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City of White Salmon
Cumulative Impacts Analysis



Prepared by
BergerABAM Inc.

October 2015

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**City of White Salmon
Shoreline Master Program
Cumulative Impacts Analysis**

Submitted to

**City of White Salmon
White Salmon, Washington**

October 2015

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CUMULATIVE IMPACTS ANALYSIS

City of White Salmon Shoreline Master Program Phase 3 – Environmental Designation, Policy and Regulation Development

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**CUMULATIVE IMPACTS ANALYSIS
CITY OF WHITE SALMON
SHORELINE MASTER PROGRAM**

1.0 INTRODUCTION

1.1 Shoreline Management Act Requirements

This cumulative impact analysis report supports the City of White Salmon (City) Shoreline Master Plan (SMP) update (City of White Salmon 2015). The City's SMP (City of White Salmon 1984) 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. The report assesses the potential cumulative impacts of shoreline development under the City's Draft SMP and is funded with grant assistance from the Washington State Department of Ecology (Ecology).

The SMA guidelines require that local SMPs regulate new development to "ensure no net loss of ecological functions and protection of other shoreline functions and/or uses." This report describes the anticipated shoreline development within the City and assesses the cumulative impacts of development on shoreline ecological functions over the long term. Projects that result in degradation of shoreline ecological functions will require mitigation that returns the ecological function back to baseline conditions. The jurisdiction must be able to demonstrate that it has accomplished that goal through an analysis of cumulative impacts that might occur through implementation of the Draft SMP.

The findings of this report are to be used to inform decisions on policies, programs, and regulations in the Draft SMP to address adverse cumulative impacts and protect shoreline ecological functions.

1.2 Methodology

WAC 173-26 requires the use of a particular framework to evaluate the potential cumulative impacts on shoreline functions and processes that may result from activities or development under the City's proposed SMP over time. The framework includes the following factors.

1. Current circumstances affecting the shorelines and relevant natural processes;
2. Reasonably foreseeable future development and use of the shoreline; and
3. Beneficial effects of any established regulatory programs under other local, state and federal laws.

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. It also provided recommendations for shoreline enhancement and restoration. In addition, the report assesses development potential based on proposed environment designations contained in the Draft SMP.

2.0 STUDY AREA

The City is located in Klickitat County, Washington on the north bank of the Columbia River Gorge National Scenic Area and contains shorelines associated with state Water Resource Inventory Area (WRIA) 29, Wind-White Salmon. The City encompasses approximately 1.24 square miles (U.S. Census Bureau 2014) and is surrounded by rural residential and agricultural lands 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 it 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 (City of White Salmon 2014). See this report for a detailed review of 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.

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 Riverfront District. Table 1 provides an overview of the functional analysis of this reach from the City’s Inventory and Characterization Report (City of White Salmon 2014).

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.

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 the 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 in the basin 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 River has had some hydrologic processes restored with the recent removal of the Condit Dam, which was built for hydropower in the early 20th 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 OHWM 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 summarizes 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
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

Shoreline Function	Alteration and Assessment of Functions	Function Score
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
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 allochthonous 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.

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

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 due to 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 DEVELOPMENT AND USE POTENTIAL

This section includes development and use potential within the City's shoreline jurisdiction. The information provided in this section is summarized from the City's Inventory and Characterization Report (City of White Salmon 2014) and from discussions related to development opportunities with the City's Treasurer/Clerk, Leana Johnson, on 31 July 2015. The Draft SMP also addresses the potential need for unanticipated development to protect public health, safety, or the environment in cases of emergency.

4.1 Columbia River Reach 1

The City comprehensive plan designates Reach 1 as Riverfront Planned Development. The allowable uses in this zone include planned development for recreational, commercial, light industrial, and limited residential uses, and is especially intended for those uses that are water-dependent or where the proximity to the Columbia River is necessary for the development (White Salmon Municipal Code [WSMC] 17.50.010). Currently, the shoreline for the City is underutilized with agricultural uses in the western portion of Reach 1 and natural open space in the remaining portions of Reach 1. The level of expected change in land use patterns in Reach 1 is moderate and will primarily be related to redevelopment or additions on existing properties because the central, undeveloped portion of the reach is expected to become a City park. Any unanticipated development to protect public health, safety, or the environment in cases

of emergency may only occur on current development and cannot include permanent structures.

The BNSF tracks parallel the Columbia River for the length of the reach and will continue in use over the long term. The tracks limit access to the undeveloped portion of the reach and will likely continue to be a partial access barrier in the future. Future uses may include public access to the shoreline, passive recreational trails, and interpretive markers as appropriate. The agricultural use in the western section of Reach 1 is likely to continue in the near term, but may present an opportunity for a land use change in the future on all or a portion of the property. Potential recreational, commercial, light industrial, and limited residential uses may be able to provide public access to the shoreline depending on site-specific conditions. Table 5 provides specific potential uses for parcels within Reach 1 according to the discussions related to development opportunities with the City.

Table 5. Reach 1 Parcels, Current Land Uses, and Potential Uses

Parcel #	Current Land Use	Potential Uses
03102443001700	Nursery	Bed and breakfast/resort in existing house structure at bend in SE Dock Grade Road. Public access to water of resort. Existing nursery use continues for remainder of site.
03102512000500	Nursery	
03102512000400	Tribal fishing site	Tribal site. Not part of shoreline jurisdiction.
03102443009900	Railroad tracks	Ongoing maintenance activities for railroad including tie, track, riprap replacement. May contain pedestrian overpass from upland transit parking lot. Safety fence along southern boundary may be installed to prevent unauthorized access to the tracks.
03102511000200	Open space	City park with disc golf course. Course would have concrete/gravel pads and baskets for disks. Could be done while clearing some undergrowth, but maintaining majority of vegetation. Trails, picnic sites possible. No water or sewer utilities for this area proposed. Portable paddle board rental shack near water. No surface parking proposed on this parcel. Possible shoreline habitat enhancements, including vegetation, habitat alcoves, and habitat soil mix.
03102511000300	Columbia River	No development possible.
03102514000100	Columbia River, small island	No development possible.
03102511000500	Open space	U.S. Army Corps of Engineers (USACE) ownership. Existing pedestrian walkway under the railroad and across this property. Gravel pedestrian access path and maintenance vehicle access may be created connecting to parcel 03102511000200.
03113000000500	Railroad tracks	Ongoing maintenance activities for railroad including tie, track, riprap/bank stabilization and/or replacement.
03102511003000	Recreational vehicle (RV) park and office	Very little area within shoreline jurisdiction. Pedestrian access and underpass. RV park development in upland areas outside of shoreline jurisdiction. Property is currently on septic.
03113022000600	Tribal office	Tribal site. Not part of shoreline jurisdiction.
03113022001000	Vacant	Assume light industrial development of property with development of business park buildings and offices. Stormwater treatment would occur in non-jurisdictional area. Limited

Parcel #	Current Land Use	Potential Uses
		potential for development of shoreline jurisdiction due to narrow width of parcel and slopes in this location.
03113055000100	Two buildings (sail production for boats and windsurfing)	Assume continuing use of this property as is. No plans for expansion.
03113055000300	One building	Possible redevelopment as light industrial.

4.2 Columbia River Reach 2

Much of this reach is owned by BNSF (the tracks) and the Washington State Department of Transportation (SR 14). Both transportation uses run parallel to the shoreline and these uses will continue over the long term. The steep topography of this reach makes significant changes to land use highly unlikely because slopes 40 percent and greater (as designated in the comprehensive plan for this area) are prohibited from development according to WSMC 18.10.412(D). This reach is highly likely to remain in a seminatural condition with existing transportation infrastructure in place.

5.0 PROTECTIVE PROVISIONS

5.1 Shoreline Environment Designations

The SMP update requires the shoreline to be classified into specific shoreline environment designations in order to protect or enhance the current or desired character of shorelines. The shoreline environment designations are based on existing land use patterns, baseline inventory and analysis results, goals stipulated in the City's comprehensive plan, and Ecology criteria.

5.1.1 Columbia River Reach 1

The High Intensity and Urban Conservancy shoreline environment designations are proposed in the Draft SMP for Reach 1. The Urban Conservancy shoreline environment designation is proposed for the open space areas along the central portion of the shoreline jurisdiction and the High Intensity designation is proposed for the existing commercial agricultural use and all remaining areas not covered under the Urban Conservancy designation.

The Urban Conservancy environment designation proposed in the Draft SMP is relatively restrictive requiring prioritizing water-oriented uses. Many non-water-oriented uses, and residential uses are prohibited, while high-impact uses, such as marinas, water-related commercial and industrial, and transportation uses, are allowed conditionally. In addition, the Urban Conservancy environment requires large setbacks for non-water-dependent uses generally ranging from 75 to 100 feet.

The High Intensity designation is proposed for areas that have been previously cleared and graded for development and will allow for a variety of water-oriented, recreation, residential, transportation, and utility uses with non-water-oriented uses requiring

conditional use permits. Setbacks range from 25 to 100 feet for water-related and non-water-oriented uses.

5.1.2 Columbia River Reach 2

The Urban Conservancy shoreline environment designation is a candidate shoreline use environment for the proposed SMP for Reach 2.

5.2 General Policies and Regulations

This subsection provides an overview of the policies and supporting regulations included in the City's proposed SMP that are intended to protect the shoreline functions within the City's jurisdiction and prevent adverse cumulative impacts. See the City's proposed SMP and Table 6 (General Cumulative Impacts Assessment) of this report for more detailed information on these policies and regulations, including those which are designed to protect specific shoreline functions, such as water quality, water quantity, and habitat. Below is a summary of many of the proposed SMP's policies and regulations.

1. All proposed shoreline uses and development, including those that do not require a shoreline permit, must conform to the SMA, Chapter 90.58 RCW, and to the policies and regulations of the proposed SMP.
2. If provisions within the proposed SMP conflict, or where there is a conflict with other City policies and regulations, the provisions most directly implementing the objectives of the SMA, as determined by the Shoreline Administrator, shall apply unless specifically stated otherwise.
3. Land shall not be cleared, graded, filled, excavated, or otherwise altered prior to issuance of the necessary permits and approvals, including a Shoreline Statement of Exemption for a proposed shoreline use or development to determine if environmental impacts have been avoided, minimized, and mitigated to result in no net loss of ecological functions.
4. Shoreline uses and developments that are water-dependent shall be given priority, followed by water-related and water-enjoyment uses. Non-water oriented uses shall not adversely impact or displace water-oriented shoreline uses.
5. The applicant shall demonstrate that all reasonable efforts have been taken to avoid, and where unavoidable, minimize and mitigate impacts such that no net loss of critical area and shoreline ecological function is achieved. Mitigation shall occur in the following order of priority:
 - a. Avoiding the impact altogether by not taking a certain action or parts of an action; may necessitate a redesign of the proposal.

- b. Minimizing unavoidable impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts; applicant shall seek to minimize fragmentation (i.e., shared public facility corridors) of the resource to the greatest extent possible.
 - c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
 - d. Reducing or eliminating the impact over time by preservation and maintenance operations.
 - e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; compensatory mitigation shall be designed to achieve the functions as soon as practicable.
 - f. Monitoring the impact and the compensation projects and taking appropriate corrective measures.
6. In addition to compensatory mitigation, unavoidable adverse impacts may be further addressed through voluntary restoration efforts.
 7. Shoreline uses and developments shall not cause impacts that require remedial action or loss of shoreline ecological functions on other properties.
 8. On navigable waters or their beds, all uses and developments should be located and designed to:
 - a. Minimize interference with surface navigation.
 - b. Consider impacts to public views.
 - c. Allow for the safe, unobstructed passage of fish and wildlife, particularly species dependent on migration.
 9. Hazardous materials shall be properly disposed of and other steps taken to protect the ecological integrity of the shoreline area consistent with the other policies and regulations of the proposed SMP, as amended, and all other applicable federal, state, and local statutes, codes, and ordinances. Environmental remediation actions pursuant to a consent decree, order, or agreed order issued under RCW 70.105(D) are exempt from the requirement to obtain a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance under the proposed SMP but must comply with the substantive requirements of the Act and the proposed SMP. Any development or redevelopment on a remediated site must occur

consistent with any covenants running with the land, the Act, and the proposed SMP.

10. The effect of proposed in-stream structures on bank margin habitat, channel migration, and floodplain processes should be evaluated during permit review.

5.3 Critical Areas Protection

Appendix B of the SMP also incorporates critical areas protections. The critical area protections are based on the City's existing critical areas ordinance and are intended to protect and preserve the City's critical areas because they perform many valuable social and ecological functions. They help relieve the burdens of urban development, including congestion, noise and odors, air pollution, and water quality degradation. The critical areas SMP provisions establishes protections, regulations, and additional protective buffers for the following five types of critical areas:

1. ***Fish and Wildlife Habitat Conservation Areas:*** The purpose of this designation is to preserve and protect those areas with which anadromous fish, threatened and endangered species, and species of local importance have a primary association. Such areas include the documented presence of species listed by the federal government or the state as endangered, threatened, and sensitive species; sites containing and located within 300 feet of habitat for Priority Habitats and Species as listed and mapped by the WDFW; priority habitats mapped by WDFW; all streams that meet the criteria for streams set forth in WAC 22-16-030 and WAC 22-16-031; and heritage tree sites. Some of the provisions for these critical areas include guidance for anadromous fish and heritage trees, as well as the following.
 - a. Allowed activities and uses within river crossings
 - b. Alignment, construction, and maintenance of trails within wetland and their buffers
 - c. Proposed utilities
 - d. Proposed stormwater facilities
 - e. Floodway dependent structures or installations
 - f. Streambank stabilization
2. ***Geological Hazardous Areas:*** These areas pose a threat to the health and safety of citizens when incompatible development is sited in areas of significant hazard. . These geologic hazards include erosion hazards, landslide hazards, seismic hazards, and other geological events, such as mass wasting, debris flows, rock falls, and differential settlement. Additionally, slopes greater than or equal to 40 percent are considered unbuildable and development is not allowed. Activities on sites containing erosion or landslide hazards shall meet the following requirements:

- a. A buffer shall be established for all edges of erosion or landslide hazard areas. The size of the buffer shall be determined by the city or its agent to eliminate or minimize the risk of property damage, death, or injury resulting from erosion and landslides caused in whole or part by the development, based upon review of and concurrence with a critical areas report prepared by a qualified professional.
 - b. The minimum buffer shall be equal to the height of the slope, or 50 feet, whichever is greater.
 - c. The buffer may be reduced to a minimum of 10 feet when a qualified professional demonstrates to the city or its agent's satisfaction that the reduction will adequately protect the proposed development, adjacent developments and uses, and the subject critical area.
 - d. The buffer may be increased when the city or its agent determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.
 - e. Alterations of an erosion or landslide hazard area and/or buffer may only occur for activities for which a geotechnical analysis is submitted and certifies that:
 - i. the development will not increase surface water discharge or sedimentation to adjacent properties beyond the pre-development condition;
 - ii. the development will not decrease slope stability on adjacent properties; and
 - iii. such alteration will not adversely impact other critical areas.
3. **Flood Hazard Areas:** These areas have been designated "to protect public health, safety, and welfare from harm caused by flooding and to maintain important hydrologic function of aquatic habitats" (WSMC 18.10.510). "Flood hazard areas" applies to areas identified in the City by Federal Emergency Management Agency flood insurance rating maps. These areas are typically mapped as the 100-year floodplain. In the City, a narrow band of 100-year floodplain is mapped along the Columbia River. The City will require necessary technical assessment of local site-specific information to determine extent of a flood hazard area on specific parcels.
4. **Critical Aquifer Recharge Areas:** These areas are designated to protect groundwater quality and quantity for public water supply and to maintain hydrologic functions of aquatic areas. These areas contribute significantly to the replenishment of groundwater and, because of their prevailing geologic conditions associated with infiltration rates, have a high potential for contamination of ground water resources. According to the City's critical areas ordinance, there are no known critical aquifer recharge areas within city limits.
5. **Wetland Critical Areas:** The wetland section of the critical areas provisions in Appendix B provides protection to existing wetlands and requires no net loss of wetland functions and values resulting from development. The National Wetland

Inventory maps created by the U.S. Fish and Wildlife Service (USFWS) identify seven wetland areas in the City, with five located in the 200-foot shoreline buffer. The High Intensity and Urban Conservancy shoreline environment designations would both be considered high intensity uses, so the buffer widths would be 100 feet for Category I and II wetlands, 80 feet for Category II wetlands, and 50 feet for Category IV wetlands.

5.4 Other Protective Regulations

There are several local, state, and federal regulations implemented by a variety of agencies that may provide beneficial effects for both development and protection within the City's shoreline jurisdiction. Some of these regulations include, but are not limited to, the Aquatic Lands Act, State Environmental Protection Act, Hydraulic Code, Clean Water Act (CWA) (Sections 401, 402, and 404), Endangered Species Act (ESA), Rivers and Harbors Act, and the Comprehensive Environmental Response, Compensation, and Liability Act. These regulations are briefly discussed below.

5.4.1 Local Regulations

The local regulations that are most applicable to shoreline development within the City's jurisdiction include, but are not limited to, WSMC, including Title 16 "Land Divisions," Title 17 "Zoning," and Title 15 "Buildings and Construction," and all other applicable code provisions; the White Salmon Comprehensive Plan; and applicable City stormwater regulations. These local regulations are anticipated to provide positive impacts and minimize cumulative impacts to shoreline functions within the City's shoreline jurisdiction.

5.4.2 State Regulations

There are several state regulations that are pertinent to the development of shorelines within the City's jurisdiction that are anticipated to provide beneficial effects to the City's shoreline functions and minimize cumulative impacts. The state regulations include, but are not limited to:

1. **Aquatic Lands Act (RCW Chapter 79.105 through 79.135):** This statute directs the Washington Department of Natural Resources (WDNR) to manage state-owned aquatic lands to achieve a balance of public benefits, including public access, navigation and commerce, environmental protection, renewable resource use, and revenue generation when consistent with other mandates. If a proposed project requires the use of state-owned aquatic lands, then the project may be required to obtain an Aquatic Use Authorization from WDNR.
2. **State Environmental Policy Act:** This act provides a tool to identify and mitigate potential environmental impacts that may result from government decisions. These decisions may be related to issuing permits for private projects, constructing public facilities, or adopting regulations, policies, or plans. This information can be used to change a proposal to reduce likely impacts and/or apply conditions to or deny a proposal based on the adverse environmental impacts.

3. **Hydraulic Code (RCW 77.55):** This code gives the WDFW the authority to review, condition, approve, or deny any construction activity that may use, divert, obstruct, or change the bed or flow of state waters. These types of projects must obtain a Hydraulic Project Approval from WDFW, which will contain conditions and site-specific best management practices to limit damage to aquatic species and their habitats.

5.4.3 Federal Regulations

Federal regulations are important in the design and implementation of shoreline projects, and ensure that shoreline impacts are avoided, minimized, and/or mitigated. The federal regulations that are most pertinent to shoreline development within the City's jurisdiction are discussed briefly below. Other relevant federal regulations include the National Environmental Policy Act, Anadromous Fish Conservation Act, Clean Air Act, and the Migratory Bird Treaty Act.

1. **Clean Water Act, Section 401:** This act requires all projects applying for a federal permit or license that may result in discharge to jurisdictional water to provide certification of compliance with the state's water quality plan. The Section 401 review typically occurs concurrently with a review under Section 404 of the CWA.
2. **Clean Water Act, Section 402:** This act requires the Environmental Protection Agency (EPA) to develop and implement the National Pollutant Discharge Elimination System program, which controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The EPA delegated the responsibility to Ecology for implementing this program in Washington.
3. **Clean Water Act, Section 404:** This act provides the USACE, under the oversight of the EPA, the authority to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. The USACE must review and approve many activities in the shoreline, such as depositing fill, dredged, or excavated material, in waters and/or adjacent shorelines, shoreline and wetland restoration projects, installation of pilings, culvert installation or replacement, and other activities.
4. **Endangered Species Act:** Section 9 of the ESA prohibits the "take" of federally listed species by any individual, organization, or agency, including the City. "Take" is defined by the ESA as actions to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage with a listed species. Section 9 of the ESA requires the USACE to consult with the National Marine Fisheries Service (NMFS) and the USFWS on any projects that may fall within the USACE's jurisdiction that could affect listed species. See the City's proposed SMP for more information on the ESA-listed species that are known to or may occur within the City.

5. **Rivers and Harbors Act:** Section 10 of this act gives the USACE the authority to regulate activities that may affect navigable waters of the U.S., which are waters that are subject to the ebb and flow of the tide and have been used, presently used, or may be used to transport interstate or foreign commerce. Proposals to construct new or modify existing in-water structures, excavate or dredge, etc., must be reviewed and approved by the USACE.
6. **Comprehensive Environmental Response, Compensation, and Liability Act:** This act established requirements for closed and abandoned hazardous waste sites, liability for releases of hazardous waste at these sites, and a fund to provide for cleanup when responsible parties are not identified. Any development activity within the City's shoreline jurisdiction that takes place below the OHWM of a water of the United States or a water of the state will trigger the need for review by federal or state agencies.

5.5 Shoreline Restoration Opportunities

An important component of the SMP update is the development of a restoration plan that identifies opportunities to restore impaired shoreline ecosystem functions. Areas identified for restoration must be consistent with WAC 173-26-201(2)(f), which requires the following:

1. Identification of degraded areas, impaired ecological functions, and sites with potential for ecological restoration.
2. Establishment of overall goals and priorities for the restoration of degraded areas and impaired ecological functions.
3. Identification of 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. Identification of additional projects and programs needed to achieve local restoration goals and of implementation strategies, including prospective funding sources, for the projects and programs.
5. Identification of timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals.
6. Providing mechanisms or strategies to ensure the implementation of restoration projects and programs according to plans, and to review, as appropriate, the effectiveness of the projects and programs in meeting the overall restoration goals.

Restoration opportunities within the City's shoreline jurisdiction 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 that is targeted as a park presents opportunities for restoration as well as public access. These restoration activities may help to offset or minimize potential adverse incremental cumulative impacts within the City's shoreline jurisdiction. Potential restoration opportunities 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.
2. Removing armor stones west of the Hood River-White Salmon Interstate Bridge that are located in the terrestrial environment, but within the shoreline jurisdiction.
3. Removing the old fence line along the eastern boundary of the County-owned property to allow wildlife movement.
4. Addressing stormwater from the Hood River-White Salmon Interstate Bridge.

These restoration opportunities will be discussed in more detail in the restoration plan scheduled for development later in the SMP update process. Addressing the areas for restoration listed above and outlining specific restoration activities as discussed above will ensure the consistency of the restoration plan with WAC 173-26-201(2)(f).

6.0 CUMULATIVE IMPACTS ASSESSMENT/NET EFFECT

This section includes the potential cumulative impacts of shoreline development under the City's proposed SMP and other regulatory provisions, and the anticipated net effect on shoreline function for each shoreline inventory reach within the City's jurisdiction. The discussion of existing conditions is based on the City's Inventory and Characterization Report (City of White Salmon 2014). Table 6 provides a summary of the general cumulative impacts assessment.

Table 6. General Cumulative Impacts Assessment

Shoreline Segment	Existing Conditions	Likely Development	Primary Shoreline Functions and Processes Potentially Impacted	Proposed SMP Provisions and Revisions	Effect of other Regulatory Requirements and Restoration Activities/Programs	Anticipated Net Effect on Shoreline Function
Columbia River Reach 1	<p>Includes the main section of shoreline within the City and is approximately 4,750 linear feet.</p> <p>Characterized by a non-linear natural shoreline that includes alcoves and areas that extend out into the river. Area landward of the shoreline is characterized by two ecosystems – a lowland riparian deciduous forest and a dry mesic oak-pine forest community.</p> <p>Land uses within the 200-foot shoreline buffer include agriculture, open space, commercial, and transportation (bridge and railroad). Zoning is Riverfront District.</p>	<p>The level of expected change in land use patterns in Reach 1 is moderate because the area is zoned Riverfront District. The BNSF tracks parallel the Columbia River for the length of the reach and will continue in use over the long term. The tracks limit access to the undeveloped portion of the reach and will likely continue to limit access in the future.</p> <p>Future uses may include public access to the shoreline, passive recreational trails, and interpretive markers as appropriate. The agricultural use in the western section of Reach 1 is likely to continue in the near term, and so it could present an opportunity for a land use change in the future. Potential recreational, commercial, light industrial, and limited residential uses could provide public access to the shoreline.</p> <p>Specific potential developments include the following:</p> <ul style="list-style-type: none"> • Conversion of a portion of a nursery into a bed and breakfast/resort in an existing house structure. • Railroad tracks will have ongoing maintenance activities (i.e., tie, track, and riprap replacement). May contain pedestrian overpass. • A USACE-owned property may have gravel added to create a pedestrian path to for future park improvements. • Open space may be converted to a city park with disc golf course and concrete/gravel pads and baskets for disks. Some vegetation would be cleared and picnic tables may be installed. Possible shoreline habitat enhancements including vegetation, habitat alcoves, and habitat soil mix. • Vacant property may be developed with light industrial development 	<p><u>Water Quantity:</u> Redevelopment and construction on lots could lead to an increase in water quantity being discharged to the Columbia River, particularly when more impervious surface cover is created.</p> <p><u>Water Quality:</u> Future development of open space and vacant lots could impact water quality by decreasing vegetative cover and increase the potential application of chemicals, fertilizers, and pesticides.</p> <p><u>Vegetation and Habitat:</u> Increased development in the open space, especially at the location of the potential city park, could reduce available vegetation and habitat.</p>	<p><u>SMP Shoreline Environment Designations:</u> The Urban Conservancy shoreline environment designation is proposed for the open space areas along the central portion of the City’s shoreline jurisdiction. SMP management policies for Urban Conservancy shoreline environment designation that address ecological functions include:</p> <ul style="list-style-type: none"> • Allowed uses are primarily those that preserve natural character, promote preservation of open space, floodplain or sensitive lands, or are appropriate for restoration (e.g., parks, trails and viewing platforms, and water-oriented recreational facilities, such as kayak or boat launches). • Proposed developments and uses must adhere to all applicable portions of the SMP related to stabilization, vegetation conservation, water quality, and shoreline modification to ensure that new development does not result in a net loss of shoreline ecological functions or degrade shoreline values. <p>The High Intensity shoreline environment designation is proposed for the existing commercial agricultural use, railroad, and all remaining areas not covered under the Urban Conservancy designation. The SMP management policies for the High Intensity shoreline environment designation that address ecological functions include:</p> <ul style="list-style-type: none"> • No net loss of shoreline ecological function is allowed as a result of new development. • Where applicable, new development must include environmental cleanup and restoration of the shoreline to comply with any relevant state and federal law. <p>Coordinated master planning between property owners is encouraged, including considering shared parking, stormwater, landscape, and shoreline access facilities in order to minimize impacts on shoreline resources, use land efficiently, and promote shoreline access.</p> <p><u>SMP Regulations for Vegetation Conservation (i.e., habitat):</u></p> <ol style="list-style-type: none"> 1. The following applies to any activity, development, or use that may result in the removal or impact to shoreline vegetation. 2. Removal of native vegetation should be avoided. Where removal of native vegetation cannot be avoided, it shall be minimized and mitigated to result in no net loss of shoreline ecological functions. Lost functions may be replaced by enhancing other functions provided that no net loss in overall functions is demonstrated and habitat connectivity is maintained. Mitigation shall be provided consistent with an approved shoreline mitigation plan and the priority vegetation system described below. 3. Shoreline mitigation plan. A shoreline mitigation plan shall be required for development proposals that exceed the thresholds identified in Chapter 2, Section 5 “Non-conforming Uses and Development” of the SMP. In addition, all activities that include clearing of native vegetation or surface grading within shoreline setbacks shall include a shoreline mitigation plan for review and approval by the City. The planting of native species, modification of existing nonconforming development that does not include expansion, the removal of hazard trees, or the removal of fewer than three trees in a three-year period shall not require a shoreline mitigation plan. 4. Clearing and grading for new development, redevelopment, or use expansions shall be limited to the minimum necessary to accommodate the use or expansion. In-tact stands of native vegetation shall be shown on project plans and new uses shall avoid impacting these areas, unless there is no other feasible location for the proposed use. Construction techniques such as establishing clearing limits, using low impact equipment near vegetated areas shall be implemented. 5. Only water-oriented uses are allowed within shoreline setbacks as further specified by Table 6-1 in the SMP. 6. Maintaining vegetated riparian areas to protect shoreline stability and ecological functions takes precedence over vegetation clearing to preserve or create views. Pruning for views shall be undertaken in compliance with this section. 7. Topping of trees is prohibited. 8. Pruning of trees that are not hazard trees is allowed in compliance with the National Arborist Association pruning standards. 9. Natural features, such as snags, stumps, logs, or uprooted trees, which support fish and other aquatic systems; do not intrude on the navigational channel; or threaten public safety, existing structures, and facilities, shall be left undisturbed when located in the Setback Zones 1 and 2. 10. Aquatic weed control shall only occur to protect native plant communities and associated habitats or where an existing water-dependent use is restricted by the presence of weeds. Aquatic weed control shall occur in compliance with all other applicable laws and standards and shall be done by a qualified professional. <p><u>SMP Regulations for Water Quality and Quantity:</u></p> <ol style="list-style-type: none"> 1. All shoreline development, both during and after construction, shall 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. 2. Shoreline development and uses shall adhere to all required setbacks, buffers, and standards for stormwater facilities. 3. All shoreline development shall comply with the applicable requirements of all applicable City stormwater regulations and the <i>Stormwater Management Manual for Western Washington</i> (current edition). 	<p><u>State and Federal Regulations:</u> Any proposed in- or over-water work would need to be reviewed by the City and WDFW. Any proposed projects that involved in-water fill or removal would require review and permitting from USACE and Ecology, who will impose particular design and/or mitigation requirements. Any proposed projects below the mean high water line will require USACE Section 10 approval. The USACE would need to consult with NMFS and USFWS on any permits that may have the potential to affect ESA-listed species.</p> <p><u>White Salmon Comprehensive Plan and White Salmon Municipal Code:</u> Title 16 “Land Divisions,” Title 17 “Zoning,” and Title 15 “Buildings and Construction,” and all other applicable code provisions.</p> <p><u>Stormwater Management:</u> stormwater impacts should be addressed through all applicable City and State stormwater regulations.</p> <p><u>Restoration Activities/Programs:</u> Some restoration opportunities within the City’s shoreline jurisdiction 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. The County-owned parcel that is targeted as a park presents opportunities for restoration as well as public access. Some potential restoration opportunities include:</p>	<p>SMP provisions including critical areas regulations are expected to result in no net loss of ecological functions.</p> <p>Implementation of new vegetation conservation standards, water quality and quantity standards, site planning and development standards are expected to protect existing shoreline functions within the City’s jurisdiction. Additionally, restoration activities and programs may help to offset or minimize potentially adverse incremental cumulative impacts.</p> <p>In cases of unanticipated development to protect public health, safety, or the environment during emergencies, these will be considered exemptions that are not considered substantial developments. Impacts to shoreline function will be minimized because this emergency development must only be on current development and cannot include permanent structures.</p>

Shoreline Segment	Existing Conditions	Likely Development	Primary Shoreline Functions and Processes Potentially Impacted	Proposed SMP Provisions and Revisions	Effect of other Regulatory Requirements and Restoration Activities/Programs	Anticipated Net Effect on Shoreline Function
		<p>including business park buildings and offices.</p> <ul style="list-style-type: none"> A parcel with one building may be redeveloped as light industrial. <p>Potential need for unanticipated development to protect public health, safety or the environment in cases of emergency.</p>		<p>4. The City shall require applicants for new development within shoreline jurisdiction to connect to the City's sanitary sewer system.</p> <p><u>SMP regulations for Site Planning and Development:</u></p> <ol style="list-style-type: none"> Land-disturbing activities, such as grading and cut/fill, shall be conducted in such a way as to minimize impacts to soils and native vegetation. Development shall be designed and land-disturbing activities conducted to avoid impacts to healthy trees such that they are likely to become hazard trees. Impervious surfacing for parking lot/space areas, trails, and pathways shall be minimized through the use of alternative surfaces where feasible. When feasible, existing transportation corridors shall be used. Ingress/egress points shall be designed to minimize potential conflicts with and impacts upon vehicular and pedestrian traffic. Pedestrians shall be provided with safe and convenient circulation facilities. Vehicle and pedestrian circulation systems shall be designed to minimize clearing, grading, and alteration of topography and natural features, and designed to accommodate wildlife movement. Parking, storage, and non-water dependent accessory and appurtenant structures and areas shall be located landward from the OHWM and landward of the water-oriented portions of the principal use. Elevated walkways shall be used, as appropriate, to cross sensitive areas, such as wetlands. Fencing, walls, hedges, and similar features shall be designed in a manner that does not significantly interfere with wildlife movement. Exterior lighting shall be designed, shielded and operated to: <ol style="list-style-type: none"> Avoid illuminating nearby properties or public areas Prevent glare on adjacent properties, public areas, or roadways Prevent land and water traffic hazards Reduce night sky effects to avoid light pollution and impacts to fish and wildlife Utilities shall be located within roadway and driveway corridors and rights-of-way wherever feasible. <p>Additionally, in cases of emergencies, unanticipated development can only be on current development and cannot include permanent structures.</p> <p><u>Critical areas:</u> Critical areas within the City's shoreline jurisdiction are regulated by the City's critical areas regulations, which is incorporated into the SMP. Wetland critical areas have standard buffer widths to protect wetlands. These widths vary depending on the when located adjacent to particular shoreline environmental designations. The High Intensity and Urban Conservancy shoreline environment designations would both be considered high intensity uses, and so the buffer widths would be 100 feet for Category I and II wetlands, 80 feet for Category II wetlands, and 50 feet for Category IV wetlands.</p>	<ul style="list-style-type: none"> Eradicating invasive species and replanting with native trees and shrubs. Removing armor stones west of the Hood River-White Salmon Interstate Bridge that are located in the terrestrial environment, but within the shoreline jurisdiction. Removing the old fence line along the eastern boundary of the County-owned property to allow wildlife movement. Addressing stormwater from the Hood River-White Salmon Interstate Bridge. <p>These restoration opportunities are likely to offset any unanticipated and/or cumulative incremental impacts, and will be discussed in more detail in the restoration plan scheduled for development later in the SMP update process, which will be consistent with WAC 173-26-201(2)(f).</p>	
Columbia River Reach 2	<p>Located downriver of Reach 1 and approximately 1,600 linear feet. Reach 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 SR 14 and the BNSF tracks.</p> <p>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 and continues upward steeply to the edge of the 200-foot shoreline buffer. Area landward of shoreline is characterized by a dry mesic oak-pine forested community with shallow soils and exposed bedrock.</p> <p>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.</p>	<p>Steep topography of this reach makes significant changes to land use highly unlikely because slopes 40 percent and greater (as designated in the comprehensive plan for this area) are prohibited from development according to WSMC 18.10.412(D). This reach is highly likely to remain in a semi-natural condition with existing transportation infrastructure in place.</p>	Not applicable.	Not applicable.	Not applicable.	No net effects are anticipated on shoreline functions.

7.0 UNANTICIPATED/INCREMENTAL IMPACTS

This section includes potential unanticipated and incremental impacts that may affect shoreline function within the City's jurisdiction. Unanticipated impacts are impacts that cannot be reasonably identified at the time of master program development. Incremental impacts are small impacts associated with incremental development that can result in cumulative impacts over time. Unanticipated and incremental impacts with the City's shoreline jurisdiction are mostly likely to result from shoreline uses or activities that fall below substantial development permit thresholds. These activities and uses may include the following, but are not limited to:

1. Allowable incremental vegetation removal of three trees per calendar year.
2. Development that falls under the permit threshold valued below \$7,000 per year such as maintenance and expansion of existing uses.
3. Expansion of non-conforming uses, such as the nursery.

The SMP contains several mechanisms that are likely to offset potentially adverse unanticipated and incremental impacts, which include the following.

1. A statement of exemption is required for all developments or actions that fall below the substantial development threshold (e.g., cost below the threshold established in the act). Nevertheless, the statement of exemption must demonstrate how the proposed action complies with the SMP.
2. Conditional use permits are required for all uses and activities that are not specifically permitted by the master program (see SMP section 2.7.5)
3. Mitigation sequencing will be applied during permit review to ensure that impacts are handled in a priority order, with avoidance being the first priority.
4. Voluntary restoration activities and programs undertaken by property owners or the City in accordance with the Shoreline Restoration Plan.

8.0 SUMMARY

This cumulative impact analysis report supports the City's SMP update by providing a baseline of existing shoreline conditions and functions, an overview of the reasonably foreseeable future shoreline development and uses, and a summary of the regulations and programs included in the proposed SMP that will accommodate for future shoreline development and uses while also ensuring a no net loss of shoreline functions. The components of the proposed SMP that will protect, enhance, and restore shoreline functions within the City's jurisdiction while ensuring no net loss of ecological functions include the following.

1. Shoreline environment designations to protect or enhance the current or desired character of shorelines.

2. General policies and regulations intended to protect the shoreline functions, as well as policies designed to protect specific shoreline functions, such as water quality, water quantity, and habitat.
3. Critical areas regulation to provide protective buffers for the following critical areas: fish and wildlife habitat conservation areas, geological hazard areas, flood hazard areas, critical aquifer recharge areas, and wetland critical areas.
4. Local, state, and federal regulations to ensure that shoreline impacts are avoided, minimized, and/or mitigated.
5. Restoration activities and programs that are expected to improve shoreline functions including water quantity, water quality, and habitat. These restoration activities are likely to offset or minimize potentially adverse unanticipated and/or incremental cumulative impacts within the City's shoreline jurisdiction.

9.0 REFERENCES

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**Cumulative Impacts Analysis
City of White Salmon Shoreline Master Program
White Salmon, Washington**

**Appendix A
Figures**

DRAFT

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

0 500 1,000 2,000 Feet

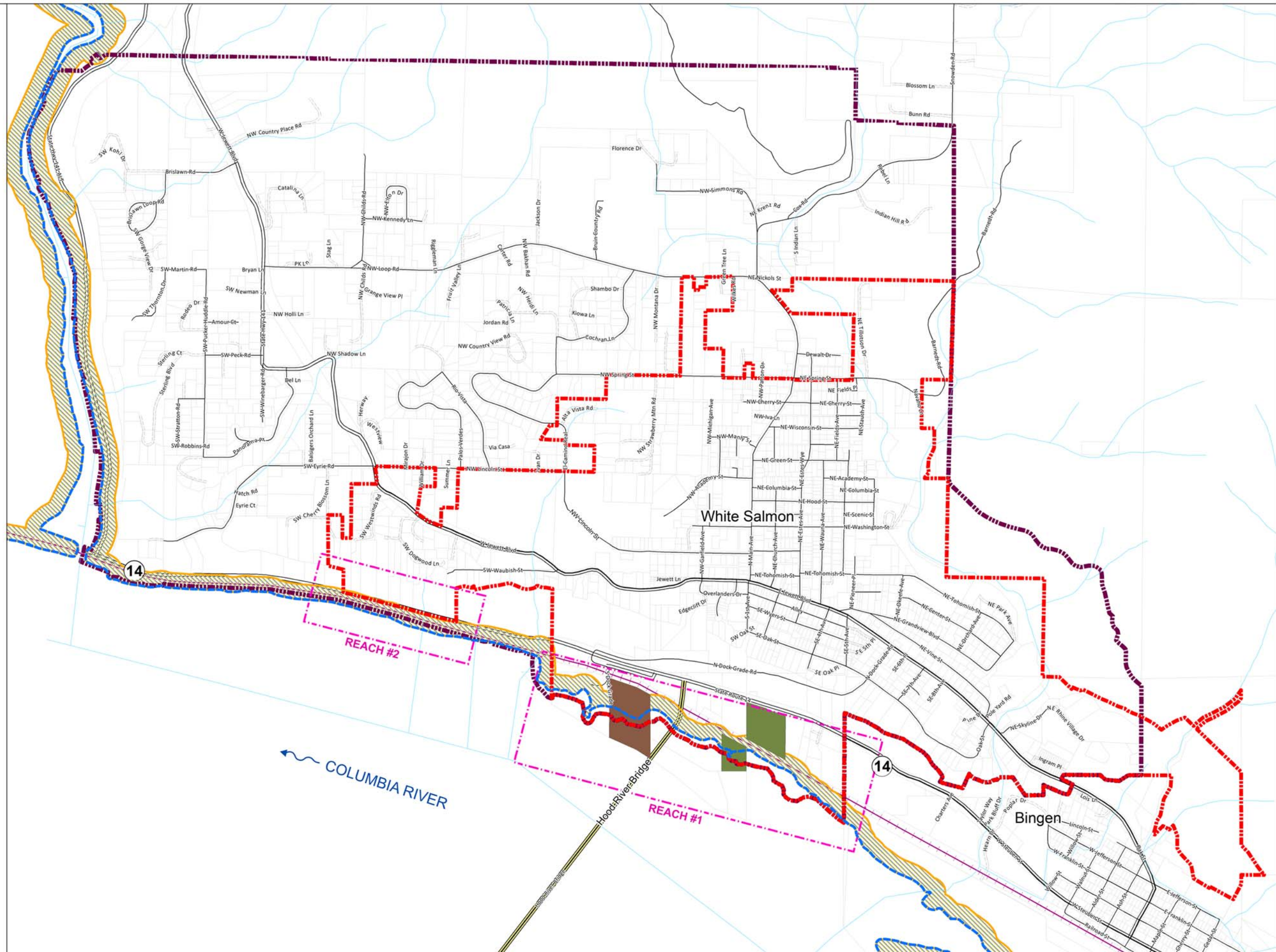


Figure 1: Shoreline Jurisdiction Areas
White Salmon Shoreline Master Program

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

0 125 250 500 Feet



Figure 2A: Shoreline Environment Designations Map - Reach 1
White Salmon Shoreline Master Program

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

0 125 250 500 Feet

