. *Encourage voluntary restoration as part of development proposals.

SMP5a. Employ incentives and encourage actions in shorelines and critical areas that restore the ecological functions and ecosystem-wide processes of the city's shorelines.

SMP5b. Encourage removal of invasive vegetation and planting of native vegetation on private property.

SMP5c. Use this restoration framework to integrate compensatory mitigation projects into the broader restoration vision for the city.

SMP6. Educate the Shelton community on restoring shoreline habitat.

SMP6a. Establish public education materials to provide shoreline landowners technical assistance about the benefits of native vegetation plantings.

SMP6b. Identify areas where kiosks and interpretive signs can enhance the educational experience of users to the shoreline.

SMP7. Protect flood storage, conveyance, and ecological values of floodplains, wetlands, and riparian corridors and, when feasible, to enhance or restore these ecological functions and values. Flood risk reduction strategies and projects should be coordinated on a river-reach scale with the salmon habitat recovery plans.

SMP7a. Encourage voluntary replacement of levees and revetments with alternative shoreline stabilization materials, where feasible.

SMP7b. Restore, enhance, and protect native riparian forest communities along the Goldsborough, Johns, and Mill Creek systems.

SMP8. Prioritize watershed restoration and protection actions that would improve ecological functions and processes of city shorelines.

SMP8a. Protect and enhance the large wetland complex extending from Island Lake southwest to Goose Lake.

SMP8b. Protect and/or enhance in-stream habitats used by priority salmonid species such as Chinook salmon, coho, and coastal cutthroat trout.

SMP8c. Protect intact riparian areas and restore degraded riparian areas to retain and/or improve ecological function of both freshwater and marine shorelines.

SMP 9. Prevent pollution from urban stormwater runoff for new development and retrofit existing developed areas to improve water quality and water quantity.

SMP9a. Identify and map existing stormwater systems that direct runoff to the city's shorelines.

SMP9b. Identify and prioritize actions to address stormwater impacts negatively affecting city shorelines.

SMP9c. Implement stormwater retrofits, make improvements to operations/maintenance of existing stormwater infrastructure, and construct additional source control measures.

SMP9d. Encourage low impact development to preserve the functions of natural soils and vegetation, reduce peak stormwater runoff, and improve water quality.

CHAPTER 3.0 EXISTING CONDITIONS

The City of Shelton is located in Water Resource Inventory Area 14a: Kennedy Goldsborough. Existing watershed conditions are described in detail in **Mason County's Restoration Plan**.

There are six shorelines of the state in the City of Shelton and its urban growth area:

1. Oakland Bay
2. Johns Creek
3. Island Lake
4. Goose Lake
5. Goldsborough Creek
6. Mill Creek

These shorelines represent nearly 11 miles of shoreline. The City of Shelton Draft Shoreline Inventory and Characterization report (July 2011) describes the existing conditions of these shorelines. Some of the findings of the inventory report are summarized below:

CHARACTERISTIC	SUMMARY
LAND USE	
	Existing land uses in Shelton's shoreline areas are mostly a mix of forestry, industrial, and residential. Industrial businesses are located mainly along Oakland Bay, Goldsborough Creek and Johns Creek. Residential properties are located along Goldsborough Creek, Johns Creek, Mill Creek and Island Lake. Most single-family homes on Island Lake have individual docks or piers. Forestry is located around Goose Lake.
WATER-DEPENDENT USES	
	Water-dependent uses typically include port industries, log booming and storage, shipping, marinas, docks, piers, boating facilities, outfalls, and aquaculture. The Simpson Lumber Company and Manke Timber Company mills and yards are located along Oakland Bay near the stream mouth of Goldsborough Creek. The Oakland Bay Marina, Pine Street Boat Launch, and Shelton Yacht Club are located to the north. A wastewater treatment facility with an outfall that extends 1,250 feet into Oakland Bay is located to the south. Single-family residential docks are located along Island Lake. These uses are all considered water-dependent uses.
PARKS AND PUBLIC ACCESS	
	There are a total of 12 acres of parks and public access points in Shelton's shoreline area. There are pocket parks located along Goldsborough Creek but most do not provide access to the creek. Oakland Bay and Island Lake have public boat launches. Public access is encouraged on public lands that lie within the shoreline jurisdiction.
FISH AND WILDLIFE HABITAT	
	Shelton streams also support numerous species of native salmon and trout, several of which are listed under the Endangered Species Act. Many other wildlife species use Mason County shorelines as habitat. These include harbor seals, California sea lions, Stellar sea lions, mountain quail, western pearlshell, western toad, Pacific Pond Turtle, bats, seabirds, and waterfowl.

CHARACTERISTIC	SUMMARY
WATER QUALITY	
	Water quality in Shelton has been identified as impaired or degraded. Water quality challenges for the shorelines in Shelton includes fecal coliform and high temperatures. Water quality issues in Oakland Bay include the presence of fecal coliform bacteria, dioxin, and wood and wood related chemicals. Island Lake has an invasive aquatic plant problem. Goose Lake was used as a disposal site in the 1930s and 1940s for paper mill waste.
NEARSHORE FUNCTIONS AND COASTAL PROCESSES	
	Waves generated by wind are the dominant driver of coastal processes in Mason County. Nearshore sediment supply is typically derived from eroding bluffs where sediment is transported down-drift by waves to form the varieties of shoreforms found in the County. Oakland Bay contains sheltered, low-energy shores that form highly complex coast lines. Erosion and sediment transport rates are very low in these environments. In the City of Shelton, flow and deposition of sediments from Goldsborough Creek interact with wave-transported sediments to form the sand and mud flats located in the inner harbor. Modifications to the natural shoreline in Shelton include bulkheads, riprap, dredging, stream channelization and historic fill.
SURFACE WATER AND GROUNDWATER	
	Shelton has natural surface water and groundwater resources. All three shorelines (Goldsborough, Johns and Mill Creek) fall below the Washington State minimum instream flow requirements during certain months of the year. These streams have been closed to further diversions for some or all of the year.
RESTORATION	
	The Department of Ecology will work with interested community members, environmental groups, and other agencies as part of the Oakland Bay Sediment Investigation to determine how potential cleanup actions could be integrated with habitat restoration projects in Oakland Bay and Shelton Harbor. In addition, the Squaxin Island Tribe is working with harbor land owners to develop a fish and wildlife restoration plan for the inner harbor. Habitat improvements could increase coho production in Goldsborough Creek. A cleanup action plan is being conducted for sediment remediation related to the Goose Lake area and future development activities. Sediments at the lake contain multiple chemicals of concern associated with a former paper mill.

Key impairments for shorelines in Shelton include: 1) degradation of water quality from both point and non-point pollutant sources; 2) alteration to hydrologic functions from existing development; and 3) habitat impairments.

Water quality impairments are noted for all streams in the City and UGA, as well as Oakland Bay. High fecal coliform bacteria and temperature exceedances in freshwater shorelines have been caused by nutrient loading, urban and agricultural runoff, and a lack of riparian vegetation cover.

Elevated levels of wood waste, wood-related chemicals, and detectable levels of dioxin have been documented in Oakland Bay likely caused by current and past industrial uses. Dioxins and other contaminants are found in the sediments of Oakland Bay. High levels of fecal coliform have also been documented in Oakland Bay which is likely a result of failing septic systems, surface water runoff, and point sources such as sanitary sewer overflows.. The City of Shelton has recently completed a complete overhaul of its main wastewater treatment plant.

Hydrologic functions of streams have been affected by existing development, including limiting of tidal action in Goldsborough Creek by channelization and armoring. Most of the City of Shelton Downtown "core" and waterfront industrial uses occupy the former historic creek delta. Channelization and armoring of the creek hinders the formation of new river delta area and prevents channel migration. Armoring along existing railroad beds also limits channel migration. These alterations serve to functionally disconnect Goldsborough Creek from its floodplain and associated wetlands.

Culverts on shoreline streams and tributaries to those streams change the flow pattern of these waterbodies and cause downstream erosion. Some of these culverts also serve as partial barriers to fish passage.

Habitat alterations have occurred in the City's shorelines and its UGA. Log rafting and storage in the Bay has affected nearshore habitat and reduced opportunities for wildlife use of Oakland Bay. Native shellfish are affected by water quality issues and pollution. Culverts and road crossings have altered in-stream habitat.

CHAPTER 4.0 RESTORATION ACTIONS

4.1 PROGRAMMATIC ACTIONS

Certain restoration actions should be broadly and comprehensively implemented on a programmatic basis to help achieve restoration goals. The following programmatic actions are recommended for shorelines within the City of Shelton. Which City departments or other entities will take the lead on these actions will be determined in the future. Opportunities to partner with Mason County on programmatic efforts should be explored. Additional opportunities may exist to partner with not-for-profit groups such as the South Puget Sound Salmon Enhancement Group and tribal entities.

Education and Incentives:

- Educate property owners about proper vegetation/landscape maintenance (including preservation of native vegetation along stream/nearshore riparian corridors and integrated pest management techniques) to promote shore stabilization, large woody debris recruitment and good water quality.

- Encourage low impact development practices for shoreline property owners and limited use of impervious surfaces within shoreline jurisdiction.

- Encourage incentive programs for septic users to replace and increase setbacks for septic systems. Continue to identify failing septic systems and notify landowners of the need for remedial actions.

- Educate private property owners about the negative impacts of shore armoring and over-water structures and encouraging soft shore protection where shore protection is unavoidable.

- Educate private property owners about the negative impacts incorrect application rates of pesticides, herbicides, and fertilizers can have on water quality.

- Educate private property owners about the mitigating impacts rain gardens can have on stormwater runoff associated with single family residential development.

- Educate boaters about proper waste disposal methods, anchoring techniques, and other best boating practices to minimize habitat damage and prevent water quality contamination.

- Encourage incentive programs for shoreline property owners, such as transfer or purchase of development rights and tax incentives for shoreline restoration and protection, and the advantages of conservation easements to permanently protect shorelines.

- Where shorelines have been modified, provide incentives to encourage redevelopment activities to include salmonid habitat restoration.

Marine Nearshore:

- Address point sources and non-point sources of pollutant loading to freshwater and marine shorelines. Remove pollutant sources to improve water quality and protect recreational uses.
- Supplement impaired feeder bluff contribution (mitigate for lost sediment supply) where possible, particularly where down-drift forage fish spawning may benefit.

- Encourage removal of creosote pilings, docks or other contaminants or derelict structures from the nearshore environment. Encourage replacement of creosote-treated piles with concrete or steel piles.

- Encourage dike removal, where feasible.

- Remove blockages to small tributaries to the nearshore such as culverts, fill and structures.

- Replant/restore riparian vegetation in degraded areas.

Freshwater Shorelines (Lakes and Rivers):

- Restore forested riparian areas and native vegetation in shoreline areas.

- Remove invasive plants from riparian areas to restore ecological functions.

- Voluntarily conserve existing forested riparian areas and native vegetation in shoreline areas.

- Continue to address water allocation and consumptive uses to improve in-stream flows and maintain salmonid habitat. This is an important issue specifically for John's Creek.
- Assess feasibility of existing armoring removal and soft-shore alternatives for restoration projects along Goldsborough Creek.
- Restore the Goldsborough Creek estuary to improve salmonid rearing opportunities.
- Implement Washington Department of Fish and Wildlife *Integrated Streambank Protection Guidelines* especially in lower reach of Goldsborough Creek where current riprap exists.
- Integrate restoration with flood hazard management efforts to reestablish and protect natural floodplain functions, where feasible.
- Consider downstream and upstream implications for flood stage and sediment dynamics resulting from restoration projects.
- Remove armoring and bulkheads from publicly-owned freshwater sites including parks, wherever feasible.
- Voluntarily renovate existing docks and piers to allow light penetration for protection of aquatic habitats.
- Encourage removal of single-use docks and restoration of aquatic habitats.
- Encourage lake associations or stewardship organizations to act for the protection of water quality and control of invasive aquatic weeds in freshwater lakes.
- Remove culverts and blockages from smaller tributaries and replace with bridges to allow for fish passage and channel migration.
- Discourage new development in the floodplain and channel migration zone.

Infrastructure:

- Incorporate native tree and shrubs plantings as part of planned trail expansions.

- Manage water withdrawals to address in-stream flows, especially in water-limited basins.

- Inspect, maintain, and repair leaking or unauthorized septic systems to prevent nutrient and bacteria loading in streams and bays. Where possible, public sewer systems should be installed to replace on-site septic systems.

- Reforest commercial forest lands and repair or abandon forest roads.

- Retrofit stormwater systems using Low Impact Development (LID) strategies.

Planning and Coordination:

- Continue to work with Ecology and other agencies to develop a strategy to address dioxins, PCBs and wood waste in Oakland Bay sediments.
- Coordinate with Ecology and private developer during clean-up of Goose Lake to incorporate restoration and public access opportunities.
- Match mitigation, including off-site and compensatory mitigation, to appropriate restoration and enhancement activities as identified in salmon recovery, watershed management plans and this SMP restoration plan.

- Coordinate SMP restoration with salmonid recovery and watershed management plans to align with projects prioritized in salmon recovery plans.

- Survey and monitor invasive species, including noxious weeds and nonnative invertebrates (e.g., tunicates), and initiate eradication programs as needed.

4.2 SITE-SPECIFIC ACTIONS

This section describes restoration activities that would be applied to Shelton shorelines due to specific impairments. In some cases the restoration activities are the same or similar to programmatic actions described previously. However, because specific impairments were identified for the reaches, the restoration activities have higher potential to improve ecological functions and may therefore support a higher prioritization.

The approach applied to identify restoration opportunities along marine shorelines integrated marine/nearshore site-specific data with regional restoration and conservation priorities. A comprehensive nearshore assessment has not been conducted for Shelton or Mason County nearshore environment. Therefore areas with nearshore restoration potential were compiled by relying on existing data. See Mason County Restoration Plan, Section 4.2 for more information.

The approach applied to identify restoration opportunities along freshwater shorelines combined local site-specific data with regional restoration and conservation priorities identified in WRIA 14 salmon recovery plans, fish passage barrier inventories, riparian assessments, TMDLs, and other documents.

Table 4-1 summarizes recommended restoration actions for shorelines under the City's SMP jurisdiction and within the City's UGA. The table also provides an assessment of the scale and potential length of time required to implement restoration opportunities. For each identified opportunity, the table identifies whether the project is of a short term or long term nature. As detailed restoration assessment and prioritization occurs consistent with this plan, the initial assessment of timelines should be re-focused to create detailed schedules and benchmarks for those actions and areas with the greatest restoration potential. Marine site-specific restoration opportunities are identified on Restoration Plan Map 1 (Appendix A).

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

Table 4-1. Restoration Actions for City of Shelton

Waterbody	Reach	Alterations	Restoration Opportunities	Timing (short term vs long term)
Oakland Bay	All reaches	Land conversion from pervious to impervious surfaces Disconnected delta from historic fill, channelization, armoring, and development In-water log storage One 303 (d) Category 5 listing for temperature; TMDL for fecal coliform bacteria; Oakland Bay Sediment Investigation for dioxins Land conversion of historic stream delta and salt marsh to commercial and industrial uses (Shelton downtown and waterfront). Overwater structures	Voluntarily protect existing forest cover. Repair failing septic systems, where identified. Acquire Eagle Point to conserve the habitat function and value of this priority area for use of adult migrating salmonids and juvenile salmonids Work with Simpson Timber, Manke Lumber, and the Port of Shelton on habitat restoration / land conservation. Restore native vegetation and trees in marine riparian areas. Restore riparian habitat to the mouth of Goldsborough Creek. Restore Goldsborough Creek channel to remove armoring and increase instream habitat complexity where feasible. Realign State Route 3 to increase the riparian corridor width Increase channel cross-sectional width to establish a more natural salinity gradient in the lower reach of Goldsborough Creek and create marsh, channel meanders, or off-channel habitat areas Add riparian vegetation in suitably high areas to provide a terrestrial prey source for juvenile salmonids, provide inputs of long-term inputs of large woody debris, and provide a natural buffer Move log storage operations away from the shoreline into deeper water Restore a stream delta and salt marsh at Goldsborough Creek mouth Shelton beach restoration: remove armoring, nourish beach to recreate natural beach, enhance riparian vegetation (See Map 1; PSNERP, 2012) Shelton bluff restoration: remove armoring and restore bluff sediment source (See Map 1; PSNERP, 2012)	**Short term** (riparian plantings) / **Long term** (habitat restoration, armoring removal, channel restoration, stream mouth restoration)

Waterbody	Reach	Alterations	Restoration Opportunities	Timing (short term vs long term)
Goldsborough Creek	All reaches	Land conversion from pervious to impervious surfaces. Logging adjacent to the creek. Lack of riparian vegetation and instream large woody debris. Large portions of the channel from Highway 101 downstream are channelized and armored with riprap. Development within the floodplain limit channel migration and disconnect the stream from wetlands. Culverts and weirs have changed flow patterns on the Creek. Diversion of groundwater and surface water affecting flows Bank erosion and instability in developed and logged areas. Water quality issues related to forestry uses. Culverts block fish passage on tributaries and limit spawning habitat. Category 5 waters for the temperature parameter; quality assurance project plan (QAPP) for fecal coliform bacteria with respect to the TMDL; Category 4C waters for instream flow, Category 2 waters for temperature Summer low flows limit coho survival and productivity	Encourage voluntary soft-shore stabilization and removal of riprap east of Front Street, where feasible. Restore riparian functions through native tree and shrub planting. Voluntarily protect remaining forested riparian cover. Educate the public regarding use of fertilizers and pesticides on residential lawns. Voluntarily protect and restore associated wetlands and off-channel habitat, where present. Add large woody debris to stream channels for immediate benefits until riparian conditions improve to allow natural recruitment (identified as a priority on the Lead Entity Habitat Work Schedule). The Squaxin Island Tribe and others have been undertaking LWD projects. Restore riparian vegetation along Goldsborough Creek in cooperation with Mason Conservation District and other organizations Conduct a riparian assessment to identify appropriate locations for riparian restoration actions. Identify areas where Simpson railroad grade, roads, and culverts constrict stream channel, disconnect wetlands, or block fish migration. Work with SPSSEG, Mason Conservation District, and others to restore streambanks, off-channel wetlands, and fish passage. Relocate existing stormwater conveyance infrastructure from Goldsborough Creek stream bottom to reduce the amount of hardening currently needed. Should a trail along Goldsborough Creek be constructed, incorporate educational signage along the trail regarding salmon, the importance of habitat, and ways to become further involved in salmon issues.	**Short term** (riparian plantings, education efforts, riparian assessments) / **Long term** (riprap removal, stream channel restoration, stormwater relocation)

Waterbody	Reach	Alterations	Restoration Opportunities	Timing (short term vs long term)
Mill Creek	All reaches	Culverts and other stream crossing structures. Land conversion of forested to agricultural land. Land conversion from pervious to impervious areas. Logging operations. 303(d) impairment for temperature; Category 4C listing for instream flow; TMDL for temperature. Warm water outflows from mid-system lakes cause downstream reaches to be too warm for juvenile coho salmon. Inadequate riparian shade. Deficient in large woody debris. Residential activities cause bank erosion and fine sediment input.	Restore/preserve riparian corridor to provide shade, stabilize streambanks and recruit LWD Increase LWD key piece abundance to encourage pool formation and sorting of Sediments Determine and address causes of high temperatures in Mill Creek. Explore options to reduce temperatures of discharges from mid-system lakes. Remove fish passage barriers.	**Short term** (restore riparian corridor) / **Long term** (increase LWD, address high temperature)
Johns Creek	All reaches	Land conversion from pervious to impervious surfaces. Logging adjacent to the creek. Channelization and bank armoring. 303(d) list of impaired waterbodies (Category 5 water) for temperature; temperature TMDL; Category 4C for instream flow Diversion of water to hatchery Blockages to fish passage Low streamflows	Restore forested riparian zones where altered by timber harvest and clear-cutting. Voluntarily protect high value associated wetlands to protect habitat, flood storage, and summer base flow in stream Voluntarily protect tributary streams which contribute to flow. Add large woody debris to stream channel. Squaxin Tribe and others are identifying landowners and developing preliminary designs. Voluntarily protect cold water tributary habitat and flows. Augment base flows through the use of regulations, public education, and limiting water withdrawals.	**Short term** (restore riparian zones, protect wetlands and tributary streams) / **Long term** (add large woody debris, address base flows)

Waterbody	Reach	Alterations	Restoration Opportunities	Timing (short term vs long term)
Island Lake	All reaches	Land conversion from pervious to impervious surfaces Category 4C water for invasive exotic species: Eurasian water-milfoil Overwater structures. Public boat launch. Land clearing/removal of riparian vegetation near the lake	Reduce number of docks over time by encouraging removal of single-use docks. Conduct aquatic plant survey and develop a control plan for invasive species. Voluntarily protect existing trees and forest cover. Increase trees and nearshore vegetation, where possible. Educate landowners on proper application and use of fertilizers and pesticides.	**Short term** (tree planting, education) / **Long term** (plant survey, dock removal)
Goose Lake	All reaches	Chemical contamination from use as a disposal site for a paper mill Historically cleared areas not properly revegetated. Historic gravel mining operation on northeast side of lake. Land disturbance associated with the Sanderson Field and Highway 101, and a commercial building Was used as a sulfite waste liquor disposal site in the 1930s and early 1940s which has altered the lakes connection with a wetland complex to the northeast.	Reestablish a forested riparian zone where degraded. Remove invasive species, such as Scot's broom and blackberries, to improve habitats. Work with Ecology and Rayonier to address contamination from inorganic contaminants, dioxin, dibenzofuran, metal pollutants, and PCBs in sediment, soil, and ground water. Restore riparian zone through planting of native trees and shrubs. Decommission access roads where possible to reduce sediment transport and runoff.	**Short term** (invasive removal, riparian plantings) / **Long term** (address contamination, decommission roads)

Sources:

- *Oakland Bay and Hammersley Inlet Nearshore Habitat Assessment* (Anchor, 2002)
- *City of Shelton Critical Areas Ordinance Best Available Science Review and Recommendations for Code Update (Draft)* (Parametrix, 2006)
- *Puget Sound Partnership Watershed Implementation Priorities* (PSP, 2010)
- *Salmonid Habitat Limiting Factors - Water Resource Inventory Area 14, Kennedy-Goldsborough Basin* (Kuttel 2002)
- *EDT Analysis of Habitat Potential and Restoration Options - Coho in South Puget Sound Streams* (Mobrand 2004)
- *Oakland Bay, Hammersley Inlet, and Selected Tributaries Fecal Coliform Bacteria Total Maximum Daily Load - Water Quality Improvement Report and Implementation Plan* (Ecology 2011)

- *An Analysis of Potential Factors Limiting Coho Salmon Populations in Mill and Sherwood Creeks, South Puget Sound, Washington* (Stillwater Sciences 2007)
- *Salmon Habitat Project Development in the Goldsborough Creek Basin* (SPSSEG 2010)
- *Squaxin Island Tribe Water Quality Assessment - Clean Water Act 305(b) Report* (Squaxin Island Tribe Natural Resources Department 2005)
- *Watertype Assessment Project Summary - WRIA 14 Phase II* (Wild Fish Conservancy 2011)
- *Oakland Bay Riparian Area Assessment - Final Project Report* (Mason Conservation District 2010)
- Lead Entity Habitat Work Schedule (Accessed August 2012).

4.3 EXISTING CAPITAL IMPROVEMENT PROJECTS

In addition to the opportunities described above, the City has already undertaken several projects that will have lasting impacts on shoreline habitat values including; rehabilitation of the City's main wastewater treatment plant which outfalls to Oakland Bay, completion of several sewer basin Inflow and Infiltration (I and I) projects, including 4 of the City's 8 sewer basins, to eliminate high rainfall event discharges of sewage into waterways. Two more basin projects are in the planning and/or design phases.

The City of Shelton is actively pursuing funding to complete the restoration of David Shelton's Pear Orchard wetland located at the intersection of Pine Street and Front Street. It is anticipated that this project could provide additional flood storage capacity and habitat for Shelton Creek, which is a tributary to Oakland Bay.

As the City of Shelton designs and implements roadway improvements throughout its corporate limits, stormwater facilities are upgraded to current Department of Ecology standards to incrementally improve the quality of stormwater inputs to City waterways.

4.4 EXISTING RESTORATION PROJECTS

Restoration of state shorelines is currently occurring within the City of Shelton through partnership with the Squaxin Island Tribe and other local partners. The following projects are either completed or on-going restoration efforts:

Table 4-2. Summary of Existing Restoration Projects

Waterbody	Project Name	Project Lead/Sponsor	Project Description
Oakland Bay	Eagle Point Shoreline Acquisition	Simpson Timber Company / Port of Shelton	The project will set aside land to conserve the habitat function and value of a priority area for use by adult migrating salmonids and juvenile salmonids (PSP, 2010)
Oakland Bay	Fish and wildlife restoration plan	Squaxin Island Tribe	Squaxin Island Tribe is working with Simpson Timber Company, and other harbor land owners, to develop a fish and wildlife restoration plan for the inner Shelton Harbor. Habitat improvements, such as creating more gradual slopes along portions of the shoreline to allow salt marsh plants to grow, could increase coho escapement in Goldsborough Creek (Northwest

Waterbody	Project Name	Project Lead/Sponsor	Project Description
			Indian Fisheries Commission, 2010)
Oakland Bay	Ecology's Oakland Bay Sediment Investigation	Ecology	Ecology is working with interested community members, environmental groups, and other agencies to determine how potential cleanup actions could be integrated with habitat restoration projects and other activities in Oakland Bay, including Shelton Harbor (Ecology, 2010)
Oakland Bay	Oakland Bay Marina	Port of Shelton	Plans to improve the Oakland Bay Marina include demolition of the existing pier and construction of a new pier, a breakwater, a sewage pump-out, and new restrooms. Parking spaces would be increased to approximately 68 and the number of slips would be increased to 139. Parking expansion will occur on the site formerly known as the Evergreen Fuels site. To address issues of intertidal shading, existing boathouses will be relocated out of the intertidal zone into the subtidal zone and the four gangways will be consolidated into two. (Port of Shelton 2010 Comprehensive Plan)
Johns Creek	Johns Prairie	Port of Shelton	The Port's Johns Prairie property is located near Johns Creek off of Johns Prairie Road. The property is divided into a commercial mixed use district, a heavy industrial district, and a recreation district with soccer fields. The Port has identified several projects for its Johns Prairie property in its 5-year Capital Facilities Plan, including development of a fund for engineering and construction to accommodate planned development, an upgrade to the Port railroad, an enclosed garage building at the fenced storage yard, utility extensions, and implementation of signage. Included in this Plan is a brownfield clean-up.
Goose Lake	Remedial investigation / feasibility study and cleanup action plan	Rayonier (local developer)	Rayonier is working with the Department of Ecology to develop a plan for sediment remediation and industrial landfill closure as part of a future Shelton Hills Mixed-Use development (Floyd Snider, 2009)
Goldsborough Creek	No ongoing projects at this time		
Mill Creek	No ongoing projects at this time		
Island Lake	No ongoing projects at this time		

CHAPTER 5.0 EXISTING RESTORATION PROGRAMS AND PARTNERS

Numerous agencies and organizations are planning and implementing restoration efforts in Shelton and Mason County. Most restoration efforts are implemented because citizens, tribes, non-government entities and local, state and federal resource agencies collaborate to solve problems and achieve shared goals. Continued collaboration at all levels is needed if the goals of this plan are to be achieved.

Existing and ongoing restoration projects and programs in the City of Shelton and its urban growth area are described below. For county-wide restoration partners and programs, see the **Mason County Restoration Plan**, Chapter 8

Table 5-1. Summary of Existing Restoration Partners and Programs

Agency or Organization	Mission	Potential Role in City of Shelton Shoreline Restoration Projects
Squaxin Island Tribe Natural Resource Department	Works to sustain and enhance tribal resources; participates in natural resources enhancement and protection programs.	Partner for water quality monitoring and restoration projects.
Island Lake - Lake Management District	Raises funds necessary to eliminate Eurasian Milfoil from Island Lake in order to restore the recreational and aesthetic needs of property owners and other lake users by employing the best techniques based on environmental safety and efficacy without adversely impacting the fishery and wildlife habitat requirements. Monitors for recurrence of Eurasian Milfoil or emergence of other lake plants that could adversely impact the lake and recommends and fund removal of these plants throughout the life of the LMD. Maintains an advisory committee of neighborhood representatives to direct the efforts and funds of the LMD	Partner for aquatic weed removal projects, collects data on aquatic weeds
City of Shelton	The City of Shelton water utility actively promotes water conservation through educational information provided in monthly utility billings and provision of reduced rate rain barrels to residential customers, The City of Shelton Department of Waste Reduction and Recycling actively promotes the use of reduced rate compost bins to its residential customers in order to reduce waste as well as improve the water holding capacities of soils over time through compost amendments applied at home. The City of Shelton Community Development Department actively works with the Mason County Noxious Weed Board to identify and eliminate noxious weeds (such as	Collects data on water quality issues, obtains grant funding for restorative actions and provides educational materials to residents regarding water quality and habitat issues.

Agency or Organization	Mission	Potential Role in City of Shelton Shoreline Restoration Projects
	giant hogweed and knotweed) adjacent to waterways. The Department works with the Mason Conservation District to promote voluntary enhancement and improvement to shoreline residential properties. The Department encourages and provides educational materials to residential customers regarding the benefits of residential rain gardens.	
Oakland Bay Action Plan (prepared by Mason County Public Health) (2007)	Development of a community plan by a committee of citizens, business representatives and staff from city, county, state and tribal government that aims to: Reduce water pollution. Ensure the county's waters remain safe for swimming, fishing and all activities important to the culture, heritage and economy of the area.	The Oakland Bay Clean Water Advisory Committee coordinates many efforts within the region to help improve water quality within Oakland Bay.
Mason Conservation District	The Mason Conservation District assists residents of Mason County by providing a link between landowners, industry, and government agencies. They also provide technical and financial assistance to residents willing to implement conservation Best Management Practices.	The Mason Conservation District provides a resource for landowners interested in providing voluntary restoration actions in all areas, with an emphasis on shoreline areas.

CHAPTER 6.0 IMPLEMENTATION AND MONITORING

6.1 TIMELINES AND BENCHMARKS

In the context of the SMP update, restoration planning is a long-term effort. The SMP guidelines include the general goal that local master programs "include planning elements that, when implemented, serve to improve the overall condition of habitat and resources within the shoreline area" (WAC 173-26-201(c)). As a long-range policy plan, it is difficult to establish meaningful timelines and measurable benchmarks in the SMP by which to evaluate the effectiveness of restoration planning or actions. Nonetheless, the legislature has provided an overall timeframe for future amendments to the SMP. In 2003, Substitute Senate Bill 6012 amended the Shoreline Management Act (RCW 90.58.080) to establish an amendment schedule for all jurisdictions in the state. Once the City of Shelton amends its SMP (on or before June 20, 2013), the City is required to review, and amend if necessary, its SMP once every eight years (RCW 90.58.080(4)). During this review period, the City should document progress toward achieving shoreline restoration goals. The review could include:

- Re-evaluating adopted restoration goals, objectives, and policies;
- Summarizing both planning efforts (including application for and securing grant funds) and on-the-ground actions undertaken in the interim to meet those goals; and
- Revising the SMP restoration planning element to reflect changes in priorities or objectives.

Another mechanism that may serve to establish timelines and benchmarks would be establishment of a shoreline restoration program organized like or integrated with the City's capital improvement program (CIP). Similar to an infrastructure CIP, a shoreline restoration CIP would be evaluated and updated regularly. The CIP would be focused on site-specific projects and would be funded through grants. Further, other CIP projects, such as stormwater facility improvements, could be evaluated to determine if their design could advance shoreline restoration goals.

6.2 POTENTIAL FUNDING

A variety of outside funding sources are available for restoration projects in Puget Sound. Funding opportunities have generally increased since the implementation of Governor Gregoire's Puget Sound Initiative in 2005, though the process by which organizations are able to obtain funds is typically quite competitive. Sources listed here do not represent an exhaustive list of potential funding opportunities, but are meant to provide an overview of the types of opportunities available. For additional detail, see the **Mason County Restoration Plan, Chapter 9**.

Table 6-1. Summary of Existing Funding Sources

Funding Source	Allocating Entity
The Habitat Conservation Account Outdoor Recreation Account	Interagency Committee for Outdoor Recreation Washington Wildlife Recreation Program
Aquatic Weeds Financial Assistance Program Water Quality Program Coastal Protection Fund Coastal Zone Management Administration/Implementation Awards	Washington State Department of Ecology
Aquatic Lands Enhancement Account Volunteer Cooperative Project Program Landowner Incentive Program	Washington Department of Fish & Wildlife
Bring Back the Natives: A Public-Private Partnership for Restoring Populations of Native Aquatic Species Five-Star Restoration Matching Grants Program Marine Debris Prevention and Removal Program Puget Sound Marine Conservation Fund The Migratory Bird Conservancy Community Salmon Fund	National Fish and Wildlife Foundation
Salmon Recovery Funding Board Grants Family Forest Fish Passage Program	Salmon Recovery Funding Board (SRFB)
NOAA CRP 3-Year Partnership Grants NOAA CRP Project Grants American Sportfishing Association's FishAmerica Foundation Grants	NOAA Restoration Center Community-based Restoration Program

Funding Source	Allocating Entity
National Fish & Wildlife Foundation/National Association of Counties Coastal Counties Restoration Initiative	
Aquatic Lands Restoration Funding	Washington State Department of Natural Resources
Estuary and Salmon Restoration Program	Puget Sound Nearshore Partnership
The Clean Water State Revolving Fund Program Nonpoint Source Implementation Grant (319) Program Wetland Protection, Restoration, and Stewardship Discretionary Funding	Environmental Protection Agency Region 10: Pacific Northwest
Partners for Fish and Wildlife Program Puget Sound Program National Fish Passage Program Cooperative Endangered Species Conservation Fund North American Wetlands Conservation Act Grants Program	U.S. Fish and Wildlife Service
Section 206 Aquatic Ecosystem Restoration Projects Basinwide Restoration New Starts General Investigation	U.S. Army Corps of Engineers
City Fish Passage Barrier Removal and Habitat Restoration Grant Program	Washington Department of Transportation
Family Forest Fish Passage Program Forest Riparian Easement Program	Washington Department of Natural Resources Small Forest Landowner Office
Matching Aid to Restore State Habitat (MARSH) program	Ducks Unlimited
Embrace-A-Stream	Trout Unlimited

6.3 MONITORING AND ADAPTIVE MANAGEMENT STRATEGIES

The SMP guidelines for restoration planning state that local programs should "…appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals" (WAC 173-26-201(2)(f)). Monitoring of the progress of any restoration plan is an important step in documenting progress and managing change in the shoreline environment. Phase 3 of the SMP guidelines restoration framework (based on Palmer et al, 2005) provides a general roadmap for assessing restoration actions and revising the approach to meeting restoration goals. It includes the following objectives:

- Adaptively manage restoration projects;
- Monitor post-restoration conditions; and
- Use monitoring and maintenance results to inform future restoration activities.

As defined by Salafsky et al. (2001), adaptive management is "the integration of design, management, and monitoring to systematically test assumptions in order to adapt and learn." Testing assumptions involves first thinking about the situation at a specific location and developing a specific set of assumptions about what is occurring at that site and what actions one might be able to use to affect these events. Restoration practitioners can then implement these actions and monitor the actual results to see how they compare to the ones predicted by the set of assumptions.

Adaptation, in turn, is about taking action to improve a project based on the results of monitoring (Salafsky et al., 2001). Adaptation involves changing assumptions and interventions to respond to new information obtained through monitoring efforts.

Learning is an additional important component of adaptive management (Salafsky et al., 2001). Learning is about systematically documenting the process of restoration and the results achieved, in order to prevent the repetition of mistakes in the future. Others in the conservation community can benefit from this information, as they can design and manage better projects and avoid some of the hazards and perils of previous efforts that were well documented by practitioners.

The City of Shelton plans to review shoreline processes and functions at the time of periodic SMP updates to, at a minimum, validate the effectiveness of the SMP. This review will 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 must result in "no net loss" of shoreline ecological resources. If reviews demonstrate that this standard has not been met, the City of Shelton will be required to take corrective actions. The goal for restoration is to achieve a net improvement of shoreline resources. The cumulative effect of restoration over the time between reviews will 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 resources.

Through an adaptive management approach, the City will improve the effectiveness of restoration efforts through better coordination of projects, monitoring of restoration success, and expenditure of funds and effort. The City anticipates that needs for additional information about shoreline processes and restoration opportunities will continue to arise as part of this process. Identifying these data gaps and implementing measures to collect the information will be key to the success of restoration in the City.

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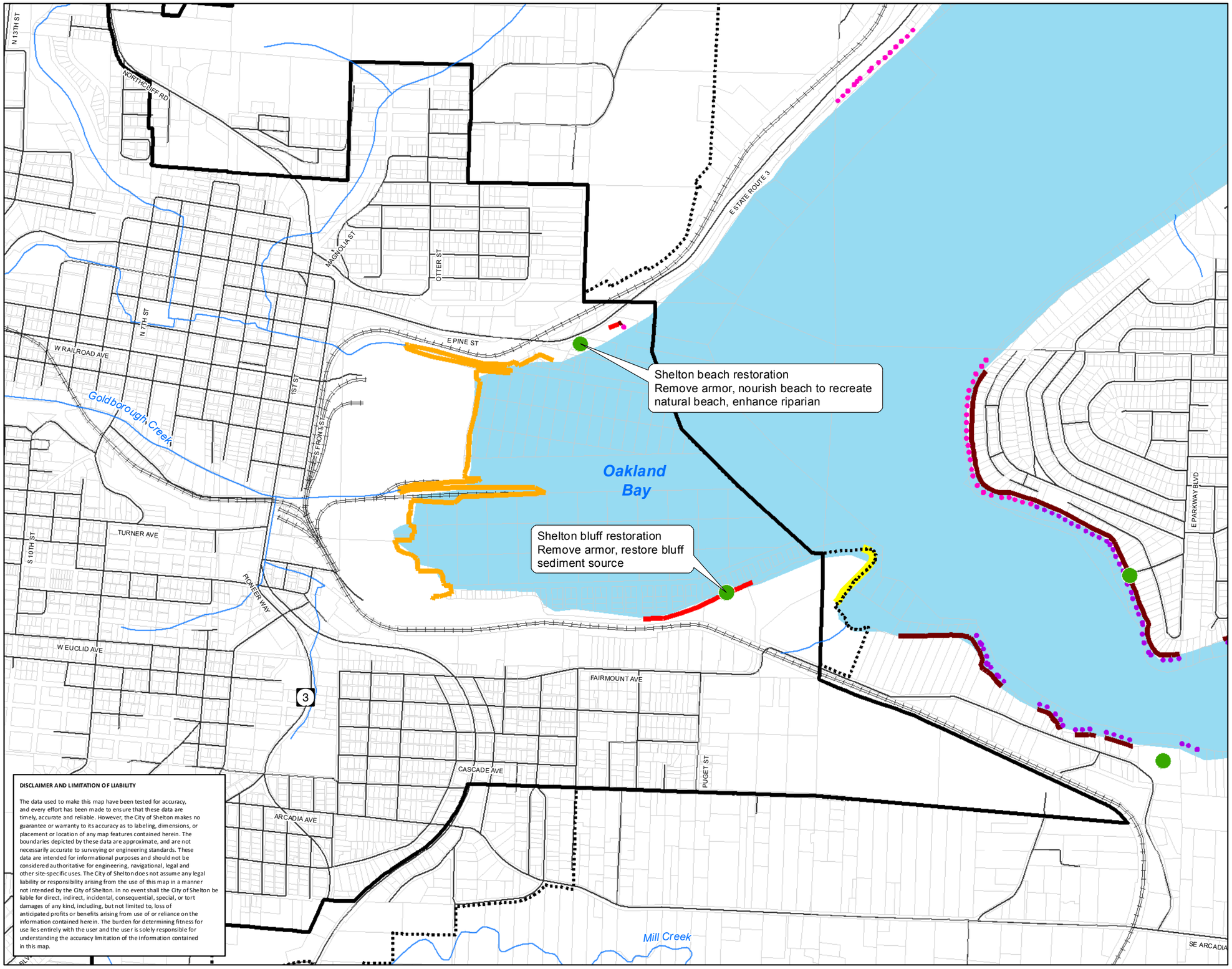
Appendix A

Restoration Plan Map



Legend

Recommended Protection & Restoration Strategies

Process, Strategy

Sediment Supply (SS)

- SS, Enhance High
- SS, Enhance
- SS, Protect, Bluff-backed beach
- SS, Restore High
- SS, Restore

Tidal Flow (TF)

- TF, Enhance High
- Restoration Opportunities

- City Limits
- Urban Growth Boundary
- Streams
- Parcels

NOTE: The City is pre-designating shorelines within its adopted Urban Growth Area (UGA). Until annexation, development in these areas will continue to be regulated by the Mason County Shoreline Master Program (SMP).

This map is intended for planning purposes only. The map depicts the approximate location and extent of "shorelines of the state" based on the following elements: the ordinary high water mark (OWHM), a 200 foot buffer of the OHWM, the adopted FEMA floodplain, and potentially associated wetlands. The actual extent of the shoreline jurisdiction will require a site-specific evaluation to identify the

SMA Grant Agreement No. G1100005
Task 2.3

Coordinate System: State Plane NAD1983 (Ft)
Washington South FIPS 4602

NOTE: Map data shown here are the property of the sources listed below. Inacuracies may exist, and ESA implies no warranties or guarantees regarding any aspect of data depiction.

Data Sources: City of Shelton, 2012; Coastal Geologic Services, 2012; ESA, 2011; Mason County, 2011 (2010); Ecology, 2009; PSNERP (Cereghino et al), 2012.

0 0.0425 0.085 0.17 Miles

N

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Restoration Plan

Map 1

Protection & Restoration Strategies Recommendations: Marine Shorelines

City of Shelton
Shoreline Master Program
March 2013

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