

STEVENSON SHORELINE MASTER PROGRAM



City of Stevenson Shoreline Restoration Plan

December 2018

Ecology Grant # G1200-044

Tasks 4.1



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Acknowledgements

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Chapter 1 – Introduction

1.1 Title

This document shall be known and may be cited as the 2018 Stevenson Shoreline Restoration Plan (Restoration Plan or RP).

1.2 Adoption Authority & Plan Context

This restoration plan was prepared as part of the City of Stevenson (City) Comprehensive Shoreline Master Program (SMP) update. The City's SMP was first adopted in June 1974 and was revised in August 1975. The current program does not include a restoration plan element as is now required in order to comply with the Washington State Shoreline Management Act (SMA), Revised Code of Washington (RCW) 90.58, and the SMP Guidelines, Washington Administrative Code (WAC) 173.26.

Included within the updated SMP are the policies and regulations that govern the use and development of the City's shorelines. Some projects require compensatory mitigation to offset unavoidable impacts, however research has shown that even the best designed and implemented mitigation projects are subject to some degree of failure. Further, it has been shown that existing legally allowed and previously permitted shoreline use and development, as well as exempt and unregulated shoreline activities often have incremental, unmitigated impacts that result in degraded shoreline conditions. Therefore, the SMP is required to include a "real and meaningful" strategy to restore impaired shoreline ecological functions. This restoration plan is the City's strategy.

This strategy is adopted under the authority granted by the Shoreline Management Act of 1971 embodied in the RCW Chapter 90.58, and is adopted in compliance with the Shoreline Master Program Guidelines contained in WAC 173-26.

This Restoration Plan is not proposed for inclusion as regulatory text or as part of the Stevenson Comprehensive Plan or the Stevenson Municipal Code. However, the City's SMP indicates that degraded areas should be restored in accordance with this restoration plan, and the content of this plan will serve as a useful reference during SMP implementation.

1.3 Purpose & Goal

Generally speaking, shoreline and waterbody restoration is defined as returning an area to a previous condition by improving its current ecological conditions. The SMA defines restoration as follows:

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

1.3.1 Plan Purpose

The purpose of this plan is to identify restorative actions to address impaired ecological processes and functions. Although many of the opportunities for restoration activities described in this plan affect

private property, it is not the intention of the City to require or commit private property owners to carrying out those restoration activities. Instead, this is a facilitative plan of the City which will support restoration actions whenever willing collaborations with or between landowners exist. Additionally, private landowners who are required to provide mitigation for development-related impacts may choose to implement the actions noted in this plan as a way of meeting those mitigation obligations.

1.3.2 Restoration Goal

In accordance with the SMP guidelines (WAC 173-26-201(2)(f)), the City has established the following as the goal of this restoration plan:

Voluntary actions and public/private partnerships successfully restore, reestablish, or otherwise improve shoreline ecological functions. As a result, ecosystem-wide processes are more predictable than in 2018, and Stevenson's shorelines are more capable than ever before of sustaining human investments.

The action plan to achieve this goal is detailed in Chapter 3.

1.3.3 Relationship to Inventory & Characterization Report

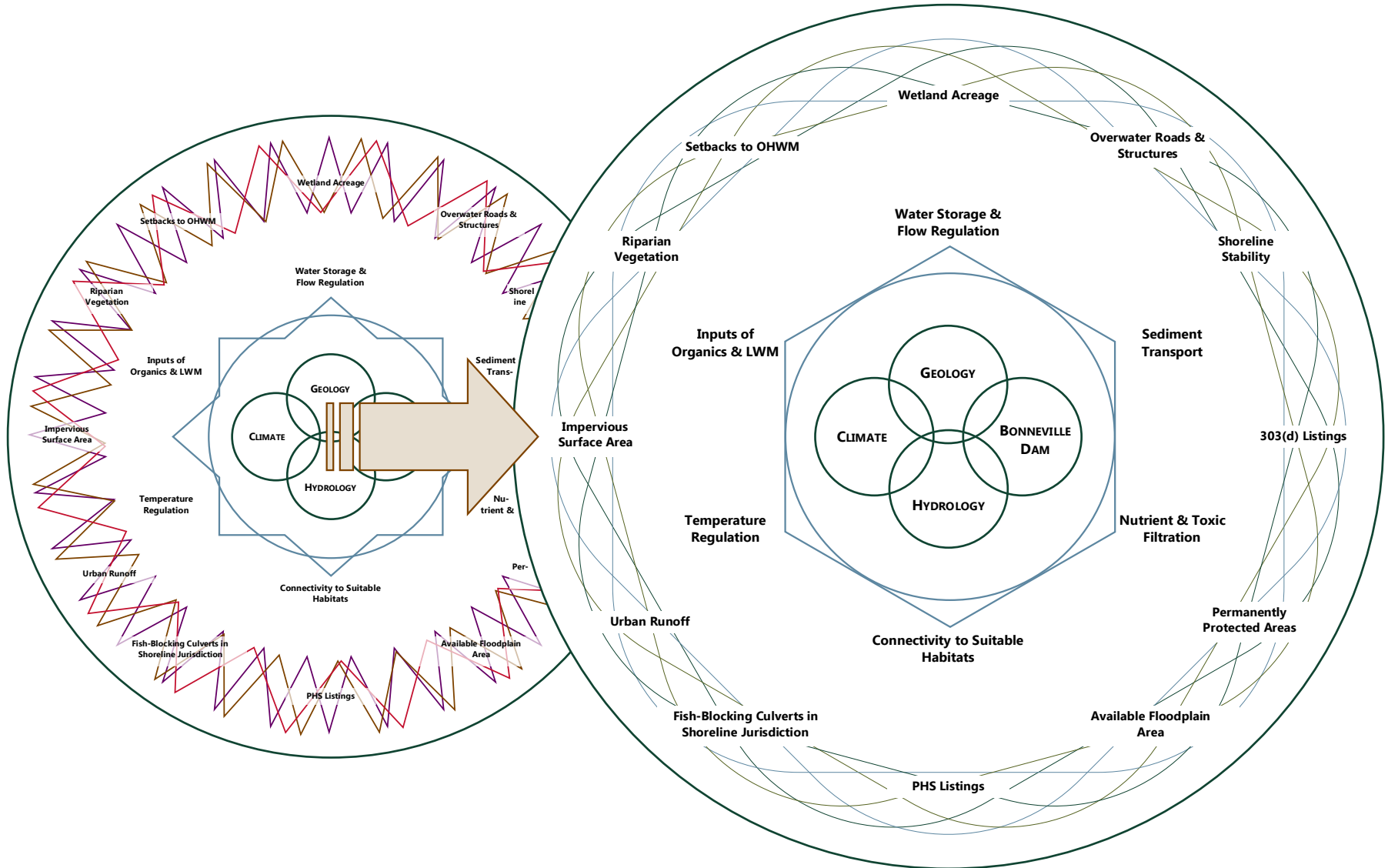
The actions of this plan will rely on the existing condition information provided in the City's Shoreline Inventory & Characterization Report (ICR), which evaluated ecosystem-wide processes, shoreline ecological functions, and the land uses within shoreline jurisdiction. Figure 1-1, below shows how implementation of this Restoration Plan can smooth out uncertainties and fluctuations in the ecological functions of Stevenson's shorelines to increase predictability for uses and developments in those areas. This figure is based on a similar figure from the ICR which more fully describes the 4 ecosystem-wide processes, 6 ecological functions, and 12 reach-scale indicators displayed. ICR Chapter 4 includes descriptions of each indicator, a qualitative assessment of their performance, and identifies degraded areas and aspects of the reach which could be restored and/or enhanced.

1.4 Methodology

SMPs must include goals, policies, and actions to restore impaired shoreline ecological functions. These provisions are to achieve overall improvements in shoreline ecological functions over time, when compared to the functions' status upon adoption of the SMP. The approach to restoration planning may vary significantly among local jurisdictions, depending on the size of the jurisdiction; the extent and condition of the shorelines in the jurisdiction; the availability of grants, volunteer programs, or other tools for restoration; and the nature of the ecological functions to be addressed by restoration planning. The guidelines (WAC 173-26-201(2)(f)) require that shoreline restoration plans address the following six components.

- Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration.
- Establish overall goals and priorities for the restoration of degraded areas and impaired ecological functions.
- Identify existing and ongoing projects and programs that are being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), and which are designed to contribute to local restoration goals.

FIGURE 1-1 RESTORATION PLAN GOAL: IMPROVE ECOLOGICAL FUNCTIONS



Added Predictability of Ecological Functions through Restoration Plan Implementation

Implementation of the Shoreline Restoration Plan will reduce fluctuation in shoreline ecological functions and ecosystem-wide processes. The resulting predictability will better sustain human investments in shoreline areas.

Figure Credit: Ben Shumaker (2018).

- Identify additional projects and programs needed to achieve local restoration goals and implementation strategies, including prospective funding sources for the projects and programs.
- Identify timelines and benchmarks for 1) implementing restoration projects and programs and 2) achieving local restoration goals.
- Provide mechanisms or strategies that will ensure 1) the implementation of restoration projects and programs according to plans, and 2) the appropriate review of their effectiveness in meeting the overall restoration goals.

1.4.1 Study Area

The study area for this analysis includes all shoreline areas currently within city limits and the presdesignated shorelines outside of city limits but within the Stevenson Urban Area as defined under the *Columbia River Gorge National Scenic Area Act*. The study area is located in Skamania County, Washington, on the north bank of the Columbia River and contains shorelines associated with Columbia River (a shoreline of statewide significance), Ashes Lake, Rock Cove, and Rock Creek. The City encompasses approximately 1.52 square miles in Water Resource Inventory Area (WRIA) 29 – Wind-White Salmon – and is surrounded by rural residential and forest lands to the east, west and north. The WRIA subbasins where Stevenson’s shoreline is located include Rock Creek and several Columbia River Tributaries. The total land area subject to the proposed SMP is ~185 acres, with only ~100 acres currently within the City’s Shoreline Jurisdiction. The study area of this restoration plan evaluates ~10 miles of shoreline length, with ~6.3 miles of shoreline currently within city jurisdiction.

1.4.2 No Net-Loss & Restoration

Per the SMP Guidelines, “no net loss” means that impacts may occur, but adequate measures are in place within the overall shoreline program to mitigate them such that the post-development conditions are no worse overall than pre-development conditions.

The restoration plan component of the SMP is an acknowledgement that mitigation alone is not enough to prevent loss of ecological functions during land use and development, and that a restoration plan is needed to offset the expected loss of function that will occur from site-specific mitigation and other incremental impacts sustained over time.

The guidelines note 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 shoreline development fully mitigate impacts caused by the proposed project. Although developers 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. Two examples: 1) a park improvement project could be designed to include the removal of invasive species and streambank stabilization. These actions would have the effect of improving conditions over time, which is necessary for achieving no net loss, and 2) new nonwater oriented commercial or industrial mixed-use projects seeking to locate in a Shoreline Environment Designation where they are not preferred must provide a significant public benefit, such as public access or ecological restoration. These proposals can include projects from RP Figure 3-1. Citizens, agencies, and other groups may also elect to implement this plan’s projects purely for the ecological benefits of restoration—irrespective of development activity or mitigation requirements.

Chapter 2 – Existing Conditions

This section includes selected text from the ICR as an overview of the shoreline waterbodies in Stevenson’s shoreline jurisdiction. The following includes a short description and examples of degraded areas and restoration opportunities from each reach. A more complete background is provided in the ICR.

2.1 Summary of Degraded Areas and Restoration Opportunities

RP Figure 2-1: Restoration Opportunities identifies 13 distinct opportunities to restore the ecological functions of Stevenson’s shorelines. These opportunities are based in part on best practices from other communities and in part on the ICR’s list of 73 degraded areas and restoration opportunities within the City’s 7 reaches. Where this figure identifies specific restoration projects, those projects are more fully described by RP Figure 3-1: Restoration Action Plan.

FIGURE 2-1: RESTORATION OPPORTUNITIES		
Opportunity	Restoration Need	Potential Restoration Projects
Bonneville Impoundment & Inundation of Floodplains	<ul style="list-style-type: none"> Decrease channel width-to-depth ratios. Dredge shoreline waterbodies as appropriate, including confluence of Rock Creek and Columbia River. Replace riprap by regrading, use of bio-engineering, implementing measures that improve channel width-to-depth ratios, and removing where not needed. 	<ul style="list-style-type: none"> R.1 – Rock Creek Dredge 2009 R.2 – Rock Creek Drive Bridge Replacement Project
Aggradation in Lower Rock Creek	<ul style="list-style-type: none"> Develop a plan to address input and throughput of sediment entering lower Rock Creek and Rock Cove since the Piper Road Landslide. Decrease channel width-to-depth ratios. Dredge shoreline waterbodies as appropriate, including confluence of Rock Creek and Columbia River. 	<ul style="list-style-type: none"> R.3 – Stevenson Shoreline Restoration & Enhancement Project R.1 – Rock Creek Dredge 2009 R.4 – Rock Cove Rehabilitation Project
Character & Coverage of Riparian Vegetation	<ul style="list-style-type: none"> Increase canopy cover in shoreline areas. Plant trees along shorelines, especially shade-providing trees on the south and west banks of shoreline waterbodies. Plant Oregon White Oak and other species that overhang shoreline waterbodies and provide allochthonous inputs to the aquatic ecosystem. Plant native vegetation to replace existing non-native vegetation and lawns in shoreline areas because of their need for more water, which can contribute to erosion, and fertilizers, which can negatively affect water quality. 	<ul style="list-style-type: none"> R.3 – Stevenson Shoreline Restoration & Enhancement Project R.1 – Rock Creek Dredge 2009
Invasive Aquatic & Riparian Vegetation	<ul style="list-style-type: none"> Partner with and encourage participation in the Skamania County Noxious Weed Control Program Develop projects to eradicate invasive species from shoreline habitats. Identify and remove invasive aquatic species, especially milfoil in Rock Cove and the Columbia River. Identify and remove invasive species, including Himalayan blackberry, reed canary grass, and English Ivy. Replant native trees and shrubs to discourage recolonization of invasives, control erosion, and preserve water quality. 	<ul style="list-style-type: none"> R.4 – Rock Cove Rehabilitation Project R.5 –Milfoil Removal Projects

FIGURE 2-1: RESTORATION OPPORTUNITIES, CONT.

Opportunity	Restoration Need	Potential Restoration Projects
Riprap Armoring of Shorelines	<ul style="list-style-type: none"> • Soften riprap armoring through planting of vegetation. • Replace riprap by regrading, use of bio-engineering, implementing measures that improve channel width-to-depth ratios, and removing where not needed. 	<ul style="list-style-type: none"> • R.3 – Stevenson Shoreline Restoration & Enhancement Project
Fish-Blocking Culverts	<ul style="list-style-type: none"> • Replace culverts to improve fish passage. • Increase habitat diversity. • Identify whether culverts under the railroad and SR 14 eliminate fish passage. 	<ul style="list-style-type: none"> • R.4 – Rock Cove Rehabilitation Project • R.6 – Rock Creek Drive Foster Creek Culvert Replacement • R.7 – SR 14 Kanaka Creek Culvert Replacement
Abandoned, Non-Water-Oriented or Otherwise Inappropriate Shoreline Structures & Development	<ul style="list-style-type: none"> • Replace Rock Creek Drive Bridge with freespan structure. • Remove existing Rock Creek Drive Bridge piers and in stream “tree-catcher structures upstream of bridge. • Remove City-owned house at Vancouver Avenue and Rock Creek. • Remove derelict pilings in Rock Cove and the Columbia River. • Remove sheet pile at Leavens Point. • Remove the abandoned tugboat dock, pilings, and utility building between SR 14 and the BNSF railroad. • Remove abandoned fence, metal strapping, debris, and concrete structures near the County’s Hegewald Mill Site on Rock Cove. • Encourage WSDOT to evaluate replacement of the SR 14 bridge over Rock Creek. • Develop programs to identify and upgrade or remove shoreline structures that are degrading local habitats. 	<ul style="list-style-type: none"> • R.2 – Rock Creek Drive Bridge Replacement Project • R.3 – Stevenson Shoreline Restoration & Enhancement Project • R.4 – Rock Cove Rehabilitation Project • R.8 – Vancouver Avenue House Removal • R.9 – Old Hegewald Mill Site Redevelopment Project • R.10 – Willing Partner Database Project
Public Awareness of Restoration Needs	<ul style="list-style-type: none"> • Educate homeowners on low-impact development practices, including stormwater control, for shoreline properties. • Educate property owners on the benefits of trees and native vegetation in shoreline areas. • Educate land owners on the impacts of lawn chemicals/fertilizers. • Educate property owners on the impacts of flowage easements maintained by the USACE. • Encourage participation in the Skamania County Master Gardeners training offered by Oregon State University-Hood River and Washington State University-Vancouver. • Educate boaters on best boating practices to minimize habitat disruption/damage and water contamination. • Encourage participation by utility providers in the optional memorandum of understanding (MOU) process for utility maintenance exemptions. 	<ul style="list-style-type: none"> • R.11 – CAO Utility Maintenance Exemption Program • R.10 – Willing Partner Database Project
Data Gaps	<ul style="list-style-type: none"> • Address gaps that hinder identification of site-specific restoration needs and opportunities. • Identify and assess the quality of priority habitats and the primary constituent elements of critical habitat for species protected by state and federal law. • Delineate and rate wetlands in shoreline jurisdiction in advance of development proposals. • Encourage a statewide or regionwide clearinghouse to curate wetland reports and datasheets. • Ensure restoration project data and information are fully integrated and tracked in LCFRB’s SalmonPORT database. • Identify and evaluate hyporheic zones in shoreline jurisdiction. • Identify sources of pollutants (e.g., stormwater runoff) and develop restoration projects to address these sources. 	<ul style="list-style-type: none"> • R.12 – State Wetland Clearinghouse •

FIGURE 2-1: RESTORATION OPPORTUNITIES, CONT.		
Opportunity	Restoration Need	Potential Restoration Projects
Active Shoreline Erosion along Port Holdings	<ul style="list-style-type: none"> • Arrest erosion. • Stabilize land to prevent loss of shoreline development/entry of pollutants. • Vegetate with native species appropriate to the multi-use urban waterfront. 	<ul style="list-style-type: none"> • R.3 – Stevenson Shoreline Restoration & Enhancement Project • R.1 – Rock Creek Dredge 2009
Ecosystem-Wide Water Quality Concerns	<ul style="list-style-type: none"> • Develop public stormwater treatment infrastructure to treat water drained from the residential core of the city. • Promote the replacement of paved parking areas within shoreline jurisdiction with pervious pavement or addition of stormwater treatment landscaping at a ratio similar to SMC 17.35.130(B)(4) through incentives such as grants or development fee reductions. • Promote retrofitting existing shoreline development with landscaping, rain gardens, and other stormwater improvement measures. 	<ul style="list-style-type: none"> • R.13 – Vancouver Avenue Stormwater Outfall Replacement Project • R.14 – Incentive-Based Planning Fee Schedule
Water Quantity & Quality related to Landslides along Rock Creek	<ul style="list-style-type: none"> • Reduce stormwater runoff, especially in sensitive areas (steep, erodible slopes). • Reduce sediment accumulation. • Improve channel stability and stability of the Piper Road Landslide within the shoreline area. • Restore natural rates of erosion and mass wasting within river corridors. • Replant heavily cut forested areas. • Replant/enhance riparian vegetation to improve sediment sorting and channel stability. • Place LWM to enhance cover, pool formation, bank stability, and sediment sorting. 	<ul style="list-style-type: none"> • R.1 – Rock Creek Dredge 2009
Habitat Quality for Salmonid Species in Rock Creek	<ul style="list-style-type: none"> • Improve fish passage. • Reduce sediment accumulation. • Increase habitat diversity. • Improve stream flow. • Ameliorate high water temperatures. • Improve channel stability. • Reduce effective stormwater runoff. • Place LWM to enhance cover, pool formation, bank stability, and sediment sorting. • Decrease channel width-to-depth ratios. • Enhance coniferous riparian vegetation to improve sediment sorting and channel stability. 	<ul style="list-style-type: none"> • R.1 – Rock Creek Dredge 2009 • R.13 – Vancouver Avenue Stormwater Outfall Replacement Project

2.2 Assessment of Individual Reaches

2.2.1 Columbia River Reach 1 – East Urban Area

The physical shoreline of Columbia River Reach 1 is located entirely within Skamania County and east of the City’s downtown waterfront. However, some small areas of shorelands and 2 associated wetlands from this reach extend into inside city limits. The shorelands occur along the Kanaka Creek Underpass road, and the wetlands are located on the north side of SR 14, affecting 3 properties having commercial, stormwater utility, and residential uses. Beyond these areas, the City has elected to predesignate the shorelines of this reach that are located outside existing City boundaries. In total, this comprises~5,555 linear feet of Columbia River shoreline and 256 acres of shoreline jurisdiction area,

26.1 acres of which are shorelands above the OHWM. The reach starts at the eastern urban growth boundary line at Nelson Creek and ends downstream at the eastern city limits and Kanaka Creek. This reach is a shoreline of statewide significance.

FIGURE 2-2 EAST URBAN AREA DEGRADATION & RESTORATION OPPORTUNITIES



Columbia River Reach 1 Degradation & Restoration Opportunities

Differing culvert sizes & elevations, Riprap slopes, and Invasive species along the SR 14/BNSF railroad berm

Photo Credits: Ben Shumaker (2013).

The degraded areas and restoration opportunities identified in this reach include:

1. Bonneville impoundment of the Columbia River and inundation of floodplains.
2. Character and coverage of riparian vegetation.
3. Rip rap armoring of shorelines (BNSF/SR 14 berm).
4. Culverts (railroad/highway berm and Lutheran Church Road).
5. Unknown character of PHS listings.
6. Unknown character and functions of wetlands.
7. Ecosystem-wide water quality concerns.
8. Proximity of non-water-oriented and/or abandoned structures to OHWM.
9. Quantity & unknown quality of stormwater runoff.

2.2.2 Columbia River Reach 2 – Downtown Waterfront

Columbia River Reach 2 is located in the city and includes the downtown waterfront and ~4,175 linear feet of Columbia River shoreline. The reach starts at the eastern limits of the city at Kanaka Creek, and ends downstream at its western limits on the Columbia River, at the center of the BNSF railroad bridge over Rock Creek. There are 222 acres of total land and water area in this reach and 35 acres of land above the OHWM.

FIGURE 2-3 DOWNTOWN WATERFRONT DEGRADATION & RESTORATION OPPORTUNITIES



Columbia River Reach 2 Degradation & Restoration Opportunities

Sheetpile, active erosion, and staging along the Port of Skamania's Stevenson Shoreline Restoration & Enhancement Project

Photo Credits: John McSherry (2010, 2012), Ben Shumaker (2015, 2018).

The degraded areas and restoration opportunities identified in this reach include:

1. Bonneville impoundment of the Columbia River and inundation of floodplains.
2. Aggradation in lower Rock Creek.
3. Character and coverage of riparian vegetation.
4. Rip rap armoring of shorelines.
5. Active shoreline erosion along Port holdings.
6. Culverts (Kanaka Creek).
7. Unknown character of PHS listings.
8. Unknown character and functions of wetland.
9. Ecosystem-wide water quality concerns.
10. Paved coverage (Cascade Avenue, Kanaka Creek Underpass, and parking areas).
11. Proximity of non-water-oriented and/or abandoned structures to OHWM.
12. Sheet pile at Leavens Point.
13. Abandoned pilings.
14. Quantity & unknown quality of stormwater runoff.

2.2.3 Columbia River Reach 3 – West Urban Area

Columbia River Reach 3 is located south of Rock Cove and west of the downtown waterfront. It includes ~8,000 linear feet of the Columbia River shoreline, and 396 acres of predesignated shoreline area. Only 34 acres of this reach are shorelands located above the OHWM. The reach is located outside the city limits and begins at the western boundary of Columbia River Reach 2 at the centerline of Rock Creek and ends downstream at the eastern boundary of Ashes Lake. The reach includes the full right-of-way for SR 14, the BNSF railroad, and privately owned properties. This reach is a shoreline of statewide significance.

FIGURE 2-4 WEST URBAN AREA DEGRADATION & RESTORATION OPPORTUNITIES



Columbia River Reach 3 Degradation & Restoration Opportunities

Derelict piles, riprap slopes & invasive species on the SR 14/BNSF rail road berm. Former industrial development.

Photo Credits: Ben Shumaker (2013) Washington Department of Ecology (2007).

The degraded areas and restoration opportunities identified in this reach include:

1. Bonneville impoundment of the Columbia River and inundation of floodplains.
2. Aggradation in lower Rock Creek.
3. Character and coverage of riparian vegetation.
4. Rip rap armoring of shorelines.
5. Unknown character of PHS listings.
6. Ecosystem-wide water quality concerns.

7. Paved coverage (roads and former industrial site).
8. Proximity of non-water-oriented and/or abandoned structures to OHWM.
9. Abandoned pilings.
10. Quantity & unknown quality of stormwater runoff.

2.2.4 Rock Creek Reach 1

Rock Creek Reach 1 includes the shoreline jurisdictional area associated with Rock Creek within the City's boundaries. On the east side of this stream, this reach covers the area within city limits from the approximate extension of Lasher Street downstream to the BNSF railroad trestle. This reach also runs along the west/south side of the stream from Ryan Allen Road at the upstream end to the BNSF railroad trestle at the downstream end. The southwestern boundary of this reach at the Rock Cove reach is hard to pinpoint, running southward over the Creek's deltaic deposits toward the trestle. This reach includes ~10,375 linear feet of shoreline, 44 acres of shorelands, and 4 acres of water within shoreline jurisdiction. This reach is not a shoreline of statewide significance.

FIGURE 2-5 ROCK CREEK REACH 1 DEGRADATION & RESTORATION OPPORTUNITIES



Figure 4.4-3 Potential Restoration Opportunities, Rock Creek Reach 1

Untreated stormwater outfall & abandoned residence. Rock Creek Drive bridge & protective pilings. Abandoned tug boat dock.

Photo Credits: Ben Shumaker (2013, 2018)

The degraded areas and restoration opportunities identified in this reach include:

1. Bonneville impoundment of the Columbia River and inundation of floodplains.
2. Aggradation in lower Rock Creek.
3. Shoreline instability near the Piper Road Landslide.
4. Character and coverage of riparian vegetation (lower Rock Creek).
5. Rip rap armoring of shorelines.
6. Presence of piers in Rock Creek for the SR 14 and Rock Creek Drive bridges.
7. Unknown character of PHS listings.
8. Ecosystem-wide water quality concerns.
9. Paved coverage (roads and parking areas).
10. Proximity of non-water-oriented and/or abandoned structures to OHWM (abandoned residential and former transportation structures).
11. Abandoned pilings.
12. Quantity & unknown quality of stormwater runoff.
13. Quality of stormwater entering from Vancouver Avenue stormwater outfall.

2.2.5 Rock Creek Reach 2

Rock Creek Reach 2 includes shoreline jurisdictional area associated with the north/east bank of Rock Creek in the unincorporated Urban Area. This includes the area ~5,325 linear feet from the City

boundary at about Lasher Street upstream to the urban area boundary just north of Ryan Allen Road. The reach includes 30 acres of land and 7 acres of water. The City is choosing to pre-designate this reach in preparation for future annexation. This reach is not a shoreline of statewide significance.

FIGURE 2-6 ROCK CREEK REACH 2 DEGRADATION & RESTORATION OPPORTUNITIES



Rock Creek Reach 2 Degradation & Restoration Opportunities

Scarp of Piper Road Landslide at Rock Creek's First Falls & resulting aggradation in Lower Rock Creek.

Photo Credits: Washington Department of Transportation (2007), Washington Department of Ecology (2007)

The degraded areas and restoration opportunities identified in this reach include:

1. Bonneville impoundment of the Columbia River and inundation of floodplains.
2. Aggradation in lower Rock Creek.
3. Shoreline instability near the Piper Road Landslide.
4. Character and coverage of riparian vegetation (Piper Road Landslide).
5. Unknown character of PHS listings.
6. Proximity of non-water-oriented and/or abandoned structures to OHWM.
7. Quantity & unknown quality of stormwater runoff.

2.2.6 Rock Cove

The Rock Cove reach includes the waterbody otherwise known as the Stevenson Mill Pond, Stevenson Lake, Rock Creek Pond, or Hegewald Mill Pond. Rock Cove is located in the city, is connected to Rock Creek Reach 1 at its mouth, and is to the north of Columbia River Reach 3, separated by the highway/railroad berm. The reach includes all of Rock Cove, the northern fill slope of SR 14, and western portions of the Skamania County Fairgrounds, the Columbia Gorge Interpretive Center, other County-owned properties, and three residential properties. Including the islands in the cove, there are ~18,800 linear feet of shoreline, 69 acres of water, and 35 acres of shorelands.

FIGURE 2-7 ROCK COVE DEGRADATION & RESTORATION OPPORTUNITIES



Rock Cove Degradation & Restoration Opportunities

Pilings, fences, & dredge basins provide visible relics of Rock Cove's industrial past.

Photo Credits: BergerABAM (2015), Ben Shumaker (2013), Washington Department of Ecology (2007)

The degraded areas and restoration opportunities identified in this reach include:

1. Bonneville impoundment of the Columbia River and inundation of floodplains.
2. Aggradation in lower Rock Creek.
3. Character and coverage of riparian vegetation.
4. Rip rap armoring of shorelines.
5. Culverts (Foster Creek).
6. Unknown character of PHS listings.
7. Unknown character and functions of wetland.
8. Ecosystem-wide water quality concerns.
9. Paved coverage (roads and parking areas).
10. Proximity of non-water-oriented and/or abandoned structures to OHWM (abandoned former industrial fences, metal strapping and debris, and concrete structures).
11. Abandoned pilings.
12. Quantity & unknown quality of stormwater runoff.

2.2.7 Ashes Lake

The Ashes Lake reach includes only the extreme eastern portion of Ashes Lake, two road rights-of-way (Ash Lake and Mallicott), and small portions of privately owned properties. This reach is located within the Stevenson Urban Area, west of Skamania Lodge and north of SR 14, and is being pre-designated. The Columbia River frontage south of the highway and railroad is part of Columbia River Reach #3, previously described. The shoreline jurisdictional area of this reach includes all lands extending landward for 200 feet from the OHWM, including floodplains within 200 feet. This reach is not a shoreline of statewide significance.

The degraded areas and restoration opportunities identified in this reach include:

1. Bonneville impoundment of the Columbia River and inundation of floodplains.
2. Character and coverage of riparian vegetation.
3. Rip rap armoring of shorelines.
4. Unknown character of PHS listings.
5. Unknown character and functions of wetland.
6. Paved coverage (roads).
7. Proximity of non-water-oriented and/or abandoned structures to OHWM.
8. Quantity & unknown quality of stormwater runoff.

Chapter 3 – Restoration Actions

This Chapter identifies specific actions which can be taken to restore the ecological functions of Stevenson’s shorelines. The restoration projects described in RP Figure 3-1 address the issues summarized in RP Figure 2-1 and are recommended as the primary means to reach the goal of this Restoration Plan and ensure “no net loss” of shoreline ecological functions in Stevenson.

3.1 Action Plan Matrix

The action plan matrix provided in RP Figure 3-1 attempts to address the primary “what, why, when, who, and how” questions associated with projects. Because these projects are at different stages in their conceptual development, some cells in the matrix are left blank. Such projects require further investigation and analysis in order to assess their costs, benefits, and overall feasibility prior to their implementation.

The projects are listed in a more-or-less random order. The voluntary nature of restoration engenders frequent reprioritization of projects as needs change and opportunities arise. Furthermore, because many of the projects were compiled from the studies and reports of outside agencies, those partners (listed in Restoration Plan Chapter 4) should be consulted when restoration projects are actualized. The Lower Columbia Fish Recovery Board (LCFRB) is a particularly noteworthy partner based on the organizational and funding activities they perform.

In addition to the restoration actions listed in this document, other potential restoration projects can be found in reports released by partner organizations. For example, the LCFRB identifies restoration opportunities through their SalmonPORT database and in their detailed implementation plans that have already been funded and/or completed.

3.2 Funding the Actions

Shoreline restoration in Stevenson depends almost entirely on grant funding, and its availability is unpredictable, varying from year to year. Many of the proposed restoration projects will require outside funding through federal or state grants along with local, private, or non-profit matching funds. Projects may be funded in multiple phases, with different funding sources appropriate for each phase. Where the action plan identifies potential sources of funding, Appendix B can be used as a more complete--but still not exhaustive--discussion of the funding programs.

FIGURE 3-1 RESTORATION ACTION PLAN

R.0 – Unnamed Projects							
Description	There are many restoration needs identified in RP Figure 2-1 which are not associated with a specific project in this table. This placeholder is intended to address this gap. When new restoration projects are conceptualized, they should be given a provisional title/number under this heading. They should be supported by the City, and their benefits should be tracked for monitoring and amendment purposes.			Priority	<input type="checkbox"/> High <input type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input type="checkbox"/> Planning
Functions Improved	<input type="checkbox"/> Sediment Transport <input type="checkbox"/> Nutrient & Toxic Filtration <input type="checkbox"/> Temperature Regulation	<input type="checkbox"/> Water Storage & Flow Regulation <input type="checkbox"/> Input of Organics & LWM <input type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3	<input type="checkbox"/> AL <input type="checkbox"/> RC1 <input type="checkbox"/> RC2 <input type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029
Cost	<input type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	Unknown	Responsibility	Any	Coordinating Parties	Unknown
Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	Lack of specific references in this plan may fail to 1) inspire projects that address restoration needs or 2) qualify the project for some grant sources. The Rock Cove Environmental Assessment & Comprehensive Plan (1997) could address those failures for that waterbody.				
R.1 – Rock Creek Dredge 2009							
Description	This project addresses the sediment management needs of Lower Rock Creek since the Piper Road Landslide.			Priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	Readiness	<input checked="" type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input type="checkbox"/> Conceptual
Functions Improved	<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input checked="" type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3	<input type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input checked="" type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040
Cost	<input checked="" type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	DOE, EDA, WSDOT	Responsibility		Coordinating Parties	

Status		<input type="checkbox"/> Complete <input checked="" type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/Additional Information		See City File SHOR2017-01, County File SEP-10-09, Corps File NWS-2007-192 Coordinate with projects R.2, R.3.	
R.2 – Rock Creek Drive Bridge Replacement Project						
Description		This project would replace the 1920's era bridge with a freespan structure. The bridge was built prior to construction of the Bonneville Dam and has greatly lost the original design's freeboard capacity to convey floodwaters. The bridge decking lacks stormwater treatment facilities, and the in-stream piers supporting the bridge interfere with fish passage and form a hazard for log jams. Their removal would make the upstream "log catchers" obsolete.			Priority	
					<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	
					Readiness	
					<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual	
Functions Improved		<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected		<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3
					<input type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input checked="" type="checkbox"/> RC2 <input type="checkbox"/> RCo	
					Timeframe	
					<input type="checkbox"/> Ongoing <input type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input checked="" type="checkbox"/> Complete by 2040	
Cost		<input checked="" type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source		DOE, WSDOT	
					Responsibility	
					City	
					Coordinating Parties	
					Utility companies, Skamania County, adjacent landowners	
Status		<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/Additional Information		Early conceptual studies consider relocation of bridge ~200' to the north, ROW required. Coordinate with projects R.1, R.4.	
R.3 – Stevenson Shoreline Restoration & Enhancement Project						
Description		Developed as a mitigation project as part of R.1 Rock Creek Dredge 2009, this project addresses several restoration needs along the Columbia River and includes improvement of physical public access at Leavens Point.			Priority	
					<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	
					Readiness	
					<input checked="" type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input type="checkbox"/> Conceptual	
Functions Improved		<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected		<input type="checkbox"/> CR1 <input checked="" type="checkbox"/> CR2 <input type="checkbox"/> CR3
					<input type="checkbox"/> AL <input type="checkbox"/> RC1 <input type="checkbox"/> RC2 <input type="checkbox"/> RCo	
					Timeframe	
					<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029	

							<input type="checkbox"/> Complete by 2040
Cost	<input checked="" type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source		Responsibility		Coordinating Parties	
Status	<input type="checkbox"/> Complete <input checked="" type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/Additional Information	See City File SHOR2017-01, County File SEP-10-09, Corps File NWS-2007-192 Coordinate with project R.1.				
R.4 – Rock Cove Rehabilitation							
Description	Excess sedimentation from the Piper Road Landslide has altered the natural flushing ability of Rock Cove. The shallow waters facilitate higher temperatures and Invasive aquatic vegetation. Derelict creosote pilings exist in several areas. Substrates in the Cove include metal strapping and other debris from its industrial past.			Priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual
Functions Improved	<input checked="" type="checkbox"/> Sediment Transport <input type="checkbox"/> Nutrient & Toxic Filtration <input checked="" type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3	<input type="checkbox"/> AL <input type="checkbox"/> RC1 <input type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input type="checkbox"/> Complete by 2021 <input checked="" type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040
Cost	<input checked="" type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	DOE, WDFW, RCO	Responsibility	Skamania County	Coordinating Parties	Interpretive Center
Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/Additional Information	Coordinate with projects R.5, R.6, R.9				
R.5 – Milfoil Removal Projects							
Description	Eurasian milfoil is present in the Columbia River and Rock Cove. The removal of this invasive species would occur in one or more phases and ensure the habitat and water quality of these waterbodies are improved.			Priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual
Functions Improved	<input type="checkbox"/> Sediment Transport	<input type="checkbox"/> Water Storage & Flow Regulation	Reaches Affected	<input checked="" type="checkbox"/> CR1 <input checked="" type="checkbox"/> CR2 <input checked="" type="checkbox"/> CR3	<input type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input type="checkbox"/> RC2	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021

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	<input type="checkbox"/> Nutrient & Toxic Filtration	<input checked="" type="checkbox"/> Input of Organics & LWM		<input checked="" type="checkbox"/> RCo		<input type="checkbox"/> Complete by 2029
	<input type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Connectivity to Suitable Habitat				<input type="checkbox"/> Complete by 2040
Cost	<input type="checkbox"/> High (>\$500k) <input checked="" type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	County	Responsibility	County Noxious Weed Board	Coordinating Parties City, land owners
Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/Additional Information	Unknown			
R.6 – Foster Creek Culvert Replacement Project.						
Description	The culverts for Foster Creek at Rock Creek Drive and Atwell have been characterized by WDFW staff as some of the greatest barriers in Stevenson. Their replacement would expand spawning and rearing habitat for anadromous species.			Priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	Readiness <input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual
Functions Improved	<input type="checkbox"/> Sediment Transport <input type="checkbox"/> Nutrient & Toxic Filtration <input type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3	<input type="checkbox"/> AL <input type="checkbox"/> RC1 <input type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe <input type="checkbox"/> Ongoing <input type="checkbox"/> Complete by 2021 <input checked="" type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040
Cost	<input type="checkbox"/> High (>\$500k) <input checked="" type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	Unknown	Responsibility	City	Coordinating Parties Unknown
Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/Additional Information	Some coordination with the City's project to construct a new fire station in this area could help facilitate the project.			
R.7 – SR 14 Kanaka Creek Culvert Replacement Project						
Description	Fish-friendly passage was added to Kanaka Creek during the 1 st Street Couplet project, but the passage—and the adjacent passage under 2 nd Street—are included as barriers in the WDFW database.			Priority	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Readiness <input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual
Functions Improved	<input type="checkbox"/> Sediment Transport	<input checked="" type="checkbox"/> Water Storage & Flow Regulation	Reaches Affected	<input checked="" type="checkbox"/> CR1 <input checked="" type="checkbox"/> CR2	<input type="checkbox"/> AL <input type="checkbox"/> RC1	Timeframe <input type="checkbox"/> Ongoing

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	<input type="checkbox"/> Nutrient & Toxic Filtration	<input type="checkbox"/> Input of Organics & LWM	<input type="checkbox"/> CR3	<input type="checkbox"/> RC2 <input type="checkbox"/> RCo	<input type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input checked="" type="checkbox"/> Complete by 2040		
	<input type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Connectivity to Suitable Habitat					
Cost	<input checked="" type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	Unknown	Responsibility	City/WSDOT	Coordinating Parties	Unknown
Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	Recent significant investments in these roadways by the City and WSDOT limit likelihood of new investment. However, some interest in a round-a-bout has been expressed near these culverts which could help facilitate the project.				
R.8 – Vancouver Avenue House Removal							
Description	The City recently acquired property for potential use as part of the Rock Creek Drive Bridge Replacement. The property contains a single-family home that has been damaged by floodwaters from Rock Creek. This project would demolish the home.			Priority	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Readiness	<input checked="" type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input type="checkbox"/> Conceptual
Functions Improved	<input type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input type="checkbox"/> Input of Organics & LWM <input type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3	<input type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input type="checkbox"/> RC2 <input type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040
Cost	<input type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input checked="" type="checkbox"/> Low (<\$50k)	Funding Source	City	Responsibility	City	Coordinating Parties	Unknown
Status	<input type="checkbox"/> Complete <input checked="" type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	Fire department is considering participating in the demolition through its "burn to learn" program". Asbestos abatement is required. Coordinate with projects R.2, R.12.				
R.9 – Old Hegewald Mill Site Redevelopment Project							
Description	Skamania County owns a former mill site on Rock Cove. The County Assessor's Office is actively working to remove barriers to development of this site and facilitate private investment. A recent Phase 1 Environmental Site Assessment did not reveal the need to			Priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Conceptual

<p>proceed with a Phase 2. However, restoration of riparian vegetation and removal of derelict structures & debris associated with the historic use could be undertaken as advanced mitigation for the potential future development</p>							
Functions Improved	<input type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input checked="" type="checkbox"/> Temperature Regulation	<input type="checkbox"/> Water Storage & Flow Regulation <input checked="" type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3	<input type="checkbox"/> AL <input type="checkbox"/> RC1 <input type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040
Cost	<input type="checkbox"/> High (>\$500k) <input checked="" type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	RCO, WSDOT	Responsibility	County	Coordinating Parties	Unknown
Status	<input type="checkbox"/> Complete <input checked="" type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/Additional Information	A visioning project was recently completed for the site that includes recommendations for its design, use, and public access opportunities. Easement for a public pathway is reserved at the top of the bank. The pathway has never been developed. Coordinate with project R.4				
R.10 – Willing Partner Project Database							
Description	Implementation of restoration projects often spans property lines and relies on willing property owners to ensure success. The database envisioned in this project would periodically engage property owners to assess their willingness to participate in proposed projects. This engagement will also serve to educate owners about the City's restoration needs.			Priority	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual
Functions Improved	<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input checked="" type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input checked="" type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input checked="" type="checkbox"/> CR1 <input checked="" type="checkbox"/> CR2 <input checked="" type="checkbox"/> CR3	<input checked="" type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input checked="" type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040
Cost	<input type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input checked="" type="checkbox"/> Low (<\$50k)	Funding Source	Unknown	Responsibility	City	Coordinating Parties	Unknown

Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	Unknown					
R.11 – CAO Utility Maintenance Exemption Program								
Description	SMC 18.13.025 contemplates a program where utility service providers can agree to perform and monitor projects in accordance with defined BMPs. While the program has been in place since 2008, no agreements have ever been put in place.		Priority	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Readiness	<input checked="" type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input type="checkbox"/> Conceptual		
Functions Improved	<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input checked="" type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input checked="" type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input checked="" type="checkbox"/> CR1 <input checked="" type="checkbox"/> CR2 <input checked="" type="checkbox"/> CR3	<input checked="" type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input checked="" type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040	
Cost	<input type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k) <input checked="" type="checkbox"/> Low (<\$50k)	Funding Source	Unknown		Responsibility	Utility providers	Coordinating Parties	City
Status	<input type="checkbox"/> Complete <input checked="" type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	The City Public Works Department is in the process of requesting an MOU under this program.					
R.12 – State Wetland Clearinghouse								
Description	Curation of wetland delineations, ratings, datasheets, and monitoring reports is uncoordinated and/or unavailable. Developing a web-based portal for the submittal and retrieval of these products would assist land owners, prospective buyers, and regulatory agencies.		Priority	<input checked="" type="checkbox"/> High <input type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Conceptual		
Functions Improved	<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input checked="" type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input checked="" type="checkbox"/> Input of Organics & LWM <input checked="" type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input checked="" type="checkbox"/> CR1 <input checked="" type="checkbox"/> CR2 <input checked="" type="checkbox"/> CR3	<input checked="" type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input checked="" type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040	
Cost	<input type="checkbox"/> High (>\$500k) <input type="checkbox"/> Mid (\$50-\$500k)	Funding Source	Unknown		Responsibility	DOE/USACE	Coordinating Parties	Unknown

<input type="checkbox"/> Low (<\$50k)							
Status	<input type="checkbox"/> Complete <input checked="" type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	The City has been actively encouraging this concept for years, and recently DOE began engaging stakeholders on the utility of the concept.				
R.13 – Vancouver Avenue Stormwater Outfall Replacement Project							
Description	The stormwater outfall into Rock Creek at Vancouver Avenue drains a large portion of Stevenson’s residential core. The storm system for this area includes few to no facilities to treat the quality or quantity of water prior to the outfall. Replacing the outfall with a treatment system could occur in the ROW and/or on the adjacent City-owned real property.			Priority	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual
Functions Improved	<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration <input checked="" type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input type="checkbox"/> Input of Organics & LWM <input type="checkbox"/> Connectivity to Suitable Habitat	Reaches Affected	<input type="checkbox"/> CR1 <input type="checkbox"/> CR2 <input type="checkbox"/> CR3	<input type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input type="checkbox"/> RC2 <input type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input type="checkbox"/> Complete by 2021 <input checked="" type="checkbox"/> Complete by 2029 <input type="checkbox"/> Complete by 2040
Cost	<input type="checkbox"/> High (>\$500k) <input checked="" type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	DOE	Responsibility	City	Coordinating Parties	Unknown
Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	Full treatment needs may exceed space available at this site. Up-system treatment may also need to be considered. The location of the treatment facilities needs will depend on the location of the Rock Creek Drive Bridge Replacement Project. Coordinate with projects R.3, R.4.				
R.14 – Incentive-Based Planning Fee Schedule							
Description	The City can encourage implementation of restoration projects by waiving all or some portion of the fees associated with projects that satisfy restoration needs. The specific needs which are deserving, and the specific amount of the incentives offered are details requiring greater analysis.			Priority	<input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Readiness	<input type="checkbox"/> Shovel-Ready <input type="checkbox"/> Design <input type="checkbox"/> Planning <input checked="" type="checkbox"/> Conceptual
Functions Improved	<input checked="" type="checkbox"/> Sediment Transport <input checked="" type="checkbox"/> Nutrient & Toxic Filtration	<input checked="" type="checkbox"/> Water Storage & Flow Regulation <input checked="" type="checkbox"/> Input of Organics & LWM	Reaches Affected	<input checked="" type="checkbox"/> CR1 <input checked="" type="checkbox"/> CR2 <input checked="" type="checkbox"/> CR3	<input checked="" type="checkbox"/> AL <input checked="" type="checkbox"/> RC1 <input checked="" type="checkbox"/> RC2 <input checked="" type="checkbox"/> RCo	Timeframe	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Complete by 2021 <input type="checkbox"/> Complete by 2029

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	<input checked="" type="checkbox"/> Temperature Regulation	<input checked="" type="checkbox"/> Connectivity to Suitable Habitat			<input type="checkbox"/> Complete by 2040
Cost	<input type="checkbox"/> High (>\$500k) <input checked="" type="checkbox"/> Mid (\$50-\$500k) <input type="checkbox"/> Low (<\$50k)	Funding Source	City	Responsibility	City
Status	<input type="checkbox"/> Complete <input type="checkbox"/> Active <input type="checkbox"/> Obsolete <input type="checkbox"/> No Action	Risks/Issues/ Additional Information	Unknown	Coordinating Parties	Unknown

3.3 Obstacles & Challenges

Some obstacles and challenges have been identified in the “Risks/Issues/Additional Information” portion of the matrix, but others also likely lie between the recommended actions and their successful implementation. Common issues that can inder the predictability of implementing restoration projects include, but are not limited to:

- *Funding:* Large-scale restoration projects can be expensive, and their funding is both limited and competitive.
- *Project Permitting:* Obtaining local, state, and federal permits for restoration projects can be time-intensive and discouraging.
- *Climate Change:* Changes in precipitation patterns have the potential to alter the City’s shoreline jurisdiction, processes, and functions dramatically over time. In turn, these changes may affect restoration priorities.
- *Landowner Participation:* Landowners may be unwilling or unable to participate in restoration projects. If necessary, the City could establish additional incentive including tax credits for conservation easements related to permanent preservation.

3.4 Implementation Monitoring

In order to assess its success in achieving no net loss, the City will need to track restoration efforts over time. Efforts should be evaluated according to categories such as those listed below. The matrix anticipates monitoring and assessment of the projects in the final row for each project, but more specific benchmarks can be developed for efforts on a project-by-project basis and through future coordination with restoration partners.

- Number of restoration projects implemented
- Square feet of riparian enhancement
- Square feet of native vegetation planted
- Square feet of noxious weeds removed
- Linear feet of hard shoreline stabilization replaced
- Number of culverts removed or number of miles of stream open to migration
- Square feet of conservation easement/protected area established
- Square feet of wetlands restored in shoreline jurisdiction
- Square feet of stream canopy addition
- Fewer exceedances of water quality criteria as measured in the state water quality assessment
- Square feet of impervious surface removed or untreated runoff treated
- Linear feet of road upgraded or decommissioned

Because monitoring can be both complicated and expensive, the City should coordinate with other agencies that already operate monitoring efforts. The frequency of monitoring will involve periodic review of environmental functions at the time of periodic SMP updates when the effectiveness of the SMP, including the restoration plan, in achieving no net loss of shoreline ecological functions can be assessed. There are several existing databases reporting restoration efforts in the state that the City can utilize to restoration track projects:

- The Lower Columbia Fish Recovery Board (LCFRB) tracks projects related to the recovery of threatened or priority fish populations and/or habitat, including projects that are proposed, active, or completed. LCFRB also provides a map of existing fish passage barriers, including culverts, dams, and fishways, which may prove useful in identifying future opportunities. The City will work with the LCFRB to ensure that projects are tracked in their SalmonPORT database.
- The Washington State Project Information System (PRISM) database tracks proposed and funded projects, and data from PRISM is often integrated in the grant application process.
- The Washington State Conservation Commission's Conservation Practice Data System (CPDS) maintains a database that tracks projects and conservation practices on private lands.

3.5 Summary

This restoration plan supports the City of Stevenson Shoreline Master Program and has been prepared to comply with the SMP guidelines (WAC 173-26-201(2)(f)). The restoration plan 1) identifies degraded areas with impaired functions and the potential for restoration, 2) establishes goals and priorities for restoration, 3) identifies additional projects and programs to achieve restoration goals, 4) identifies timelines and benchmarks for implementing restoration projects and achieving goals, and 5) provides strategies for ensuring project effectiveness.

Appendix A – Potential Restoration Partners

A.1 Overview

Further study, collaboration, identification of restoration projects are needed before a implementation occurs. This appendix provides a list of potential partners that could assist in accomplishing the City's restoration goal.

A.2 Restoration Partners

This plan is intended to be compatible with the restoration goals already developed by other restoration planning entities in the region, including Skamania County, the Underwood Conservation District (UCD), the Lower Columbia Fish Recovery Board (LCFRB), and area tribes. Their activities may be located in the City, or in a watershed beyond the city where the restoration activities will have positive effects on waterbodies that flow into and out of the city. Ongoing restoration planning efforts in the City and surrounding areas through the voluntary collaboration of residents, tribes, NGOs, and local, state, and federal resource agencies may help inform and implement future restoration actions.

The organizations responsible for the existing restoration programs in the City are likely to play a major role in carrying out the restoration efforts described in this plan. These potential partners are identified in Figure 4-1. They are some of the key organizations that have ecological restoration as their primary focus and are actively involved in the restoration and stewardship of the City's freshwater resources. The list, which is not exhaustive, describes the key partners, their mission or area of focus, and some past and current projects that illustrate the role they can play in future restoration activities.

FIGURE A.1 – EXISTING PROGRAMS & POTENTIAL PARTNERS		
Partner Organization	Mission	Restoration Activities
Chinook Nation	Unknown	<ul style="list-style-type: none"> • Unknown
Columbia River Gorge Commission	The mission of the Gorge Commission is to achieve the 2 purposes of the Columbia River Gorge National Scenic Area Act, including 1) protection and enhancement of the scenic, cultural, recreational, and natural resources of the Gorge and 2) support the Gorge economy by encouraging growth in urban areas..	<ul style="list-style-type: none"> • Unknown
Confederated Tribes of the Grand Ronde	The Natural Resources Department of the Grand Ronde serves tribal membership through responsible stewardship of all natural resources important to the cultural identity, self-sufficiency, and sovereignty of current and future generations.	<ul style="list-style-type: none"> • Unknown
Confederated Tribes of the Umatilla Indian Reservation	The mission of the Natural Resources Department is to protect, restore and enhance the First Foods—water, salmon, deer, cous and huckleberry—for the perpetual cultural, economic and sovereign benefit of the CTUIR. They will accomplish that mission using traditional ecological and cultural knowledge and science to inform: 1) population and habitat management goals and actions; and 2) natural resource policies and regulatory mechanisms.	<ul style="list-style-type: none"> • Unknown
Confederated Tribes of Warm Springs	The mission of the Branch of Natural Resources is to plan and execute a balanced direction for the protection, use and enhancement to all tribal natural resources.	<ul style="list-style-type: none"> • Unknown
Cowlitz Indian Tribe	The mission of the Natural Resources Department of the Cowlitz Indian Tribe is to protect, conserve, restore and promote culturally-relevant species and landscapes integral to the unique identity of the Cowlitz People, and to further educate the community and inspire future leaders and participants in this vision.	<ul style="list-style-type: none"> • Otter Creek side channel restoration • Riparian enhancement along the lower main stem of the Lewis River • Abernathy Creek restoration
Lower Columbia Estuary Partnership	The mission of the Lower Columbia Estuary Partnership is to improve the lower Columbia River by protecting and restoring ecosystems and enhancing clean water for current and future generations of fish, wildlife, and people.	<ul style="list-style-type: none"> • Hardy Creek restoration • Pierce Island restoration • Horsetail Creek floodplain restoration

Figure A.1 – Existing Programs & Potential Partners, Cont.		
Partner Organization	Mission	Restoration Activities
Lower Columbia Fish Enhancement Group	This group is one of 14 RFEGs created by the state legislature and is a non-regulatory, non-partisan 501(c)(3) salmon recovery organization. Working within specific watersheds throughout the area (including north and eastern Skamania County), it leverages public funding through landowner partnerships and collaborations with individuals, groups, corporations, tribes, foundations, and agencies.	<ul style="list-style-type: none"> • Hamilton Creek restoration • Lee fish passage project • Hardy Creek fish passage and groundwater investigation design (LCFEG and partners) • Lower Hamilton Creek channel stability and habitat restoration (LCFEG and partners)
Lower Columbia Fish Recovery Board	The LCFRB leads the coordinated implementation of locally-driven salmon recovery and watershed management plans across our region to restore at-risk fish population and ensure we have clean water, healthy forests, working farms, and thriving rural and urban communities into the future. The LCFRB runs the Wind River Work Group, which organizes community stakeholders to develop restoration projects in the Wind River watershed. The LCFRB maintains SalmonPORT, an online tool that tracks restoration projects and opportunities, as well as recovery plan actions. The LCFRB website also provides several restoration and management documents for download.	<ul style="list-style-type: none"> • Wind River Habitat Strategy • Duncan Creek Dam fish passage restoration (LCFRB and partners) • Hardy Creek fish passage and groundwater investigation design (LCFRB and partners) • Lower Hamilton Creek channel stability and habitat restoration (LCFRB and partners)
Mid-Columbia Fisheries Enhancement Group	This group is an RFEG created by the state legislature in 1990. It is a non-regulatory, non-partisan 501(c)(3) salmon recovery organization. Working within specific watersheds throughout the area (including southwest Skamania County), it leverages public funding through landowner partnerships and collaborations with individuals, groups, corporations, tribes, foundations and agencies.	<ul style="list-style-type: none"> • Salmonid recolonization assessment for the White Salmon River (post-Condit Dam removal)
Nez Perce Tribe	The purpose of the Wildlife Division is to restore, perpetuate, enhance, and manage the wildlife and rare plant resources of significance to the <i>Nimiipuu</i> .	<ul style="list-style-type: none"> • Unknown.
Northwest Power and Conservation Council	The NPCC is an interstate compact of Idaho, Montana, Oregon, and Washington. Its mission is to ensure, with public participation, an affordable and reliable energy system while enhancing fish and wildlife. It achieves this through its Columbia River Basin Fish and Wildlife Program, which is funded by the Bonneville Power Administration.	<ul style="list-style-type: none"> • Locally developed subbasin plans
Recovery Implementation Science Team (Pacific Northwest)	NOAA Fisheries initiated a coast-wide process to develop recovery plans for 27 Pacific salmon species listed on the ESA. RIST and the NOAA Fisheries Northwest Regional Office and its Science Center work closely to develop appropriate tasks and priorities for scientific analysis based on input from these groups.	<ul style="list-style-type: none"> • NOAA Fisheries staff are responsible for coordinating with others involved in recovery implementation to ensure that RIST timelines and priorities are consistent with recovery needs.

Figure A.1 – Existing Programs & Potential Partners, Cont.		
Partner Organization	Mission	Restoration Activities
Skamania County Noxious Weed Board	The mission of the Skamania County Noxious Weed Control Program is to serve as responsible stewards of Washington by protecting and preserving the land and resources from the damaging effects of noxious weeds. We aim to uphold, educate and enforce compliance with the state noxious weed laws. It is our goal to focus efforts to educate citizens of Skamania County about noxious weeds and the threat they pose to our environment and economy. We actively work with public agencies and private citizens to control and eradicate listed noxious weeds. We actively seek to form cooperatives and enhance coordination between other counties, agencies and landowners to protect our resources, therefor making a difference in Skamania County.	<ul style="list-style-type: none"> • Unknown
South Gifford Pinchot Collaborative	SGPC works with the Forest Service on projects on its 10-year action plan and forest restoration projects. They advise during the NEPA process and/ or are proactive in moving projects forward by receiving grant funding to work on areas ahead of the Forest Service schedule.	<ul style="list-style-type: none"> • Work in the Woods Workshop – advertising upcoming opportunities for working in the woods; co-sponsored by WSU Skamania County Extension Office
Underwood Conservation District	The UCD engages landowners and land users throughout Skamania and west Klickitat counties in the conservation, enhancement, and sustainable use of natural resources through voluntary stewardship. As one of 47 conservation districts in Washington, the UCD is a legal subdivision of state government that administers programs for the productive use and conservation of natural resources.	<ul style="list-style-type: none"> • Native Plant Sales • Kanaka Creek habitat restoration
Washington State Department of Ecology	Ecology is Washington's environmental protection agency, and their mission is to protect, preserve and enhance the state's land, air and water for current and future generations. Nearly 70 percent of Ecology's budget is passed through to local communities to pay for projects that benefit the environment.	<ul style="list-style-type: none"> • Shorelands and Environmental Assistance Program • Water Quality Program

Figure A.1 – Existing Programs & Potential Partners, Cont.		
Partner Organization	Mission	Restoration Activities
Washington State Department of Fish and Wildlife	Management and regulatory oversight of state waters and other habitats. WDFW sponsors several key restoration-related activities including the summer chum salmon conservation initiative and the barrier culvert inventory and prioritization. WDFW also manages the SSHIAP (co-managed with the NW Indian Fisheries Commission), which provides information on habitat conditions and prescriptions for improving fish habitat.	<ul style="list-style-type: none"> • Fish passage barrier inventory and correction
Washington State Department of Natural Resources, Aquatic Program	DNR manages state-owned aquatic lands and restores them where appropriate. In partnership with citizens and governments, DNR provides innovative leadership and expertise to ensure environmental protection, public safety, perpetual funding for schools and communities, and a rich quality of life.	<ul style="list-style-type: none"> • Establishment of aquatic reserves and management plans for them with potential restoration actions, research, and monitoring • Aquatic Restoration Program • Debris removal • Removal of creosote-treated wood • Re-vegetating riparian zones
Washington Watershed Restoration Initiative	A coalition of environmental and outdoor recreation NGOs, tribes, and state agencies working together since 2008. Members include Ecology, WDFW, the Wilderness Society, Gifford Pinchot Task Force, and Trout Unlimited.	<ul style="list-style-type: none"> • Forest road upgrading or decommissioning • Culvert replacement or repair • Education, outreach, scientific and economic analysis, and advocacy.
Yakama Nation	The Yakama Nation Department of Natural Resources was established to manage, co-manage and protect the Yakama Nation's Ancestral, Cultural, and Treaty Natural Resources on Reservation, in the Ceded Area and at Usual and Accustomed Sites, to meet the tribal culture, protecting tribal sensitive areas and sites and restoring diminished damaged resources.	<ul style="list-style-type: none"> • Yakama Nation Fisheries • Upper Columbia habitat restoration project



Appendix B – Potential Funding Sources

B.1 Overview

Provided below is a list of potential funding sources for future restoration activities. While this is not an exhaustive list, in conjunction with the list of potential partners provided in RP Figure A-1 it is a starting point for implementing restoration projects in the City.

Environmental Protection Agency, Region 10: Pacific Northwest

1200 Sixth Avenue, Suite 900

Seattle, WA 98101

206-553-6367

<https://www3.epa.gov/>

The EPA funds a variety of projects that aim to safeguard the natural environment and protect human health. Potential opportunities specific to watershed protection and restoration are listed below.

- *The Clean Water State Revolving Fund Program* provides grants or “seed money” to all 50 states plus Puerto Rico to capitalize state loan funds. The states, in turn, make loans to communities, individuals, and others for high-priority water-quality activities. Projects funded by the low-interest loans may include wetlands protection and restoration, estuary management efforts – including wildlife habitat restoration – and development of streambank buffer zones.
- *Nonpoint Source Implementation Grant (319) Program* provides Clean Water Act Section 319(h) funds only to designated state and tribal agencies to implement their approved nonpoint source management programs. State and tribal nonpoint source programs include a variety of components, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulatory programs. Each year, EPA awards Section 319(h) funds to states in accordance with a state-by-state allocation formula that EPA has developed in consultation with the states.
- *Wetland Protection, Restoration, and Stewardship Discretionary Funding* supports studies and activities related to implementation of Section 404 of the Clean Water Act for both wetlands and sediment management. Projects can support regulatory, planning, restoration, or outreach.
- The *Targeted Watershed Grants Program* supports innovative, community-based watershed approaches aimed at preventing, reducing, or eliminating water pollution. Resources provided through this program include grants, tools, training, and technical expertise and assistance to communities to bolster their efforts to expand and improve existing water protection measures.

National Fish and Wildlife Foundation

1120 Connecticut Avenue, NW, #900

Washington, DC 20036

202-857-0166

www.nfwf.org

Non-profit organizations and local, state, or federal government agencies are eligible to apply for funds for community-based projects that improve and restore native salmon habitat or remove barriers to fish passage or for the acquisition of land/ conservation easements on private lands where the habitat is critical to salmon species. Specific grant programs are listed below.

- The *Bring Back the Natives/More Fish* program invests in conservation activities that restore, protect, and enhance native populations of sensitive or listed fish species across the United States, especially in areas on or adjacent to federal agency lands. The program emphasizes coordination between private landowners and federal agencies, tribes, corporations, and states to improve the ecosystem functions and health of watersheds.
- The *Columbia Basin Water Transactions Program* (CBWTP) was developed in 2002 to address chronically diminished stream flows in tributaries of the Columbia River. To enhance stream flow, the CBWTP works through locally based entities to acquire water rights voluntarily from willing landowners. Using temporary and permanent water rights acquisitions and other incentive-based approaches, the CBWTP supports program partners to assist landowners who wish to voluntarily restore flows to key fish habitat. Funding for this program is provided by Bonneville Power Administration in cooperation with NPCC and with support from Altria.
- The *Five Star and Urban Waters Restoration Program* seeks to develop nation-wide-community stewardship of local natural resources, preserving these resources for future generations and enhancing habitat for local wildlife. Projects seek to address water quality issues in priority watersheds, such as erosion due to unstable streambanks, pollution from stormwater runoff, and degraded shorelines caused by development.

Northwest Fund for the Environment, Aquatic Ecosystem Program

1904 Third Ave., Suite 615

Seattle, WA 98101

360-705-7518

<http://www.nwfund.org/>

Grants by the Northwest Fund come from an endowment designated to be spent to promote change in the uses of natural resources which will increase their protection and preservation in Washington. Special emphasis is placed on "the protection of wild fish, native wildlife, natural forests, wetlands and shorelines, and the preservation of pure and free-flowing waters." The fund's Aquatic Ecosystem Program aims to protect and restore the extensive network of fresh and saltwater ecosystems in Washington and the native species that inhabit them.

NOAA Fisheries

Office of Habitat Conservation

1201 Northeast Lloyd Boulevard, Suite 1100 1315 East-West Highway Silver Spring, MD 20910

301-713-2325

NOAA Fisheries, also known as the National Marine Fisheries Service, is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce. NOAA administers the federal Pacific Coastal Salmon Recovery Fund, and their community-based restoration program awards grants and cooperative agreements to support research and conservation initiatives coordinated by state and local governments, non-profits, colleges and universities.

- The *Pacific Coastal Salmon Recovery Fund* was established by Congress in 2000 to reverse the declines of Pacific salmon and steelhead. NOAA Fisheries is the agency charged with administering this competitive grants process. The LCFRB is the local contact for PCSRF funds in Skamania County west of the White Salmon subbasin, and the Klickitat Lead Entity is the contact for funds in the White Salmon subbasin. The fund has catalyzed the development of a community of salmon restoration experts and fostered partnerships among land owners, local governments, and state, tribal, and federal agencies.
- NOAA awards grants through its *Community-based Restoration Program* to support research and conservation initiatives coordinated by state and local governments, non-profits, colleges and universities. Grants are for restoration projects that use a habitat-based approach to promote productive and sustainable fisheries, improve the recovery and conservation of protected resources, and promote healthy ecosystems and resilient communities.

U.S. Fish & Wildlife Service

Pacific Region

911 NE 11th Avenue

Portland, OR 97232

503-231-2014

<https://www.fws.gov/>

The USFWS funds a variety of projects that aim to safeguard the natural environment and protect human health. Potential opportunities specific to watershed protection and restoration are listed below.

- *National Fish Habitat Action Plan*: This program is a national investment strategy to leverage federal and privately raised funds to protect, restore, and enhance the nation's fish and aquatic habitats through partnerships that foster fish habitat conservation. Funds will support national and regional science and coordination activities to protect, restore, or enhance fish habitats.
- *National Fish Passage Program (NFPP)*: NFPP is a voluntary program that provides direct technical assistance and financial assistance in the form of cooperative agreements to partners to provide fish (and other aquatic organisms) passage and restore aquatic connectivity for the benefit of federal trust resources. The NFPP is delivered through Fisheries and Aquatic Conservation Field Offices. The Field Offices staff coordinates with project partners, stakeholders and other Service programs to identify and collaboratively implement projects within Regional priority areas.

- *Partners for Fish and Wildlife Program*: This program provides technical and financial assistance to private landowners and Tribes who are willing to work with USFWS and other partners on a voluntary basis to help meet the habitat needs of Federal Trust Species. The Partners Program can assist with projects in all habitat types which conserve or restore native vegetation, hydrology, and soils associated with imperiled ecosystems such as longleaf pine, bottomland hardwoods, tropical forests, native prairies, marshes, rivers and streams, or ecosystems that otherwise provide an important habitat requisite for a rare, declining or protected species.
- *North American Wetlands Conservation Act Grants Program* provides matching grants to wetlands conservation projects through a Standard Program and a Small Grants Program. Both are competitive and require that grant requests be matched by partner contributions at no less than a 1-to-1 ratio.

Washington State Department of Ecology

300 Desmond Drive

Lacey, WA 98503

360-407-6300

<http://www.ecology.wa.gov/>

Ecology's mission is to protect, preserve and enhance Washington's land, air and water for current and future generations. Ecology provides planning and financial support for environmental work throughout Washington. The department offers several types of grants to achieve these goals, including:

- *Freshwater Aquatic Invasive Plant Management Program* is designed to tackle the problem of non-native aquatic plants on a statewide level. The program provides funding for technical assistance, public education and grants to help control aquatic invasive plants. Eligible activities include the development of integrated aquatic vegetation management plans, plant control activities, and aquatic plant mapping and inventory.
- *Water Quality Program –Stormwater Grants* provides financial assistance to local communities to prevent pollution of water bodies from stormwater and run-off from urbanized areas. Eligible projects include restoration projects that address existing pollution problems and provide a high level of water quality benefit.
- *Floodplain by Design* is a partnership of local, state, federal and private organizations focused on coordinating investment in and strengthening the integrated management of floodplain areas through Washington State. Ecology administers the grant program under a biennial funding cycle, and awards grants on a competitive basis to eligible entities for collaborative and innovative projects that support the integration of flood hazard reduction with ecological preservation and restoration. Proposed projects may also address other community needs, such as preservation of agriculture, improvements in water quality, or increased recreational opportunities provided they are part of a larger strategy to restore ecological functions and reduce flood hazards.

Washington State Department of Fish & Wildlife

600 Capitol Way North

Olympia, WA 98501

360-902-2806

<http://wdfw.wa.gov/>

WDFW's mission is to preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. The department offers several types of grants to achieve these goals, including:

- *Landowner Incentive Program* is designed to provide financial assistance to private landowners for the protection, enhancement, or restoration of habitat to benefit species at risk on privately owned lands. At-risk species depend on specific ecosystems for survival such as riparian areas, wetlands, oak woodlands, prairies and grasslands, shrub steppe, and nearshore environments. Through Washington's LIP, individual landowners can apply for up to \$50,000 in assistance. In addition, \$50,000 is usually set aside for small grants to individuals of up to \$5,000. A 25 percent non-federal contribution is required, which may include cash and/or in-kind contributions (labor, machinery, materials).

Washington State Department of Natural Resources

MS 47001

Olympia, WA 98504-7001

360-902-1775

<https://www.dnr.wa.gov/>

WDNR provides restoration services as well as technical assistance and assets applicable to restoration in the Stevenson area. WDNR expertise includes removal of creosote-treated wood, removal of debris and abandoned vessels, and reestablishing more natural aquatic/riparian ecosystems.

Washington State Recreation and Conservation Office (RCO)

1111 Washington Street SE

PO Box 40917

Olympia, WA 98504

360-902-3000

<http://www.rco.wa.gov/grants/index.shtml>

RCO provides leadership, funding, and technical assistance to protect and restore habitats, invest in and track salmon health and recovery, and protect Washington's diverse biological heritage. Grant programs offered by the RCO include:

- *Aquatic Lands Enhancement Account (ALEA)* targets re-establishing the natural, self-sustaining ecological functions of the waterfront, providing or restoring public access to the water, and increasing public awareness of aquatic lands as a finite natural resource and

irreplaceable public heritage. ALEA grants may be used for the acquisition, improvement, or protection of aquatic lands for public purposes. They also may be used to provide or improve public access to the waterfront.

- The *Family Forest Fish Passage Program* provides funding to small forest landowners to repair or remove fish passage barriers, such as culverts and other stream crossing structures, which keep trout, salmon, and other fish from reaching upstream habitat. The program funds the replacement of eligible barriers with new structures. Since 2003, nearly 285 landowners have taken advantage of the program to remove 353 barriers and open more than 804 miles of stream habitat.
- The *Washington Wildlife Recreation Program* (WWRP) provides funds for the acquisition and development of recreation and conservation lands. WWRP funds restoration projects such as animal watering stations, bank stabilization, LWD placement, and riparian revegetation.

Washington State Department of Transportation City Fish Passage Grant Program

310 Maple Park Avenue SE

Olympia, WA 98501

206-386-7220

<http://www.wsdot.wa.gov/Projects/FishPassage/default.htm>

State highways cross streams and rivers in thousands of places in Washington. At many places, culverts are too small or otherwise inadequate to allow fish to migrate upstream and downstream as necessary for growth and reproduction. State law (RCW 77.57.030) requires WSDOT to install and maintain all culverts, fishways, and bridges to provide unrestricted fish passage. WSDOT has worked for more than two decades to improve fish passage and reconnect streams.

Appendix C – Additional Restoration Resources

C.1 Overview

As a program, Shoreline Restoration is relatively new in Stevenson and many involved may be unfamiliar with what is necessary to implement successful projects. This appendix attempts to overcome this reality by collecting useful resources.

C.2 Resource List

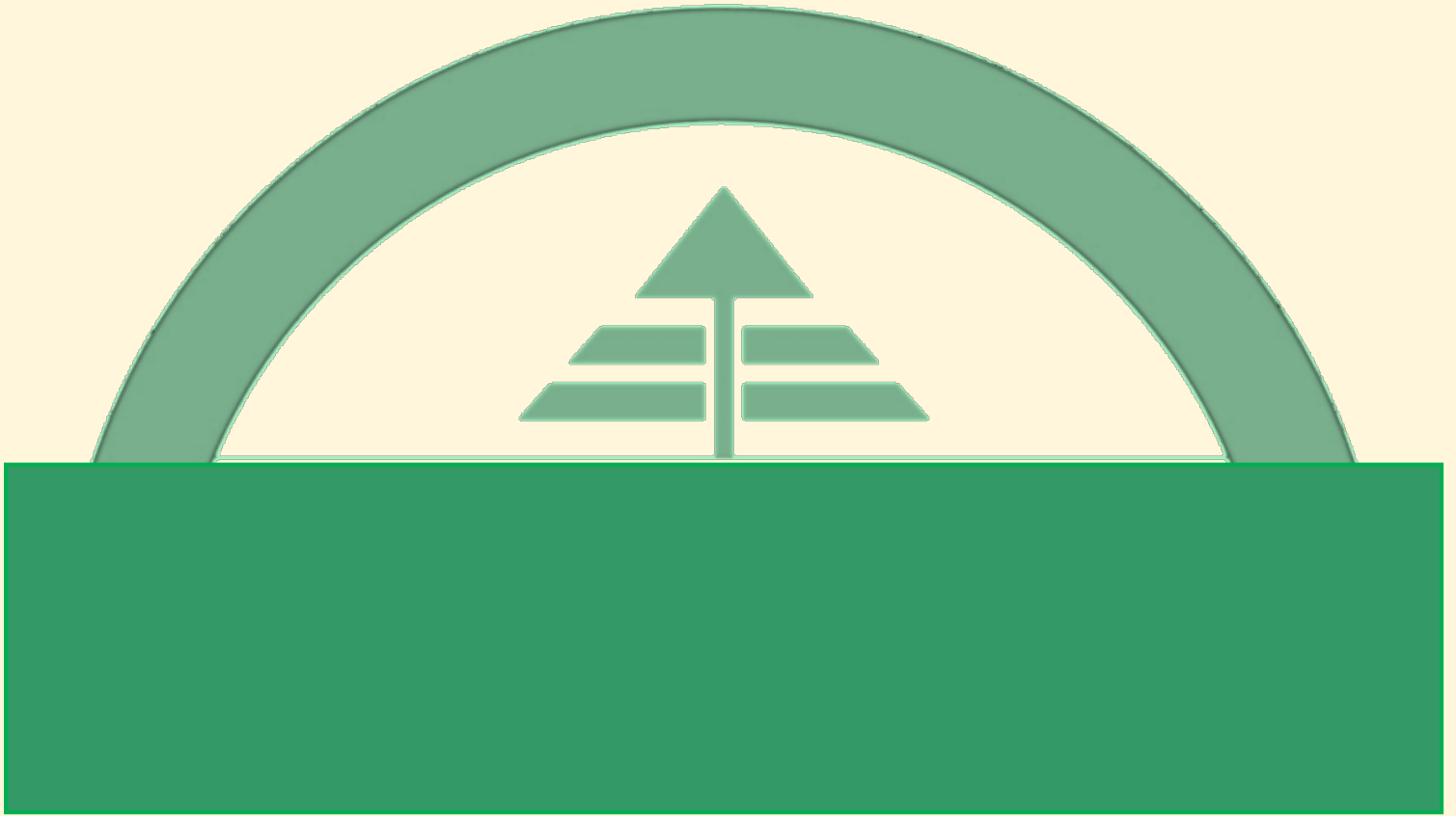
Where possible, the list in Figure C-1 identifies the Restoration Needs of RP Figure 2-1 and collects links to proposed projects, best practices, and other recommendations based on communities with more experience than Stevenson.

FIGURE C.1 RESTORATION RESOURCES	
Resource	Link
Derelict Creosote Piling Removal	https://www.dnr.wa.gov/publications/aqr_rest_pileremoval_bmp_2017.pdf
Native Plants & Pollinator Habitat	http://www.nativerivegetation.org/





DRAFT



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Stevenson, WA 98648
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