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City of White Salmon

Restoration Plan–DRAFT

October 2015

Restoration Plan

City of White Salmon
Shoreline Master Program

Submitted to

City of White Salmon
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RESTORATION PLAN

City of White Salmon
Shoreline Master Program
Phase 4

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RESTORATION PLAN
CITY OF WHITE SALMON
SHORELINE MASTER PROGRAM

1.0 INTRODUCTION

1.1 Shoreline Management Act Requirements

This restoration plan supports the City of White Salmon (City) Shoreline Master Plan (SMP) update (City of White Salmon 2015). In 1984, the City adopted the Klickitat County SMP, which is being updated in order to comply with updates to the Washington State Shoreline Management Act (SMA), Revised Code of Washington (RCW) 90.58, and the Washington Administrative Code (WAC) 173.26 adopted in 2003 by the Washington State Legislature. This restoration plan framework is based on the City's Shoreline Inventory and Characterization Report (City of White Salmon 2014) and includes a list of ongoing, proposed, and potential restoration projects with the aim of protecting and restoring ecosystem processes and shoreline functions of the City's shorelines. This restoration plan is funded with grant assistance from the Washington State Department of Ecology (Ecology).

1.2 Methodology

This document has been prepared to comply with the SMP guidelines (WAC 173-26-201(2)(f)). According to the guidelines, 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 require that shoreline restoration plans address the following six components.

1. Identify degraded areas, impaired functions, and sites with potential for ecological restoration.

2. Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions.

3. Identify existing and ongoing projects and programs that are currently being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), which are designed to contribute to local restoration goals.

4. Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs.

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5. Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals.

6. Provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

This analysis will rely on the existing condition information provided in the City's Shoreline Inventory and Characterization Report (City of White Salmon 2014), which evaluated ecosystem processes and included an inventory and analysis of shoreline conditions related to land use, public access, and environmentally sensitive areas and habitat, as well as provided recommendations for shoreline enhancement and restoration in degraded areas. The restoration plan provides an opportunity to assess the development potential of the draft SMP's proposed environment designations. The restoration opportunities provided in this restoration plan will require further investigation and analysis in order to assess their costs, benefits, and overall feasibility within the City's shoreline jurisdiction.

2.0 STUDY AREA

The City is located in Klickitat County, Washington, on the north bank of the Columbia River in the Columbia River Gorge National Scenic Area, and contains shorelines associated with Columbia River. The City encompasses approximately 1.24 square miles (U.S. Census Bureau 2014), in Water Resource Inventory Area (WRIA) 29 – Wind-White Salmon – and is surrounded by rural residential and agricultural lands to the west and north, with the City of Bingen bordering the southeast corner of the City. Its shoreline is located within the White Salmon River subbasin, which originates in the Gifford Pinchot National Forest on the south flanks of Mount Adams. The study area for this report includes all land currently within the City's proposed shoreline jurisdiction along the Columbia River, as depicted in Figure 1 in Appendix A (all figures are contained in Appendix A). The total area subject to the proposed SMP is approximately 29 acres and encompasses 1.2 miles of shoreline.

To assess the physical and biological resources of the shoreline of the Columbia River, the inventory and characterization broke the study area into manageable units based on geographic location: (1) Columbia River Reach 1 – Columbia River shoreline from the boundary between White Salmon and Bingen downstream to the western edge of the White Salmon city limit, and (2) Columbia River Reach 2 – downstream of Reach 1 at the western end of the White Salmon city limit. No other streams, lakes, or wetlands within the City are considered part of its shoreline jurisdiction.

3.0 EXISTING CONDITIONS

3.1 Shoreline Inventory

The study area's existing conditions are summarized based on information provided in the City's Inventory and Characterization Report (see this report for a detailed review of

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ecosystem processes, natural resources, shoreline functions, public access, shoreline alterations, and existing land use patterns within the study area).

This discussion has been divided by waterbody and includes a discussion of the proposed shoreline environment designations (see Figures 2A and 2B, Appendix A). Environment designations include Urban Conservancy, High Intensity, and Aquatic. The City's Inventory and Characterization Report also provides recommendations for shoreline enhancement and restoration in degraded areas. The following shoreline inventory information fulfills the SMP guidelines (WAC 173-26-201(2)(f)) to identify degraded areas, impaired functions, and site potential for ecological restoration within the City's shoreline jurisdiction.

3.1.1 Columbia River Reach 1

Reach 1 is the main section of shoreline within the City and is approximately 4,750 linear feet. This reach includes the area immediately east and west of the Hood River-White Salmon Interstate Bridge. The reach is characterized by a relatively natural shoreline that includes alcoves and areas that extend out into the river. The area landward of the shoreline is characterized by two ecosystems – a lowland riparian deciduous forest and a dry mesic oak-pine forest community. Land uses within the 200-foot shoreline buffer include commercial agriculture, open space, and transportation (bridge and railroad). Zoning in Reach 1 is RD, Riverfront District. Table 1 provides an overview of the functional analysis of this reach from the City's Inventory and Characterization Report.

3.1.2 Columbia River Reach 2

Reach 2 is located downriver of Reach 1 and, at approximately 1,600 linear feet, is smaller. The physical shoreline itself is not located within city limits, but its 200-foot shoreline buffer extends into the city. The city limits are separated from the physical shoreline by State Route 14 (SR 14) and the BNSF tracks. The shoreline is generally linear with armored rock placed to protect the BNSF tracks from the erosive forces of the Columbia River. The shoreline slopes up steeply from the railroad to SR 14, which was cut into the hillside. The slope continues upward steeply to the edge of the 200-foot shoreline buffer. The area landward of the shoreline is characterized by a dry mesic oak-pine forested community with shallow soils and exposed bedrock. Current land uses in the shoreline area include open space and transportation (SR 14 and BNSF tracks). Current zoning designations include R-1 Single Family Residential. Table 1 summarizes the reach inventory.

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Table 1. Summary of Reach Elements

Inventory Element		Columbia River Reach 1	Columbia River Reach 2
Reach Length		4,750 linear feet	1,600 linear feet
Reach Area		21.8 acres	7.3 acres
Land Use Patterns	Zoning	Riverfront District	R-1 Single Family Residential
	Comprehensive Plan	Riverfront Plan District	Residential District
	Current Land Uses	Commercial agriculture, Transportation, & Open Space	Residential & Open Space
Public Accesses		3.89 acres	None
Shoreline Armoring		60 linear feet	1,600 linear feet
Over Water Coverage		0%	0%
Critical Areas	Fish & Wildlife Habitat	Waterfowl concentrations Palustrine wetland	Oak woodland Talus slopes
	Geological Hazards	Slopes 0-14%	Slopes 15-39%
	Flood Hazard Areas	100-year floodplain	None
	Critical Aquifer Recharge Areas	None	None
	Wetlands	Palustrine wetland	None

3.2 Ecosystem Processes and Shoreline Functions

The City's Inventory and Characterization Report (City of White Salmon 2014) provides an analysis of the existing ecosystem process and shoreline functions. Ecosystem processes are defined as "…the suite of naturally occurring physical and geological processes of erosion, transport, and deposition; and specific chemical processes that shape landforms within a specific shoreline ecosystem and determine both the types of habitat and the associated ecological functions" (WAC 173-26-020-12). Ecosystem functions are those aspects of the ecosystem that are beneficial either biologically, economically, or aesthetically.

3.2.1 Analysis of Existing Ecosystem Processes

Dams on the Columbia River have had significant effects on the ecological functions along the City's shoreline by altering the natural hydrograph of the river, which causes a loss of wetlands, loss of floodplain storage, loss of opportunities for nutrient cycling, and loss of sediment storage. Table 2 summarizes the ecosystem-wide processes, functions, and impairments.

The City sits within the White Salmon River and Jewett Creek subbasins of the Mid-Columbia River Basin. These tributaries feed into the Columbia River and affect its shoreline functions. Hydrologic processes within these subbasins have been significantly altered because of dams installed at the main channel and the Snake River. Jewett Creek has been significantly altered as it runs through the City, and it is piped under SR 14 and through the SDS Lumber Company mill site to the Columbia River. The White Salmon

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River had some hydrologic processes restored with the recent removal of the Condit Dam, which was built for hydropower in the early twentieth century at river mile 3.1.

The majority of the White Salmon River watershed is forested, but agriculture and forestry practices have affected ecosystem processes. Increased erosion has affected the movement of sediments, and the application of fertilizers has increased the movement of toxins with the watershed. Additionally, culvert installation for farm and logging roads has reduced the movement of large woody debris (LWD) within the watershed.

Table 2. Summary of Ecosystem-wide Processes, Functions, and Impairments for the Columbia River

Ecosystem-wide Process	Ecological Function Group	Ecological Function	Impairment
Hydrologic movement of surface and subsurface water	Water quantity functions	Storage of surface water in floodplains and depressional wetlands	Water withdrawals for irrigation
Movement of sediment, toxics, nutrients, and pathogens	Water quality functions	Removal of sediment, toxics, nutrients, and pathogens	Steep watershed with little floodplain/ wetlands to remove toxins, toxins in Columbia River
Movement of water, sediment, and LWD	Habitat functions	Provision of aquatic habitat for invertebrates, native fish, amphibians, birds, and mammals	Dams hold sediments behind them and limit transfer of sediment

3.2.2 Analysis of Shoreline Functions

Shoreline functions pertain to the Columbia River in the City's shoreline jurisdiction. The assessment of each function is based on the quantitative data that results from the shoreline inventory and on a qualitative assessment based on aerial photography and field inventory that was conducted for the City's Shoreline Inventory and Characterization Report. The analysis divided the shoreline of the Columbia River into two reaches based on their geographic location and physical characteristics. In the ensuing sections, each reach is assessed and given an overall qualitative rating for ecological functions. Ratings were completed using a five-tier scoring scale:

- Low
- Low/Moderate
- Moderate
- Moderate/High
- High

Columbia River Reach 1

Reach 1 is located on the Columbia River and extends 4,750 linear feet from the City of Bingen downstream past the Hood River-White Salmon Interstate Bridge to the edge of

the White Salmon city limits. The shoreline south of the railroad consists mostly of undeveloped areas, except the westernmost parcel that is used for agriculture and is in private ownership. Vegetation within the shoreline jurisdiction is characterized by deciduous lowland riparian forest and dry, mesic mixed deciduous and coniferous forest. The lowland riparian forest cover overhangs the shoreline edge providing allochthonous energy inputs. The forested area between the ordinary high water mark (OHWM) and the railroad is a source of LWD recruitment as evidenced by several large alder and cottonwood trees that have fallen on the shoreline.

The width of the upland forest between the OWHM and the railroad varies from less than 40 feet to more than 200 feet. There are no tributary streams within the reach, but in several locations along the streambank, groundwater was observed discharging to the river from natural springs or seeps. The water from the springs is colder than the river water and may provide some thermal regulation of stream temperatures.

Most of the physical shoreline in Reach 1 is unaltered with the exception of a 60-foot section where one of the bridge footings is located and in a 760-foot section that appears to have been filled when the railroad was constructed. This segment has become vegetated and provides a degree of natural shoreline function. All of the streambanks within the shoreline appear to be stable.

The Washington Department of Fish and Wildlife (WDFW) priority habitats and species (PHS) database identifies a waterfowl concentration area along the eastern portion of Reach 1. No upland habitats are mapped in Reach 1. Ecology has identified the Columbia River as an impaired water for temperature along this reach. Table 3 summaries the ecological function assessment for Reach 1.

Table 3. Reach 1 Ecological Functional Assessment Summary

Shoreline Function	Alteration and Assessment of Functions	Function Score
Hydrologic Functions		
Transport water and sediment across the natural range of flow variability	Construction of upstream and downstream dams has altered water and sediment transport resulting in water and sediment storage in the Bonneville Reservoir.	Low
Attenuating flow energy	Shoreline functions for attenuating flow energy have been impaired by the construction of mainstem Columbia River dams; however, dams have slowed velocities and reduced erosive forces.	Low
Developing pools, riffles, gravel bars	Construction of dams has altered natural stream processes of pool, riffle, and gravel bar development	Low
Nutrient flux	Nutrient fluxes have been altered by increased irrigation runoff and wastewater discharges.	Low/ moderate

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Shoreline Function	Alteration and Assessment of Functions	Function Score
Recruitment and transport of LWD and other organic matter	Transport of LWD has been altered by construction of dams and transportation system that parallel river and have disconnected floodplain, limiting amount of LWD available to floodwaters. However, existing forested area has provided and continues to provide LWD recruitment.	Low/ moderate
Temperature	Construction of dams has resulted in reservoirs where surface temperatures increase with slower moving water and increased surface area. Top water release of water yields increases temperatures downstream.	Low
Shoreline Vegetation Functions		
Maintaining temperature	Streamside vegetation has limited ability to maintain stream temperatures in large river systems like the Columbia River. Additionally, the streambank is south-facing, further reducing vegetation's ability to maintain temperatures. Any alteration of vegetation would have a negligible effect on temperature.	N/A
Removing excessive nutrients and toxic compounds	Vegetative width varies along shoreline. Full 200-foot shoreline buffer vegetated in middle of reach, but narrow vegetated strip adjacent to agriculture and rail uses reduces shoreline's ability to remove nutrients and toxins.	Low/ moderate
Sediment removal and stabilization	Narrow vegetated strip adjacent to agriculture and rail uses reduces ability to remove sediment and stabilize soils. Heavily vegetated middle section of reach provides sediment removal and stabilization functions.	Moderate
Attenuation of high stream flow energy	High stream flow energy has been negated and the opportunity for streamside vegetation to perform attenuation function has been lost because of dam construction.	N/A
Provision of woody debris and other organic matter	Middle section of shoreline reach has mature forest coverage that provides opportunity for LWD recruitment and organic debris inputs. Vegetation removal and shoreline development reduce opportunities for LWD and organic input.	Moderate
Hyporheic Functions		
Removing excessive nutrients and toxic compounds	Region's natural geology has shallow soils on bedrock. Hyporheic zone has limited ability to remove excessive nutrients and toxins. Construction of dams and Bonneville Reservoir has altered exchange of water to and from hyporheic zone.	Low
Water storage	Region's natural geology has shallow soils on bedrock. Hyporheic zone has limited ability to store water. Additionally, loss of floodplain area from dam construction eliminates additional water storage in hyporheic zone.	Low
Support of vegetation	Several seeps/springs were observed in middle section of reach that provide water in dry months and help support streambank vegetation.	Moderate/ high
Maintenance of base flows	Region's natural geology has shallow soils on bedrock. Hyporheic flows observed have limited ability to contribute to base flows.	Low/ moderate

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Shoreline Function	Alteration and Assessment of Functions	Function Score
Habitat Functions		
Space or conditions for life history stages	Change in water levels from hydropower systems can create unstable habitat conditions that can be disrupting to juvenile fishes (Freeman et al. 2001).	Low
Resting, cover, and migration	Shoreline contains alcoves with overhanging vegetation that may provide resting and cover opportunities for migrating fish. Construction of dams has resulted in simplification and homogenization of habitat and created slow-moving water that causes juvenile salmonids to expend more energy and a semi-lentic environment.	Low/ moderate
Primary productivity, food production and delivery	In general, primary production has shifted from a periphyton community to floating algae community due to creation of Bonneville Reservoir. Benthic community also shifts from a lotic to lentic community that may have implications for food web. However, overhanging vegetation in reach provides allochthanous energy inputs.	Low/ moderate
	Overall Function Score	Low – Moderate

Columbia River Reach 2

Reach 2 is located on the Columbia River, downstream of Reach 1, and extends approximately 1,600 linear feet. In this reach, the physical shoreline itself is not within city limits, but a small portion of the 200-foot jurisdictional buffer extends into the City. The shoreline consists of filled slopes with armoring south of the railroad, steep slopes (between 15 and 39 percent) between the railroad and SR 14, and extremely steep slopes (40 percent and greater) north of SR 14. The latter are located within the city limits. Vegetation within the shoreline jurisdiction is characterized by dry, mesic mixed deciduous and coniferous forest. Because of the steep slopes, highway, and railway, this area was not traversed and aerial photography was used to assess it.

In Reach 2, most of the shoreline has been altered by the construction of the railroad and SR 14. Stream banks are armored and appear to be stable. The WDFW PHS database identifies oak forest and talus slopes, which are upland habitats in Reach 2. No aquatic priority habitats are identified in this reach. Ecology has identified the Columbia River as an impaired water for temperature along this reach. Table 4 summarizes the ecological function assessment for Reach 2.

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Table 4. Reach 2 Ecological Functional Assessment Summary

Shoreline Function	Alteration and Assessment of Functions	Function Score
Hydrologic Functions		
Transport water and sediment across the natural range of flow variability	Construction of upstream and downstream dams has altered water and sediment transport resulting in water and sediment storage in Bonneville Reservoir.	Low
Attenuating flow energy	Shoreline functions for attenuating flow energy have been impaired by construction of mainstem Columbia River dams; however, dams have slowed velocities and reduced erosive forces.	Low
Developing pools, riffles, gravel bars	Construction of dams has altered natural stream processes of pool, riffle, and gravel bar development.	Low
Nutrient flux	Nutrient fluxes have been altered by increased irrigation runoff and wastewater discharges.	Low/ moderate
Recruitment and transport of LWD and other organic matter	Transport of LWD has been altered by construction of dams and transportation system that parallel river and have disconnected floodplain, limiting access of LWD to floodwaters.	Low
Temperature	Construction of dams has resulted in reservoirs where surface temperatures increase with slower-moving water and increased surface area. Top water release of water yields increased temperatures downstream.	Low
Shoreline Vegetation Functions		
Maintaining temperature	Streamside vegetation has limited ability to maintain stream temperatures in large river systems like the Columbia River. Additionally, the stream bank is south facing further reducing vegetation's ability to maintain temperatures. Any alteration of vegetation would have a negligible effect on temperature.	N/A
Removing excessive nutrients and toxic compounds	Shoreline has been bisected by the railroad and SR 14, which has reduced the ability to remove nutrients and toxins.	Low
Sediment removal and stabilization	Fill slope with limited strip of vegetated adjacent rail uses has reduced the ability to remove sediment and stabilize soils.	Low
Attenuation of high stream flow energy	High stream flow energy has been negated and the opportunity for streamside vegetation to perform the attenuation function has been lost because of dam construction.	N/A
Provision of woody debris and other organic matter	Vegetation removal and shoreline development have reduced the LWD and organic input opportunities.	Low
Hyporheic Functions		
Removing excessive nutrients and toxic compounds	Region's natural geology has shallow soils on bedrock. Hyporheic zone has limited ability to remove excessive nutrients and toxins. Construction of dams and Bonneville Reservoir has altered exchange of water to and from hyporheic zone.	Low

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Shoreline Function	Alteration and Assessment of Functions	Function Score
Water storage	Region's natural geology has shallow soils on bedrock. Hyporheic zone has limited ability to store water. Additionally, loss of floodplain from dam construction eliminates any water storage in hyporheic zone.	Low
Support of vegetation	Filled slope for railroad construction has reduced opportunity to support vegetation.	Low
Maintenance of base flows	Region's natural geology has shallow soils on bedrock. Hyporheic flows expected to have limited ability to contribute to base flows.	Low
Habitat Functions		
Space or conditions for life history stages	Shoreline is linear fill slope with armor rock that does not provide ideal conditions for life history stages.	Low
Resting, cover, and migration	Construction of dams and railroad has resulted in simplification and homogenization of habitat, which creates slow-moving water that causes juvenile salmonids to expend more energy and created semi-lentic environment.	Low
Primary productivity, food production and delivery	In general, primary production has shifted from periphyton community to floating algae community because of creation of Bonneville Reservoir. Benthic community also shifts from lotic to lentic community that may have implications for food web.	Low
	Overall Function Score	Low

4.0 RESTORATION GOAL AND OBJECTIVES

In accordance with the SMP guidelines (WAC 173-26-201(2)(f)), this section of the restoration plan establishes the overall goal and priorities for restoration of degraded areas and impaired ecological functions within the City's shoreline jurisdiction. The goal of shoreline restoration within the City is to reestablish, rehabilitate, and/or otherwise improve impaired shoreline ecological functions and/or processes through voluntary and incentive-based public and private programs and actions. The documents summarized within this section are aimed at supporting and prioritizing the type of shoreline restoration within the shoreline jurisdiction of the City.

4.1 Shoreline Master Plan

In support of the City's shoreline restoration goal, the City's SMP is being updated to include the following goals and policies regarding shoreline restoration:

1. Shorelines that are biologically degraded should be reclaimed and restored to the greatest extent feasible. Implementation of restoration projects identified in the Shoreline Restoration Plan shall be the guiding document for restoration actions on public and private lands in shoreline jurisdiction. Implementation of restoration projects identified in the Shoreline Restoration Plan take precedence over other restoration projects in shoreline jurisdiction.

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2. Restoration projects should be incorporated into public shoreline development where shoreline environmental functions are degraded, such as the development of parks, trails, and shoreline access points.

3. Restoration projects on private land may be incorporated into development proposals to compensate for ecological impacts elsewhere on a site and should prioritize projects in the Shoreline Restoration Plan.

4. Restoration projects may include, but not be limited to, the following:

    a. Eradication of invasive species, including noxious weeds and non-native species.

    b. Planting of native vegetation that enhances shoreline ecological function and plant diversity with development and redevelopment, consistent with vegetation conservation section of this SMP.

    c. Retrofitting existing stormwater control facilities to improve water quality.

    d. Working with property owners to remove the old fence line along the eastern boundary of the County-owned property to facilitate wildlife movement.

    e. Removing armor stones west of the Hood River-White Salmon Interstate Bridge that are located in the terrestrial environment, but within shoreline jurisdiction.

5. The City should develop educational materials for the following:

    a. Proper vegetation/landscape maintenance and the impacts of shore armoring and over-water structures for property owners.

    b. The harmful effects of application of chemical pesticides and fertilizers on shoreline vegetation used on private property and in commercial nurseries.

6. Cooperative restoration actions involving local, state, and federal agencies; Native American tribes; non-government organizations; and landowners should be encouraged.

4.2 Comprehensive Plan

The City's Comprehensive Plan's Critical Areas Element includes several goals and policies related to protection and restoration of critical areas such as wetlands, aquifer recharge area for potable water, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas (City of White Salmon 2012). The goals related to these critical areas include:

Goal CA-1: to protect the health, safety, welfare, and property of residents through the application of standards and policies regulating development in areas susceptible to natural disasters and hazards.

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Goal CA-2: to protect, sustain, and enhance the environmental functions and values of the City's critical natural areas through regulation, incentive and acquisition. Protect fish and wildlife habitat, groundwater aquifer recharge areas, wetlands, and their buffer areas.

5.0 EXISTING AND ONGOING PROGRAMS AND PLANS

In accordance with the SMP guidelines (WAC 173-26-201(2)(f)), this section of the restoration plan provides an overview of the current programs and plans that are designed to contribute to local restoration goals. The City does not have specific policies and code provisions that require restoration. However, the City implements elements of the Growth Management Act (GMA) through the adoption of the City's Comprehensive Plan and the City of White Salmon Municipal Code, which both contribute to local restoration goals. There are also several additional tribal, federal, and state planning resources that are available to the City that contribute to local restoration goals. The entities with existing ongoing management programs are summarized in Table 5.

Table 5. Summary of Existing Local, State, and Federal Entities with Existing Ongoing Management Programs[1]

Plan Type	Plan Name
Local	Klickitat County Shoreline Master Plan
	City of White Salmon Planning Commission
State	Washington Department of Ecology
	Washington Department of Fish and Wildlife
	Washington Department of Transportation
	Washington Department of Natural Resources
	Washington State Department of Agriculture
	Enforcement of Hunting and Fishing Regulations
	Land Conservation and Development Commission
Tribal	Columbia River Inter-Tribal Fish Commission
	Yakama Indian Nation
	Confederated Tribes of the Umatilla Indian Nation
	Confederated Tribes of the Warm Springs Reservation of Oregon
	Nez Perce Tribe
Federal	National Oceanic Atmospheric Administration National Marine Fisheries Service
	U.S. Fish and Wildlife Service
	U.S. Environmental Protection Agency
	U.S. Army Corps of Engineers
	Northwest Power and Conservation Service

[1]: Adapted from the *Columbia Gorge Mainstem Subbasin Plan*, Northwest Power and Conservation Council 2004)

There are several local, state, tribal, and federal management plans that contribute to local restoration goals. These are summarized in Table 6, and several of these plans are discussed in greater detail within this section.

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Table 6. Summary of Existing Local, State, and Federal Management Plans[1]

Plan Type	Plan Name
Local	City of White Salmon Comprehensive Plan
	White Salmon Municipal Code
	Klickitat County Shoreline Master Plan
State	Columbia Gorge Mainstem Subbasin Plan
	Washington Statewide Strategy to Recover Salmon
Tribal	1995 WY-KAN-USH-MI WA-KISH-WIT (Spirit of the Salmon): The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes and 2014 Update
Federal	Columbia Gorge Scenic Area Management Plan
	Endangered Species Act Implementation Plan for the Federal Columbia River Power System (FCRPS)
	FCRPS Biological Opinion and the Basinwide Salmon Recovery Strategy
	Columbia River Fish Management Plan

[1]: Adapted from the *Columbia Gorge Mainstem Subbasin Plan*, Northwest Power and Conservation Council 2004)

5.1 City's Comprehensive Plan

The City's Comprehensive Plan includes policies that are important tools for helping the City meet its restoration goals (City of White Salmon 2012). The policies include the protection and restoration of critical areas, which perform key functions that enhance the environment and protect people from hazards. The several beneficial functions and values of critical areas include, but are not limited to, water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance, flood control, groundwater recharge and discharge, erosion control, protection from natural hazards, and recreation. The Comprehensive Plan's most pertinent policies regarding critical areas are provided below.

- **Policy CA-1.1:** *Inventory*. The City shall develop and maintain a list of available maps of critical hazard and resource areas within the City relying on best available sources. Inventory process will be developed to incorporate new site-specific information from applicants vetted during permitting onto inventory maps. The City shall periodically update maps and inventory to reflect the most current science and information regarding critical resource areas within the City.

- **Policy CA-1.2:** The City shall avoid conflicts between development and resource values or hazards by directing development activity away from critical hazard and natural resource areas. Unavoidable impacts should be managed to avoid net loss of resource values and adequately protect life and property.

- **Policy CA-1.3:** *Construction BMP (best management practices)*. The City shall require construction methods reflecting professionally accepted best management standards to prevent erosion, sedimentation, siltation, and damage to nearby habitat areas and downstream properties.

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- **Policy CA-1.4:** *Low Impact Development*. The City shall encourage low impact development methods where appropriate. This includes clustering to retain native vegetation and use of permeable pavement, soil amendment, green roofs, green streets, and other methods.

- **Policy CA-1.5:** *Site-appropriate use*. The CAO shall ensure that land subject to natural disasters and hazards be designated for uses that avoid or minimize loss of life and property. Suitable designations are: agricultural, recreational, lowest density Rural Residential, and water dependent uses.

- **Policy CA-1.6:** *Steep Slopes*. The City shall adopt regulations for development on steep slopes to lessen the risk for landslides and erosion.

- **Policy CA-2.1:** *Clearing*. The City shall require approved developmental proposals for clearing, grading and land alteration on sites containing or abutting critical resource areas. Require seasonal limitations on clearing adjacent to critical areas.

- **Policy CA-2.2:** *Review of other development policies*. The City shall periodically review and amend subdivision, drainage, land clearing, grading and other land use and development regulations. Perform as needed to protect critical areas according to their natural sensitivity and to protect the public health, safety and welfare. To meet or exceed the resource management standard as described by the Scenic Area legislation.

- **Policy CA-2.3:** *Education and Public Awareness*. The City shall educate the public with programs and literature on habitat enhancement and protection. Appropriate subjects include maintenance of natural vegetation, installation of artificial habitat (e.g. bird and bat boxes), green construction, proper disposal of pollutants, and proper use of fertilizers, herbicides and pesticides.

- **Policy CA-2.4:** *Innovative Land Use and Project Design*. The City shall encourage unique and innovative design solutions on properties that contain critical resource areas to protect the sensitive features of the site. Examples includes planned residential developments and cluster housing.

- **Policy CA-2.5:** *Public Facilities*. The City shall design public facilities to avoid impacts to critical areas and their required buffers. Where unavoidable, necessary public facilities should be designed to minimize impacts, restore impacted critical areas to the extent possible, and mitigate impacts to the critical areas and required buffer.

- **Policy CA-2.6:** *Expertise*. The City shall require geotechnical analysis for development proposals within or adjacent to critical hazard areas. Such analysis will determine the extent of hazard, identify potential impacts of the proposal, and identify necessary mitigation measures to eliminate significant hazards. Require mitigation sequencing for situations with unavoidable impacts to critical areas.

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- **Policy CA-2.7:** *Resource preservation and alteration*. The City shall avoid net loss of critical resource areas by balancing conflicts between proposed uses and natural values or known environmental risks. Where critical resource or buffer area alteration is allowed, the CAO requires that the alteration be the minimized and that the functions and values of the resource area that are modified be replaced and enhanced.

- **Policy CA-2.8:** *Connectivity*. The City shall emphasize protection of riparian areas and designated wildlife habitat that are connected to other critical areas or large blocks of open space.

- **Policy CA-2.9:** Design Flexibility. The City shall accommodate deviations critical resource area protection requirements provided alternative designs result in improved function and values of the critical area and its buffer.

- **Policy CA-2.10:** *Riparian areas*. The City shall protect riparian ecosystems with management designed to reduce water temperatures by increasing shading, improving soil stability, increasing terrestrial insect production for fish resources and providing a more diverse wildlife habitat.

- **Policy CA-2.11**: *Ravines*. The City shall discourage development on steep slopes which present a risk from landslides or erosion.

- **Policy CA-2.13:** *Acquisition*. The City shall consider non-regulatory methods to protect critical areas such as easements or acquisition.

5.2 White Salmon Municipal Code

The White Salmon Municipal Code (WSMC) includes several regulations that contribute to the City's restoration goals. These policies include, but are not limited to, critical areas (previously discussed in Section 5.1 of this report), stormwater management, erosion and sediment control, and land divisions planning.

5.2.1 Stormwater Management and Planning

WSMC 13.01.050(B) includes stormwater runoff control standards that contribute to local restoration goals by minimizing the potential negative impacts of stormwater on shoreline functions and processes. Currently, the City provides stormwater runoff systems to the residents of the City and some surrounding areas. According to the City's Comprehensive Plan, the City may make incremental improvements to stormwater management using a blend of public and private funding sources. Some of these include, but are not limited to, the Community Development Block Grant – General Purpose Grant Program, and the Rural Community Assistance Corporation – Environmental Infrastructure Loan Program.

Currently, the City has small individualized storm sewer systems that run primarily east and west across the slopes of the City's topography, and residential developments are

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required to have on-site water containment for stormwater. WSMC 13.01.050(B), the City's stormwater runoff control standards are generally based on low impact development (LID) techniques that minimize impervious surfaces and infiltrate stormwater on site. Tight line conveyance of stormwater onto adjacent property will be allowed only if there is no other feasible alternative and only if the proposed location and volume of runoff will not change.

In additional to the WSMC, the City's SMP requires that all shoreline development, both during and after construction, minimize impacts related to surface runoff through control, treatment, and release of surface water runoff and its supplements such that there is no net loss of receiving water quality in the shoreline environment. The SMP also states that the all new development within the shoreline jurisdiction must connect to the City's sanitary sewer system and must comply with Ecology's *Stormwater Management Manual for Eastern Washington* (Ecology 2004, or most current edition).

5.2.2 Erosion and Sediment Control and Planning

WSMC 13.01.060 includes erosion and sediment control standards that contribute to local restoration goals. According to the code, the City official may require modifications to the erosion and sedimentation control plan at any time if the plan proves to be ineffective in preventing the discharge of sediment onto surface waters, wetlands, the right-of-way, or adjacent property. Some of the additional standards within the code that contribute to restoration goals include the following:

- Natural vegetation should be retained and protected wherever possible.
- Stream and wetland areas shall not be disturbed.
- Sedimentation barriers, such as filter fences and straw bales, shall be placed to control sedimentation from entering streams, wetlands, or adjoining property. The sedimentation barriers shall be installed prior to site clearance or grading activities.
- Critical areas, as determined by the city official, cleared of vegetation may be required to be temporarily stabilized with mulch, sod, mat or blanket in combination with seeding, or equivalent nonvegetative materials, such as mat or blanket, if in the opinion of the city official such an area represents an erosion hazard. Prior to the completion of construction, all such slopes shall be permanently stabilized by seeding.
- Stormwater inlets and culverts shall be protected by sediment traps or filter barriers.
- Soil storage piles or fill shall be located so as to minimize the potential for sedimentation of streams, wetlands, or adjacent property. Where, in the opinion of the building official, a soil storage area or fill has the potential for causing sedimentation of streams, wetlands, or adjoining property, the building official may require temporary stabilization measures.

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- Under no conditions shall sediment from the construction site be washed into storm sewers, drainage ways, or streams.

- The city official may make periodic inspections to ascertain that erosion and sediment control measures as proposed have been implemented and are being effectively maintained.

5.2.3 Land Divisions Planning

WSMC 16.15.0630 requires site evaluation for critical areas prior to preparation of preliminary plans for a proposed subdivision, which supports local restoration goals. The standard also requires that the applicant shall meet with the administrator to assess whether the proposed development site includes one or more critical areas such as a wetland, waterbody, sensitive habitat area or geological hazard area as identified, classified and protected by city ordinance. The WDFW must be notified of all applications to divide land within the city limits prior to determination of completeness, and a joint visit to the site may be necessary. If the administrator determines that a critical area is present or likely to be impacted by a proposed development, the applicant must first complete a critical areas application, review, and report, with appropriate protective measures identified, prior to preparation of preliminary development plans.

5.3 WY-KAN-USH-MI WA-KISH-WIT (Spirit of the Salmon): The Columbia River Anadromous Fish Restoration Plan

The *1995 WY-KAN-USH-MI WA-KISH-WIT (Spirit of the Salmon): The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes* (Columbia River Inter-Tribal Fish Commission 1995) and *2014 Update* (Columbia River Inter-Tribal Fish Commission 2014) provide a plan to restore the Columbia River salmon within an adaptive management framework. The plan includes institutional, technical, and watershed- or subbasin-specific recommendations. Some of the recommendations discussed in the plan that could apply to the City's shoreline restoration include: (1) eliminating land-use practices that degrade water quality, (2) restoring riparian vegetation within the potential park on the County-owned parcel located in the middle of Reach 1, and (3) developing and making restoration monitoring data available through a coordinated information system.

5.4 Columbia River Gorge National Scenic Area Management Plan

The Columbia River Gorge National Scenic Area Management Plan was adopted in 2004 is administered by the Columbia River Gorge Commission. The management plan includes goals, objectives, policies, and guidelines for resources conservation and enhancement, as well as programs for recreation development, economic development, strategies for enhancement, and education. Under the management plan, the City is considered an urban area that is exempt from the management plan. However, the City is still eligible to receive federal funds under the Scenic Area Act.

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The types of natural resource enhancement strategies discussed in the management plan that could apply to the City's shoreline restoration include: (1) enhancing soil and water resources along the shoreline located within the City's jurisdiction, (2) establishing cooperative programs to enhance natural areas such as the potential park on the County-owned parcel located in the middle of Reach 1, and (3) developing educational and technical assistance programs to expand public awareness and understanding of ecological principles and ecosystem management within the City.

6.0 POTENTIAL PROJECTS

In accordance with the SMP guidelines (WAC 173-26-201(2)(f)), this section of the restoration plan identifies additional projects and programs needed to achieve local restoration goals, and implementation strategies, including identifying prospective funding sources for those projects and programs. Restoration activities and programs are expected to improve shoreline functions including water quantity, water quality, and habitat within the City's jurisdiction.

The City does not anticipate leading most of the restoration projects and programs because of budget and staffing limitations; however, the City's SMP, Comprehensive Plan, and the WSMC all provide important guidance and support for nonprofit, governmental, and private entities to implement various shoreline restoration opportunities. Potential funding sources may include grants through a variety of governmental and nonprofit agencies, such as the Washington State Recreation and Conservation Office, the National Scenic Area Act, the U.S. Forest Service, the National Fish and Wildlife Foundation, the Washington State Department of Fish and Wildlife, Ecology, the Community Development Block Grant – General Purpose Grant Program, and the Rural Community Assistance Corporation – Environmental Infrastructure Loan Program. The potential restoration projects and plans discussed in this section will require further examination by the City of their costs, benefits, and feasibility.

There are several general restoration opportunities that have the potential to improve shoreline functions within the City's jurisdiction. These include, but are not limited to, the following: native shoreline vegetation plantings, revegetation of disturbed areas, removal of non-native and invasive species, environmental stewardship and education programs, environmental cleanup projects, removal of shoreline armoring, reduction of impervious surface land cover, and baseline and post-restoration monitoring studies to evaluate effectiveness. Cooperative restoration actions involving local, state, and federal agencies; Native American tribes; non-government organizations (e.g. Bingen-White Salmon Community Partners, the Mid-Columbia Fisheries Enhancement Group and their partners); private companies; and landowners is encouraged.

Restoration opportunities within Reach 1 are limited by the location of the BNSF railroad parallel to the Columbia River and the construction of dams on the Columbia River, which have altered natural ecosystem processes. However, the County-owned parcel located in the middle of Reach 1 is targeted as a park and presents opportunities

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for improving shoreline ecological functions as well as public access. The potential shoreline restoration opportunities within Reach 1 include:

1. Eradicating invasive species, including but not limited to, Himalayan blackberry *(Rubus armeniacus)* and reed canarygrass *(Phalaris arundinacea)*, and replanting with native trees and shrubs. Noxious weeds should be managed and controlled in a way that retains native vegetation, controls erosion, and preserves water quality. Use of nontoxic or natural controls is preferred;

2. Providing incentives for the retention and planting of native vegetation, and discouraging non-native vegetation and lawns because of their need for more water, which can contribute to erosion, and fertilizers, which can negatively affect water quality. Incentives for retaining and planting native vegetation may include flexibility in the application of development regulations such as setbacks;

3. Promoting vegetation conservation and restoration in order to mitigate the direct, indirect, and/or cumulative impacts of shoreline development, wherever feasible;

4. Minimizing impervious surfacing for parking lot/space areas, trails, and pathways through the use of alternative surfaces and/or elevated walkways where feasible;

5. Removing armor stones west of the Hood River-White Salmon Interstate Bridge that are located in the terrestrial environment, but within the shoreline jurisdiction;

6. Removing the old fence line along the eastern boundary of the County-owned property to allow wildlife movement;

7. Retrofitting existing stormwater control facilities to improve water quality;

8. Promoting environmental cleanup projects (i.e., removal of floating debris or waste) by environmental stewardship groups;

9. Maintain the current railroad habitat crossing at the southeast corner of the recreational vehicle park as a consideration for wildlife migration;

10. Addressing stormwater from the Hood River-White Salmon Interstate Bridge; and

11. Creating educational materials (e.g., brochures, web-based resources, educational signs) for the potential park location on the County-owned parcel within the middle of Reach 1. These materials should be designed to expand public awareness and understanding of ecological principles, shoreline restoration, and ecosystem management within shorelines.

Similar to Reach 1, restoration opportunities within Reach 2 are limited by the location of the BNSF railroad parallel to the Columbia River and the construction of dams on the

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Columbia River, which have altered natural ecosystem processes. Reach 2 is not located within the City's jurisdiction, and therefore, no restoration activities are recommended for it within this restoration plan.

7.0 IMPLEMENTATION TARGETS

In accordance with the SMP guidelines (WAC 173-26-201(2)(f)), this section of the restoration plan identifies timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals. Specific timelines and benchmarks for implementing individual components of this restoration plan are difficult to determine without additional information about their costs and feasibility. Timelines should also be developed in terms of prioritizing restoration projects that have the greatest restoration potential. Because of funding constraints or other limitations, it is possible that the scope and timeline of shoreline restoration projects within the City's jurisdiction may change.

8.0 PROGRAM STRATEGIES

In accordance with the SMP guidelines (WAC 173-26-201(2)(f)), this section of the restoration plan provides mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals. There are several potential implementation strategies for shoreline restoration within the City's jurisdiction. These may potentially include, but are not limited to, the following:

1. Providing incentives for shoreline restoration such as waiving some or all development fees for projects that include a voluntary restoration component;

2. Creating a preferential tax relief incentive for landowners that preserve natural shoreline features as "open space" for ecological benefit and public access;

3. Establishing a local City shoreline restoration fund that could match state and/or federal grants for restoration within the City;

4. Developing a resource directory and making it publically available for City departments and property owners that are interested in shoreline restoration within the City's jurisdiction;

5. Coordinating community volunteers, non-profit organizations, and other stakeholders that are interested in shoreline restoration and environmental stewardship; and

6. Coordinating with Klickitat County to jointly plan, fund, and pursue shoreline restoration opportunities within the City's shoreline jurisdiction.

In order to evaluate restoration project success, it is recommended that each project include the collection of baseline data and a minimum of a five-year, post-restoration

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monitoring and maintenance period. Additionally, it is recommended that the City or designated third-party representative(s) track restoration projects and their outcomes.

9.0 SUMMARY

This restoration plan supports the City of White Salmon (City) Shoreline Master Plan (SMP) update (City of White Salmon 2015) and has been prepared to comply with the SMP guidelines (WAC 173-26-201(2)(f)). The restoration plan identifies degraded areas within impaired functions and the potential for restoration, establishes goals and priorities for restoration, identifies existing and ongoing shoreline restoration projects, identifies additional projects and programs to achieve restoration goals, identifies timelines and benchmarks for implementing restoration projects and achieving goals, and provides strategies for ensuring project effectiveness. The restoration opportunities provided in this restoration plan will require further investigation and analysis in order to assess their costs, benefits, timelines, and overall feasibility within the City's shoreline jurisdiction.

10.0 REFERENCES

City of White Salmon. 2015. City of White Salmon Shoreline Master Program – Draft. Prepared by BergerABAM, Inc.

City of White Salmon. 2012. White Salmon Comprehensive Plan. White Salmon, WA. Available online at: http://white-salmon.net/sites/default/files/documents/Adopted%20Ord%202012-11-901%20Adopting%20Comp%20Plan_0.pdf

City of White Salmon. 1984. Klickitat County Shorelines Master Plan Update. Adopted by White Salmon in 1984.

City of White Salmon Municipal Code. Updated on 26 June 2015. Available at: https://www.municode.com/library/wa/white_salmon/codes/code_of_ordinances?nodeId=16844. Accessed on 8 October 2015.

Columbia River Inter-Tribal Fish Commission. 1995. 1995 WY-KAN-USH-MI WA-KISH-WIT (Spirit of the Salmon): The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes.

Columbia River Inter-Tribal Fish Commission. 2014. 2014 Update to the WY-KAN-USH-MI WA-KISH-WIT (Spirit of the Salmon): The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes.

Columbia River Gorge Commission. 2004. Management Plan for the Columbia River Gorge National Scenic Area. Available at: http://www.gorgecommission.org/managementplan.cfm

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Northwest Power and Conservation Council. 2004. Columbia Gorge Mainstem Plan. Available at: http://www.nwcouncil.org/media/20033/ColumbiaGorgeInvAssPlan.pdf

Washington State Department of Ecology (Ecology). 2012. Focus on Water Availability: Wind-White Salmon Watershed, WRIA 29. Ecology Publication No. 11-11-033, pp. 1-4.

Washington State Department of Ecology (Ecology). 2004. Stormwater Management Manual for Eastern Washington. Publication No. 04-10-076.

Washington State Department of Ecology (Ecology). 1971. Shoreline Management Act of 1971: Chapter 90.58 RCW. Olympia, WA.

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Restoration Plan
City of White Salmon Shoreline Master Program
White Salmon, Washington

Appendix A
Figures

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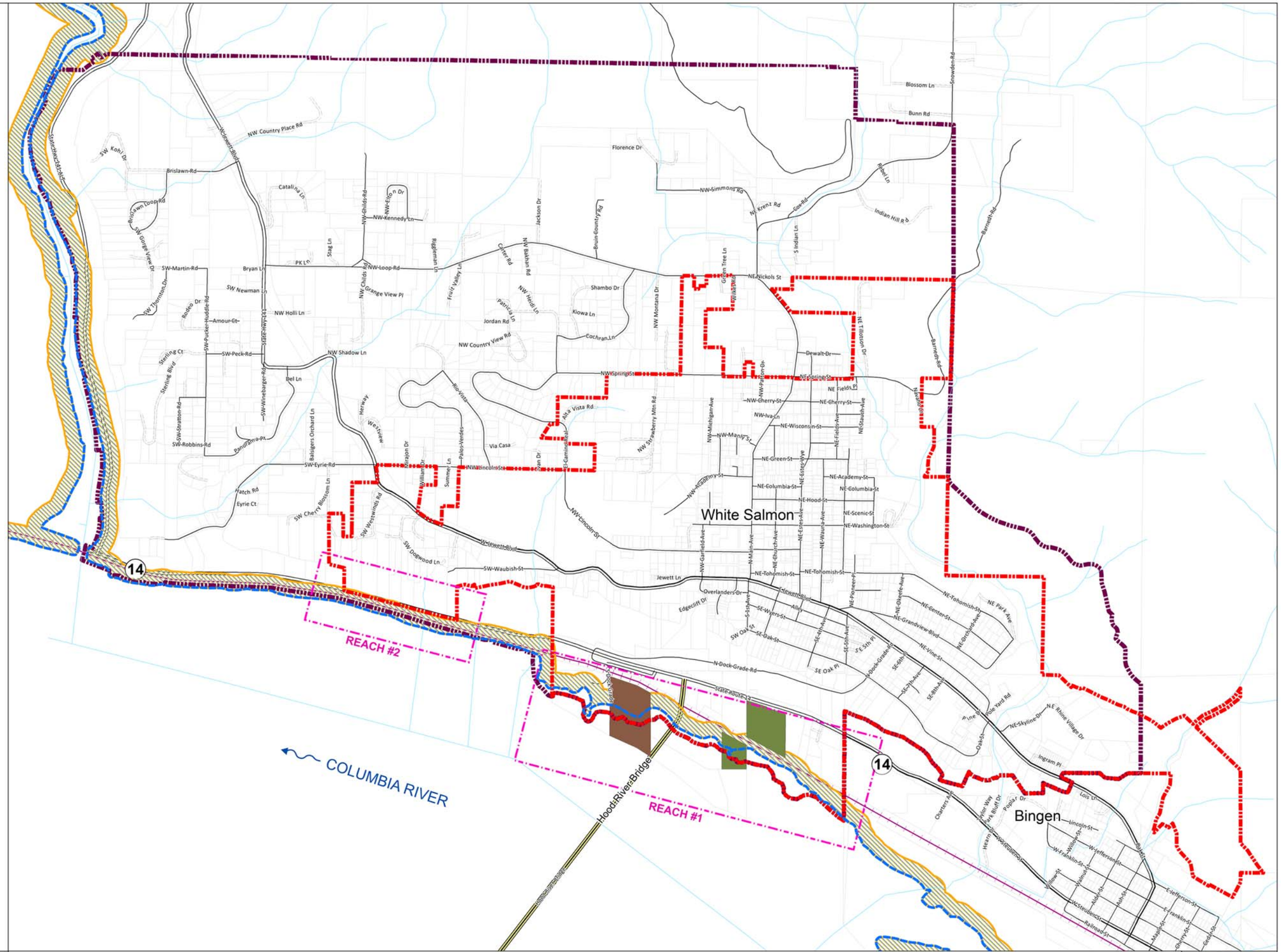
Shoreline Jurisdiction

- Shoreline
- 200' Shoreline Jurisdiction

Source: National Hydrography Dataset: Washington State Department of Ecology web site (www.ecy.wa.gov)

Floodplain

Source: FEMA Flood Data: Washington State Department of Ecology web site (www.ecy.wa.gov)



Map Symbols

- White Salmon City Limits
- White Salmon Urban Area
- Shoreline_Reach
- Parcel Lines
- Columbia River Intertribal Fish Commission
- Native American Tribes Fishing Site

Roads

- Bridge
- City; County; Other Govt
- Private
- State
- Railroad

N

0 500 1,000 2,000 Feet

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Figure 1: Shoreline Jurisdiction Areas

White Salmon Shoreline Master Program

NOVEMBER 2014

CITY OF WHITE SALMON

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Shoreline Jurisdiction

Shoreline

Source: National Hydrography Dataset: Washington State Department of Ecology web site (www.ecy.wa.gov)

Shoreline Environment Designation

- Urban Conservancy
- High Intensity
- Aquatic

Map Symbols

- White Salmon City Limits
- White Salmon Urban Area
- Parcel Lines
- Water Bodies
- Stream

Roads

- Bridge
- City; County; Other Govt
- Private
- State
- Railroad

N

0 125 250 500 Feet

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Figure 2A: Shoreline Environment Designations Map - Reach 1

White Salmon Shoreline Master Program

DECEMBER 2014

CITY OF WHITE SALMON

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Shoreline Jurisdiction

Shoreline

Source: National Hydrography Dataset: Washington State Department of Ecology web site (www.ecy.wa.gov)

Shoreline Environment Designation

- Urban Conservancy
- High Intensity
- Aquatic

Map Symbols

- White Salmon City Limits
- White Salmon Urban Area
- Parcel Lines
- Water Bodies
- Stream

Roads

- Bridge
- City; County; Other Govt
- Private
- State
- Railroad

N

0 125 250 500 Feet

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Figure 2B: Shoreline Environment Designations Map - Reach 2

White Salmon Shoreline Master Program

DECEMBER 2014

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