Chelan County
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FINAL

SHORELINE RESTORATION PLAN for Shorelines in the City of Cashmere

Project: Comprehensive Shoreline Master Program Update

- **Task 10: Prepare a Restoration Plan**

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Table of Contents

List of Tables Page No.

CHELAN COUNTY SHORELINE MASTER PROGRAM UPDATE
FINAL SHORELINE RESTORATION PLAN

1. INTRODUCTION

1.1 Purpose

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

Secondarily, the Shoreline Restoration Plan may enable a jurisdiction to ensure that the minimum requirement of no net loss in shoreline ecological function is achieved on a City-wide basis, notwithstanding any shortcomings of individual projects or activities. By law, activities that have adverse effects on the ecological functions and values of the shoreline must be mitigated (WAC 173-26-201(2)(e)). Proponents of such activities are *individually* required to mitigate for impacts to the subject shoreline areas, or agreed upon off-site areas, to conditions equivalent in ecological function to the baseline levels at the time each activity takes place. However, some uses and developments, either new or ongoing, cannot always be mitigated in kind on an individual project basis, such as a new bulkhead to protect a single-family home, that can be compensated for but not truly mitigated in-kind unless an equivalent area of bulkhead is removed somewhere else. Other impacts may be sufficiently minor on an individual level, such that mitigation is not required, but are cumulatively significant. Additionally, unregulated activities (such as operation and maintenance of existing legal developments) may also degrade baseline conditions.

Finally, the City of Cashmere's Shoreline Master Program (SMP) applies only to activities in shoreline jurisdiction, yet activities upland of shoreline jurisdiction may have offsite impacts on shoreline functions. Thus, assembly of out-of-jurisdiction actions, programs and policies can be essential for understanding how the City fits into the larger watershed context. The latter is critical when establishing realistic goals and objectives for dynamic and highly inter-connected environments. For this reason, information about WRIA 45 conditions and activities are provided in this Restoration Plan.

Together, these different project impacts – out of kind, de minimus, and out of jurisdiction – may result in cumulative, incremental, and unavoidable

degradation of the overall baseline condition unless additional restoration of habitat function is undertaken. Accordingly, the Restoration Plan is intended to be a source of ecological improvements implemented by the City and other government agencies, developers, non-profit groups, and property owners inside and outside of shoreline jurisdiction to ensure no net loss of ecological function, and where possible improvement of ecological function.

1.2 Restoration Plan Requirements

This Restoration Plan has been prepared to meet the purposes outlined above as well as specific requirements of the SMP Guidelines. Specifically, WAC Section 173-26-201(2)(f) of the SMP Guidelines (Guidelines)[1] says:

> "master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded non-regulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or non-regulatory programs under other local, state, and federal laws, as well as any restoration effects that may flow indirectly from shoreline development regulations and mitigation standards."

In addition to meeting the requirements of the Guidelines, this Restoration Plan is intended to identify priority focal areas for future restoration and mitigation, support the City's and other organizations' applications for grant funding, and to identify the various entities and their roles working within the City to enhance the environment.

1.3 Types of Restoration Activities

Restoration of shoreline areas, in relation to shoreline processes and functions, commonly refers to methods such as re-vegetation, removal of invasive species or toxic materials, and removal of shoreline modifications, such as levees or revetments. Consistent with Ecology's definition, use of the word "restore," or any variations, in this document is not intended to encompass actions that

[1] The Shoreline Master Program Guidelines were prepared by the Washington Department of Ecology and codified as WAC 173-26. The Guidelines translate the broad policies of the Shoreline Management Act (RCW 90.58.020) into standards for regulation of shoreline uses. See http://www.ecy.wa.gov/programs/sea/sma/guidelines/index.html for more background.

reestablish historic conditions. Instead, it encompasses a suite of strategies that can be approximately delineated into four categories:

- Creation (of a new resource)
- Restoration (of a converted or substantially degraded resource)
- Enhancement (of an existing degraded resource)
- Protection (of an existing high-quality resource).

1.4 Contents of this Restoration Plan

As directed by the SMP Guidelines, the following discussions provide a summary of baseline shoreline conditions, list restoration goals and objectives, and describe existing or potential programs and projects that positively impact the shoreline environment. In total, implementation of the SMP (with mitigation of project-related impacts) in combination with this Restoration Plan (for restoration of lost ecological functions that occurred prior to a specific project) will result in no net loss of ecosystem function, and voluntary actions and partnerships identified in this plan may result in a net improvement in the City of Bothell's shoreline environment in the long term.

2. SHORELINE INVENTORY SUMMARY

2.1 Introduction

The City, in cooperation with the County and other Chelan County cities, completed a comprehensive inventory and analysis of its shorelines (April 2012) as an element of its SMP update. The purpose of the shoreline inventory and analysis was to gain a greater understanding of the existing condition of the City's shoreline environment to ensure the updated SMP policies and regulations will protect local ecological processes and functions. The inventory describes existing physical and biological conditions in shoreline jurisdiction within City limits and the urban growth area and includes recommendations for restoration of ecological functions where they are degraded. The *Shoreline Inventory and Analysis Report* (TWC and Berk 2012) is summarized below to provide context for this Restoration Plan.

2.2 Shoreline Boundaries

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the state plus their associated "shorelands." At a minimum, the waterbodies designated as shorelines of the state are streams whose mean annual

flow is 20 cubic feet per second (cfs) or greater or lakes whose area is greater than 20 acres. In addition, shorelines of statewide significance are those streams and rivers that meet one or more of the following criteria

> *"i. that have either: a mean annual flow of 200 cubic feet per second or more, or;*
>
> *ii. the portion downstream from the first 300 square miles of drainage areas.*

Shorelands are defined as:

> *"those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter…Any county or city may determine that portion of a one-hundred-year-floodplain to be included in its master program as long as such portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom… Any city or county may also include in its master program land necessary for buffers for critical areas… (RCW 90.58.030)"*

The City shoreline boundaries have been updated (subject to City Council and Ecology approval) concurrent with the *Shoreline Inventory and Analysis Report* through use of improved stream flow modeling by the United States Geological Survey mapping that resulted in increased accuracy of jurisdiction identification and mapping and improved wetland information.

2.2.1 Wenatchee (WRIA 45)

The Wenatchee watershed (WRIA 45) is approximately 1,370 square miles, and contains 45 shoreline streams/rivers and 29 shoreline lakes. The area of upland shoreline jurisdiction totals 24,652 acres along 2,159,741 linear feet (409 miles) of shoreline. The headwaters of WRIA 45 originate in the Cascade Mountain range as the Little Wenatchee and White Rivers. These rivers flow into Lake Wenatchee, the source of the Wenatchee River.

2.2.2 City of Cashmere

Shorelands in the City of Cashmere include areas within 200 feet of the ordinary high water mark, floodways, portions of their adjacent floodplains, and any associated wetlands within those floodplains. Waters identified within jurisdiction include Mission Creek and the Wenatchee River. The shoreline acres in the City and UGA equal 238, and the shoreline length equals 12,159 feet.

2.3 Inventory and Analysis Summary

The *Shoreline Inventory and Analysis Report* (TWC and Berk 2012) is divided into seven main sections: Introduction, Current Regulatory Framework Summary, Elements of the Shoreline Inventory, Shoreline-Specific Conditions, Analysis of Ecological Functions and Ecosystem-wide Processes, Land Use Analysis, and Public Access Analysis. Most of these chapters were subdivided into sections for the City and watershed (WRIA 45 - Wenatchee). The WRIA discussions do not include information for the incorporated Cities and their UGAs. The City discussions include the City's UGA. The following inventory is summarized from detailed information presented in the *Shoreline Inventory and Analysis Report*.

2.3.1 Wenatchee (WRIA 45)

Land Use and Physical Conditions

Government/utility uses and resource lands (forestry, agriculture, and other natural resources) dominate the majority of the 75 shorelines. Shorelands within WRIA 45 are currently used for: agriculture, commercial, cultural/recreation/assembly, forestry, government/utility, manufacturing/industry, natural resources, residential, transportation, and open space. WRIA 45 contains unincorporated and incorporated lands.

Water-oriented uses along shorelines in WRIA 45 include agriculture, parks/recreation/recreational activities, resorts and group camps, certain hotel/motels, eating and drinking places, and others. Much of the shorelines tend to be parcels without buildings, largely due to the commercial forest lands in the watershed. Most of the shoreline land is being used for government/utility is expected to remain, even where there are vacant parcels. With future development, the shorelines are likely to see added rural residential, which makes up 17 percent of the current land use, but is planned for over 24 percent of the shoreline lands.

Parks and open space are found along numerous shorelines in WRIA 45. Open space is estimated at approximately 24,699 acres, and park lands total about 17 acres (found along the Columbia and Wenatchee Rivers). Developed public access points include: trails, campgrounds, picnic areas, fishing easements, and boat launches. The trails are extensive, linking various waterbodies as well as running alongside waterbodies. Fishing easements and boat launches are located along the Wenatchee River.

Biological Resources and Critical Areas

Shorelines in WRIA 45 contain a combined total of 19,433 acres of priority habitats and habitat features. The most common habitats, in order of frequency

of occurrence, are those for elk calving, migration, concentrations, or foraging and mountain goat breeding or concentrations. Twenty-seven separate osprey nest sites are mapped in shoreline jurisdiction, distributed on five waterbodies. Many of the rivers, streams and lakes also contain priority fish species. According to the NWI and hydric soils information, as much as 39 percent of the total shoreline area may be wetlands. Floodplains and geohazard areas, primarily channel migration zones, are also documented in the WRIA.

2.3.1 City of Cashmere

Cashmere is a historic community in the lower Wenatchee River valley known for its agricultural-oriented industries, traditional downtown, and residential character.

Land Use and Physical Conditions

Mission Creek is largely flanked by single-family residential, but also commercial and government uses. The Wenatchee River is fronted mostly by government/utility uses, such as the City's wastewater treatment plant, Riverside Park, City sanitation and recycling facility, and a City mulching facility. Planned land uses are likewise a mix, maintaining the existing pattern of the majority of land for single family on Mission Creek and public for the Wenatchee River. Potential water-oriented uses include agricultural uses, and uses at public parks and open space along both Mission Creek and the Wenatchee River.

There are parcels which do not contain buildings on both Mission Creek (4% of land in the shoreline jurisdiction) and the Wenatchee River (29% of land in the shoreline jurisdiction). The City's two shorelines are mostly committed to urban development today, primarily single-family residential. However, some of the land along the Wenatchee River in the City limits contains older industrial structures or improvements that may redevelop. There may be additional growth on shorelines in the UGA, since this area has not yet fully developed. The City may see additional commercial or industrial uses along Mission Creek, which currently has 9 percent of the land being used for commercial purposes (but 15% of the land is planned for mixed commercial/light industrial and 10% in warehouse industrial).

Public access features include parks and open space along Mission Creek (having approximately 3 acres of parks and 1 acre of open space, equaling 7% of shoreline jurisdiction) and the Wenatchee River (with approximately 36 acres of open space at 33% of shoreline jurisdiction and over 32 acres in parks, equaling 29% of shoreline jurisdiction). Other public access features include a river access ramp easement along the Wenatchee River within Riverside Park, as well as visual access corridors from lands east and west of the Wenatchee River in the vicinity of US 2, Riverside Park, and higher elevations. Shoreline trails are

present along both Mission Creek (602 feet in length) and the Wenatchee River (14,522 feet in length).

Biological Resources and Critical Areas

Shorelines in the City of Cashmere and its UGA contain a combined total of 46 acres of priority habitats and habitat features. Both the Wenatchee River and Mission Creek contain priority fish species. According to the NWI and hydric soils information, as much as 24 percent of the total shoreline area may be wetlands.

The critical area most prevalent on the City's Wenatchee River shoreline is "frequently flooded areas", followed by channel migration zone. A significant portion of the City is protected by a City-owned, Corps-certified/built levee on the Wenatchee River. However, one of the gaps in the Wenatchee River levee located along Riverfront Drive, south of the Cotlets Way bridge, is susceptible to flooding during heavy rains or high elevation snow melt.

3. RESTORATION GOALS AND OBJECTIVES

The following subsections discuss restoration goals and objectives previously identified in local WRIA, City and County planning efforts. Discussions are divided between the WRIA and City when applicable. The WRIA discussion does not include information for the i City and its UGA. The City discussion includes the City's UGA.

Many of the watershed planning and salmon recovery efforts are administered by the Chelan County Natural Resources Department (CCNRD). Current activities include Wenatchee River Watershed (WRIA 45) planning and implementation, a County-wide salmon recovery grant program through Washington Salmon Recovery Funding Board, and habitat conservation plan development under the Federal Endangered Species Act (Chelan County website). The goals and objectives of the above plans will be discussed in Section 3.1, below.

The CCNRD also supports a regional salmon recovery effort, the Upper Columbia Salmon Recovery Board (UCSRB), and staffs the Chelan County Water Conservancy Board (Chelan County website). The mission statement of the UCSRB, whose planning area includes all of Chelan County except for the Chelan watershed, is:

> *"To restore viable and sustainable populations of salmon, steelhead, and other at risk species through collaborative, economically sensitive efforts, combined resources, and wise resource management of the Upper Columbia region."*

Restoration efforts throughout the County could focus on addressing the 12 factors for decline that were identified in the *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan* (UCSRB 2007) for covered species. Areas for improvement may address the following factors:

- Social, Cultural, and Economic Factors
- Public Policy
- Management Actions
- Harvest
- Hatcheries
- Hydropower
- Habitat (includes alteration from land use practices, logging, mining, diversions, and other uses)
- Ecological Factors
- Factors Outside the ESU [Evolutionarily Significant Unit] and DPS [Distinct Population Segment]
- Interaction of Factors
- Current Threats
- Uncertainties

3.1 WRIA 45

Planning Unit Objectives

The Wenatchee Watershed Planning Unit, which includes Chelan County and the Cities of Wenatchee, Cashmere and Leavenworth, has a defined mission "to collaboratively develop a management plan for sustaining and improving watershed and community health." To implement this plan, the WRIA 45 Planning Unit's goal is to: "protect water resources, habitat and water use in a way that balances the educational, economic and recreational values associated with a healthy community." The WRIA 45 Planning Unit will work to achieve this goal by meeting the following three objectives:

1. Assess water supply and use, and develop strategies for meeting current and future needs for both in-stream and out-of-stream use (Water Quantity and Instream Flow Subcommittee).

2. Protect and enhance habitat of threatened and endangered and culturally important species throughout the Wenatchee Watershed, improving overall habitat function and connectivity (Habitat Subcommittee).

3. Address polluted water bodies that do not meet state and federal water quality standards (Water Quality Technical Subcommittee).

The WRIA 45 Planning Unit identified 25 opportunities for actions in the Wenatchee watershed, including six short-term actions and four hatchery-oriented actions. Details are covered in Volume 1 of the *Wenatchee Watershed Management Plan* (WWMP) (Wenatchee Watershed Planning Unit 2006). These recommended actions and planned implementation strategies meet the WRIA 45 Planning Unit's three objectives by indentifying watershed-wide actions (pertaining to instream flow, quantity, growth and land use, quality, habitat, implementation, and outreach) and sub-watershed specific actions. Tables 2-1 through 2-16 of the WWMP (2006) present summaries of the recommended actions and the agency(s) or entity(s) responsible for implementation; Table 2-6 lists specific implementation actions.

Planning Unit Implementation Strategies, Benchmarks, and Funding

The WWMP suggests that voluntary, cooperative measures are preferable to regulatory enforcement approaches. Implementation actions in the WWMP may need additional assessment and planning before implementation can proceed and responsibilities can be assumed, and that funding considerations may limit the implementation process, although federal entities are expected to support the strategies in the plan within the limits of available financial resources.

Funding sources for recommended actions would be determined by the implementation entity. Examples of potential private and public funding sources include Aquatic Lands Enhancement Account (ALEA), Bonneville Environmental Foundation Watershed Program, The Bullitt Foundation, Coastal Protection Fund (CPF), The Compton Foundation Environmental Grants, Family Forest Fish Passage Program (WDNR), Fish America Foundation Conservation Grant, Riparian Habitat Protection in the Washington Wildlife and Recreation Program (WWRP), and the UCSRB.

The UCSRB *Draft Upper Columbia Spring Chinook Salmon, Steelhead, and Bull Trout Recovery Plan* (2005) calls for administrative reviews to assess project implementation success, as well and for monitoring of recovery actions for their effectiveness in fulfilling goals. The WWMP also recommends an adaptive management strategy for actions that may require further development, additional data collection, or subsequent modification.

The *Wenatchee River Integrated Status and Effectiveness Monitoring Program* (ISEMP) is also in place to evaluate and document the progress and success of habitat actions. The ISEMP is a collaborative effort funded through various federal, state and local efforts. It builds on existing monitoring programs and consists of pilot status and trend monitoring efforts for anadromous salmonids and their habitat, as well as effectiveness monitoring for suites of habitat restoration projects in the Wenatchee Watershed.

Wenatchee River Channel Migration Zone Study Objectives

CCNRD conducted a *Wenatchee River Channel Migration Zone Study-Phase I* in 2003. The purpose of the CMZ Study Phase I was to provide the technical foundation to allow the selection and prioritization of salmonid habitat restoration, enhancement, and preservation projects (Jones and Stokes Inc. 2004). The study objectives were to 1) evaluate historic changes in channel behavior and vegetation for the lower Wenatchee River (from Leavenworth to the mouth) and some of its tributaries (mouths of the Icicle, Peshastin and Mission Creeks, and the lower four miles of Nason Creek), 2) project areas where these rivers and streams may migrate or erode their banks in the future, and 3) identify potential restoration sites to improve salmon habitat (CCNRD website).

Phase II of the CMZ Study was subsequently completed to quantify physical and biological mechanisms linked to the salmonid habitat limiting factors, and prioritize potential habitat restoration, enhancement, and preservation actions. Twenty-four restoration sites were selected for preservation, enhancement, or restoration. The sites included areas that could be preserved because of their existing high-quality habitat adjacent to the Wenatchee River, and their need for additional off-channel habitat and riparian vegetation. The CCNRD has made it a goal to restore and protect these 24 sites.

Wenatchee River Channel Migration Zone Study Implementation Strategies, Benchmarks, and Funding

Potential restoration and protection opportunities are reviewed by CCNRD in an ongoing manner. No timetable or implementation strategy specific to the 24 sites listed in the CMZ study exists. Rather, the sites will be considered as viable options for restoration and preservation activities discussions. Funding for restoration and preservation projects may differ, as some public funds and private entities may be available solely for one of these project types. For example, one of the projects (identified as CMZ 2, and referenced in the WWMP) was initiated by a private property owner and then was finalized and will be constructed by the Yakama Nation using Bonneville Power Administration mitigation funds. The Boise State University Finance Center website (http://efc.boisestate.edu/watershed/searchmenu.asp) provides a potential listing of available grants and other funds for the projects and sites suggested in the CMZ study.

Upper Valley Plan Objectives

A Steering Committee and the Chelan County Public Utilities District (CCPUD) partnered to develop a vision plan with opportunities for the upper Wenatchee River valley, including the communities of Leavenworth, Peshastin, Dryden, Cashmere, and Monitor. They identified goals, objectives and a list of potential

river access sites and fisheries enhancement opportunities along the Wenatchee River.

A summary of the *Upper Valley Plan*'s purpose was to: 1) identify interpretive sites, river access points, and fisheries and wildlife enhancement opportunities along the Wenatchee River corridor, that have the potential to increase the public's knowledge and understanding of CCPUD's salmon and wildlife habitat enhancement programs; and to 2) build on existing tourism by creating attractions, new tourism opportunities (with an emphasis on the environment, education, recreation, culture, and art), visibility of the valley's resources, leveraging efforts of other groups that share common goals, and protect and enhance natural habitats (J.T. Atkins & Company PC. 2003). The plan identifies opportunity sites in:

1. Leavenworth (at the Leavenworth National Fish Hatchery, Blackbird Island, Icicle Creek/Wenatchee River confluence, irrigation projects, Wenatchee River habitat work, Icicle Loop Trail, potential interpretive trail at an old railbed site east of Leavenworth, gateway for "back roads" scenic drive, and Trout Unlimited projects).

2. Peshastin (at an old mill site, mill intake station, old railroad corridor, Kiwanis Park, Main Street, a historic log structure, Peshastin Creek/Wenatchee River confluence, and at railroad bridge and sandy beach).

3. Dryden (at a beaver pond site, dam site, powerhouse site, old school site, downtown Dryden, old dump site and public access above railroad and between railroad and SR 2).

4. Cashmere (at the Chelan Co. museum, a fishing hole on the north shore of the Wenatchee R., Sunset Highway Industrial Park, Raft Park and PUD kiosk, a flood area below Bethlehem construction).

5. Monitor (at Sleepy Hollow viewpoint, Green Bridge, gateway for "back roads" scenic drive, irrigation site, Monitor Bridge, riparian area, Chelan Co. Park, Wenatchee Foothills trail).

Upper Valley Plan Implementation Strategies, Benchmarks, and Funding

Implementation plans for the Upper Valley Plan goals begin obtaining 501c3 for the Steering committee, hiring a project director, and acquiring office space and equipment. Community meetings and meetings with reviewing agencies to determine permitting requirements are the following step. The remainder of the plan is aimed at identifying and procuring funding. Potential funding sources are not specified but may include both acquiring project specific funds from

private and public entities as well as teaming to complete projects with existing programs and groups such as the Chelan-Douglas Land Trust, Washington State Department of Transportation, The Audubon Society, and CCNRD.

Washington Department of Ecology Total Maximum Daily Load (TMDL) Objectives

The U.S. Environmental Protection Agency (EPA) has approved a TMDL (the Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Plan (TMDL) (Ecology 2009). The TMDL identified three water bodies in the project area exceeding dissolved oxygen standards and six exceeding pH standards. The overarching goal of the TMDL plan is to meet water quality standards; thus, the goal is to reduce total phosphorus from point and nonpoint sources to the Wenatchee River. The timeline for compliance with water quality standards is 10 years from TMDL approval, or 2019. Fifty specific activities and goals are identified in Table 5 of the TMDL. They include supporting and regional phosphorus reduction activities, point and nonpoint source activities, facility planning and design, monitoring activities, and habitat improvements.

Washington Department of Ecology Total Maximum Daily Load (TMDL) Implementation Strategies, Benchmarks, and Funding

Three phases and a number of targets are defined to track progress toward goals. Timelines are in Table 3 of the TMDL and summarized below:

Phase/Target	Definition	Timeline
Phase 1	Point and nonpoint source reductions, data collection and model calibration	2009-2013
Target 1	50% nonpoint source loading reduction	2014
Phase 2	Modification of load and wasteload allocations (if needed); identification of additional nonpoint source reductions	2014-2015
Phase 3	Additional load reductions implemented	2015-2019
Target 2a	NPDES compliance	2019
Target 2b	Reduction in remaining nonpoint source poading	2019
Final Target	Water quality standards achieved	2019

Dissolved oxygen and pH data will be collected every five years to monitor progress toward the goals. Adaptive management will be employed to ensure that goals are achieved. Compliance monitoring will continue after compliance with water quality standards is achieved.

A number of funding resources presently support the TMDL or will potentially provide technical assistance or monetary support as projects are implemented. These sources include the CCD, which is a current recipient of a Centennial Clean Water Fund grant for TMDL activities; CCNRD, which provides incentive payments for implementation of riparian restoration activities; NRCS, which provides technical assistance to farmers and ranchers and may also be a funding source; and a number of jurisdictions and entities, including Chelan County, the Chelan County PUD, and the Cities of Wenatchee, Leavenworth, and Cashmere, have all shown interest in investigating sources of nonpoint source phosphorus loading.

3.2 City of Cashmere

The *City of Cashmere Comprehensive Land Use Plan* (2008) is intended to be a guide for the growth and development within and surrounding the community that is both sensitive to the environment and to guide the needs of the community residents. Environment-related goals of the plan are as follows:

1. Encourage the most appropriate use of land throughout the community.

2. Conserve and protect and restore natural beauty and other natural resources.

The City of Cashmere is a member of the Wenatchee Watershed Planning Unit, and as such is committed to supporting the relevant objectives and actions of the *Wenatchee Watershed Management Plan.* As reported in the *Shoreline Inventory and Analysis Report* (TWC and J&S 2009), the *Wenatchee Watershed Management Plan* (Wenatchee Watershed Planning Unit 2006) includes four specific habitat actions for the Lower Wenatchee Watershed, which includes the City of Cashmere:

- LowWenH-1: Use practical and feasible means to increase stream flows (within the natural hydrologic regime and existing water rights) in the Wenatchee River (UCSRB 2005).
- LowWenH-2: Reduce water temperatures by restoring riparian vegetation along the river (UCSRB 2005).
- LowWenH-3: Increase habitat diversity and quantity by restoring riparian habitat along the Wenatchee River, reconnecting side channels and the floodplain with the river, and increasing large woody debris in the side channels (UCSRB 2005).

- LowWenH-4: Protect existing riparian habitat and channel migration floodplain function (UCRTT 2002).

Five separate habitat actions, as follows, are included for the Mission sub-watershed:

- MissionH-1: Re-establish connectivity throughout the assessment unit by removing, replacing, or fixing artificial barriers (culverts and diversions) (UCSRB 2005).
- MissionH-2: Use practical and feasible means to increase stream flows (within the natural hydrologic regime and existing water rights) in Mission Creek (UCSRB 2005).
- MissionH-3: Decrease water temperatures and improve water quality by restoring riparian vegetation along the stream (UCSRB 2005).
- MissionH-4: Reduce unnatural sediment recruitment to the stream by restoring riparian habitat and improving road maintenance (UCSRB 2005).
- MissionH-5: Increase habitat diversity and quantity by restoring riparian habitat, reconnecting side channels and the floodplain with the channel, increasing large woody debris within the channel, and by adding instream structures (UCSRB 2005).

Several of the water-quality actions for the lower Wenatchee watershed address inputs of nutrients, particularly phosphorus to the Wenatchee River. Many parks and other intensively maintained lawns or landscape areas are potential sources of nutrient run-off. The Plan specifically mentions a need to reduce phosphorus inputs from wastewater treatment plants, including the City of Cashmere's facility, and notes that the City is one of several members of a partnership formed to address dissolved oxygen and pH problems that are related to phosphorus. The Plan also includes 19 water-quality actions in the Lower Wenatchee Watershed and 33 water-quality actions for the Mission sub-watershed.

The *Wenatchee Watershed Management Plan* provides guidelines regarding implementation strategies, timelines, and potential funding sources. These are described in Section 3.1.3 of this document.

4. LIST OF EXISTING AND ONGOING PROGRAMS

4.1 WRIA 45 Watershed Plans

The WRIA 45 Planning Unit explains in their *Phase IV – Detailed Implementation Plan* [(DIP) April 2008] that:

> *"The Wenatchee Watershed (WRIA 45) has been listed by the State Department of Ecology as one of the 16 basins in the state with critical and inadequate streamflows for fish."*

The WRIA 45 Planning Unit therefore developed an approach and ranking strategy to prioritize actions for implementation of the *WWMP* (WWPU 2006). The DIP (WWPU 2008) provides priorities and a practical schedule for implementing actions previously identified in Volume 1 of the *WWMP* (WWPU 2006), along with additional salmon recovery and water quality related actions that have evolved since the DIP was adopted. This management tool targets the status and completion of existing and ongoing projects, and can be found in Table 3-2 of the WRIA 45 Planning Unit's *Phase IV – Detailed Implementation Plan* (WWPU 2008).

4.2 Chelan County Natural Resource Department Efforts

The Chelan County Natural Resource Department (CCNRD) administers watershed planning and salmon recovery efforts in Chelan County. Current activities include Wenatchee River Watershed (WRIA 45) planning and implementation, a countywide salmon recovery grant program through Washington Salmon Recovery Funding Board, and habitat conservation plan development under the Federal Endangered Species Act (Chelan County website). The CCNRD also supports the Upper Columbia Salmon Recovery Board (UCSRB) and staffs the Chelan County Water Conservancy Board. The CCNRD manages a variety of state, federal, and local project and planning grants that assist watershed planning and salmon recovery efforts in Chelan County. Details about CCNRD programs and funding can be found online at http://www.co.chelan.wa.us/nr/nr_main.htm.

The CCNRD's current restoration strategies and efforts primarily stem from those identified in: watershed plans and DIPs previously mentioned; the *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan*'s (2007) implementation schedule; and various studies, such as the Wenatchee River CMZ study. The CCNRD also implements "need-based" projects as they arise

(E. Fonville, personal communication, March 9, 2009), which may consist of native riparian plantings and stream buffer restoration for private land owners in collaboration with the Chelan-Douglas Land Trust (CDLT).

UCSRB Implementation Schedule

The *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan* (UCSRB 2007) provides a regionally and federally accepted framework for implementing coordinated recovery actions, while providing a "roadmap" towards implementation of priority habitat actions. The UCSRB has successfully completed single-project-focused actions that 1) reopen tributary habitat, 2) preserve key habitat areas, and 3) protect countless fry and smolt from entrainment in irrigation diversions. One recent project success story, sponsored by the CCNRD, includes the Nason Creek Oxbow Reconnection project in the upper Wenatchee valley (located between mile post 0.83 and 1.33 on Hwy. 207). This project reconnected a half-mile-long oxbow (secondary channel) by installing two 12-foot-wide fish-friendly culverts. The reconnection restored access to 21.7 acres of off-channel refuge, rearing and over-wintering habitat for juvenile salmonids.

While these single-project-focused actions significantly contribute to recovery efforts, "there is a growing consensus among biologists, project managers and the entities providing salmon recovery funding, that the greatest current opportunities for habitat restoration projects that will yield the greatest biological benefits are found in the yet to be addressed large-scale, multi-years, multi-million dollar recovery activities" (UCSRB 2009). In a recent memo regarding funding and project coordination of salmon recovery projects in the Upper Columbia, UCSRB members state that "the priority of the UCSRB is to restore salmonid populations … through the development of a mid-range implementation/3-year work plan and coordinated funding." The UCSRB is currently updating their comprehensive, coordinated and strategic approach to restoration to address the "large-scale, multi-year, multi-million dollar recovery activities." The implementation plan that the CCNRD works from can be found online at http://www.ucsrb.com/theplan.asp. Implementation actions pertain to: water quantity and quality, water temperature extremes, habitat diversity and quantity, obstructions, riparian/floodplain, sediment, diversions, species interactions, depleted nutrients, nutrient limitations, and ecosystem function.

Outreach and Education

The CCNRD sends out mailers (postcards) updating the community about educational workshops and workgroups, such as the Shoreline Master Program update meetings.

4.3 Comprehensive Plan Policies

The *City of Cashmere Comprehensive Land Use Plan "The Heart of Cashmere"* (January 14, 2008, Ordinance 1117) is intended to guide the needs of residents and environment throughout growth and development within and surrounding the community. Because the "community" of Cashmere extends beyond the actual city limits, it is important that this plan and the *Chelan County Comprehensive Plan* (2005) are complementary. Countywide planning policies as well as the overall policies of the GMA are intended to assure that all levels of government are communicating and working towards respective plans that are compatible and consistent. The Comprehensive Plan describes general goals and objectives that will be used to make decisions that balance the needs and desires of the residents of the Cashmere area. The Plan should clearly state the community's vision for future growth and development, as the city zoning codes, building codes and land use regulations will be established or updated.

Goals of the plan are as follows:

1. Encourage the most appropriate use of land throughout the community.
2. Lessen traffic congestion and accidents.
3. Secure safety from fire.
4. Encourage the formation of neighborhood or community units.
5. Secure an appropriate allotment of land area in new developments for all the requirements of community life.
6. Conserve and protect and restore natural beauty and other natural resources.
7. Facilitate the adequate provision of transportation.

4.4 Critical Areas Regulations

The *City of Cashmere Comprehensive Land Use Plan "The Heart of Cashmere"*(2008) states, "the quality of life of different communities is directly related to the quality of environmental factors, such as air and water quality…subtle and prolonged degradation of these things can undermine the community's appeal and viability." Therefore, following requirements of the Growth Management Act (GMA) and using the "best available science", the Comprehensive Plan provides reference maps, a description of the City's classification and designation of critical areas, as well as goals and policies to protect them.

The City's general goal is to "preserve and protect the quality of the area's natural features and maintain a harmonious relationship between the man-made community and the natural environment" (City of Cashmere 2008). More specific goals are as follows:

> Goal: The City's wetlands will be protected to the greatest extent possible because they provide important functions that help define the quality of life in the community.
>
> Goal: Protect fish and wildlife habitat areas as an important natural resource for the City, particularly in regard to their economic, aesthetic and quality of life values.
>
> Goal: The City seeks to protect the public health, safety and welfare of its residents by providing protection of potable water sources, primarily through careful monitoring and control of areas demonstrated to be critical aquifers and/or which play a crucial role in recharging our groundwater supplies.
>
> Goal: Protect the frequently flooded areas that are known to be critical parts of the natural drainage system by limiting and controlling potential alterations and/or obstructions to those areas.
>
> Goal: The City will provide appropriate measures to either avoid or mitigate significant risks that are posed by geologic hazard areas to public and private property and to public health and safety.

The City's critical areas regulations are currently being updated.

4.5 Stormwater Management and Planning

As described in the *City of Cashmere Comprehensive Land Use Plan "The Heart of Cashmere"* (2008), stormwater drainage facilities are available throughout most of the City. Major components of the system consist of piping, manholes, catch basins and outfalls. Extensions to the stormwater system are primarily done by land development and the cost of the extension is borne by the developer. The City of Cashmere will be evaluating the stormwater system for Ecology's Phase II, Stormwater Management Regulations compliance in the near future.

4.6 Public Environmental Education

The City of Cashmere's Riverside Center is a gathering place for music, culture and educational activities within the City. People living in and around Cashmere also utilize City parks for swimming programs, sports leagues, school

and youth programs, and community events. The City has an existing Park Plan, part of the *City of Cashmere Comprehensive Land Use Plan "The Heart of Cashmere"* (2008), that identifies that the parks should be developed to perform two different and distinctive functions: 1) provide facilities for the City's residents, therefore making Cashmere a more desirable place to live; and 2) provide facilities for the visitors who come into the area, thereby enhancing the City's economy.

The City's Parks and Recreation goal is to, "encourage the retention of open-space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks." A policy associated with this goal links schools and natural resource education to parks.

> Policy: Cooperate with and support Cashmere School District in making school property available for public recreational use.

4.7 Audubon Society Efforts

The North Central Washington (NCW) chapter of the Audubon Society is dedicated to furthering the knowledge and conservation of the environment of North Central Washington, our Nation, and the World (NCW Audubon website). Chapter president, Mark Oswood, expresses the goals, hopes, aspirations, and plans of the NCW Audubon Society to: promote resource decisions based on the best available data; be honest brokers in environmental conflicts; believe that sustainable economies are the only road into the future; believe in citizen science and life-long learning; act as "outside consultants" – leading field trips, holding outdoor classes, and doing "dirt work"; and watch, count and protect birds, "one of the grandest expressions of life" (NCW Audubon website).

The NCW chapter of the Audubon Society participates in the Wenatchee River Watershed (WRIA 45) Planning. The *Wild Phlox*, a NCW Audubon Society newsletter (edited by Teri Pieper), reaches approximately 450 members across the four-county (Chelan, Douglas, Okanogan, Ferry) chapter territory, providing monthly environmental updates and opportunities for Audubon birders and environmental enthusiasts alike. More information about the NCW Audubon Society can be found online at http://www.ncwaudubon.org.

4.8 Cascadia Conservation District Efforts

Watershed Planning

The Cascadia Conservation District (CCD) (formerly the Chelan County Conservation District) is involved with the Wenatchee (WRIA 45) watershed planning effort, led by Chelan County.

Land Owner Assistance Program

Numerous projects occur each year, with recent projects along Chumstick Creek, Mission Creek, and Wenatchee Rivers (R. Malinowski, personal communication, February 17, 2009). The CCD has assisted in diverse ways by providing: side channel reconnection, off-channel juvenile salmonid rearing habitat, installation of LWD structures and boulder structures for instream habitat complexity, native riparian plantings to stabilize streambanks and provide canopy cover, installation of livestock fencing, elimination of fish entrainment in irrigation diversions through designing and updating new fish screens, and construction of groundwater wells to replace surface water diversions. Primarily the CCD works with private landowners to enhance riparian areas while providing fish-friendly conveyance to irrigation ditches, thereby reducing annual instream disturbance from diversion maintenance. By installing instream log cross vanes, LWD (with intact rootwads) and boulder clusters, irrigation pools are allowed to form (with fish screens), minimizing diversion impacts to fish and stream habitat. The CCD continues to assist local landowners and watersheds.

Water Metering

In an effort to encourage voluntary compliance with state metering requirements, the CCD has partnered with the Washington State Department of Ecology to provide cost-share funding to assist Chelan County diversion owners with the installation of adequate metering equipment.

Education and Outreach

- *Kids in the Creek*

  Cascadia Conservation District participates in the *Kids in the Creek* program that was developed by local volunteers. This program won First Place for 2006 Environmental Education Curriculum from the National Association of Interpretation Media. The objectives of the program show how streams and watersheds work. Students walk away with an understanding of how their actions can affect stream health, in both negative and positive ways. They learn about watersheds, stream habitat, water quality, riparian areas, and macroinvertebrates. More information about the *Kids in the Creek*

program can be found online:
http://www.bpa.gov/corporate/KR/ed/kidsinthecreek/homepage.htm

- *Wenatchee River Salmon Festival*

  The CCD participates in the *Wenatchee River Salmon Festival*, hosted annually by the Leavenworth National Fish Hatchery and the Okanogan and Wenatchee National Forests. The festival's mission is to "provide high quality natural resource education, promote outdoor recreation, and share the cultural significance of salmon to the people of the Northwest." Information about the Wenatchee River Salmon Festival can be found online at http://www.salmonfest.org.

For more details, contact the Cascadia Conservation District by phone (509) 664-9370 or look them up on the internet at http://www.cascadiacd.org.

4.9 Chelan-Douglas Land Trust Efforts

Land Protection

The Chelan-Douglas Land Trust (Land Trust) protects lands throughout Chelan County, either through conservation easements or acquisition (B. Bugert, e-mail correspondence, February 13, 2009). Land is eligible for Land Trust protection based on the following qualifying criteria:

- Is it habitat for endangered, threatened or rare species?
- Does it contain exemplary natural ecosystems such as old-growth forests or migratory waterfowl staging/wintering areas?
- Does it include shoreline and riparian areas?
- Does it include wetlands, floodplains, or other lands important for the protection of water quality?
- Is it undeveloped land in close proximity to urban development?
- Does it have important recreational opportunities?
- Does it include parcels that could be connected to greenbelt corridors between privately protected or publicly held properties?
- Does it include unique local scenic viewpoints or outstanding physiographic features that help define the character of our locale and enhance our community's sense of place?
- Is it valuable for timber or agricultural production?
- Is it a heritage site of historic and or prehistoric value?
- Does it include ecosystems of educational or scientific value?
- Is the landowner amenable to the conservation goals of the land trust?

The Land Trust is currently collaborating with Chelan County Natural Resources to do riparian plantings along Icicle Creek and potentially future

projects throughout the County (B. Bugert, e-mail correspondence, February 13, 2009).

Education and Outreach

- *Chelan County Good Neighbor Handbook*

  To promote community stewardship, the Land Trust publishes the *Chelan County Good Neighbor Handbook* as a tool to ensure people do their part in keeping the County a special place to live. The handbook is available online at:
  http://www.cdlandtrust.org/Good%20Neighbor%20HB%20for%20web.pdf

- *Workshops*

  The Land Trust is working to make the case that land conservation is a good investment for local communities. They believe that, "we do not need to choose between a healthy economy and healthy landscapes" (Chelan-Douglas Land Trust website). As part of this effort, the Land Trust partners with several local organizations to present workshops on various topics ranging from the economy to the environment. Recent workshops cover noxious weeds, sustainable landscaping and insects.

- *Conservation Roundtable, Ag and Environment Dialog, Environmental Film Series*

  The Land Trust works closely with a wide variety of landowners, conservation groups, farmers, and resource agencies to develop innovative approaches to natural resource management. The Conservation Roundtable seeks to facilitate communication and collaboration among conservation groups. This dialog fosters understanding and collaboration among farmers, agriculture groups, and environmental groups to promote sustainable, productive, and profitable farms in the region. The Land Trust sponsors a monthly environmental film series (Chelan-Douglas Land Trust website).

The Land Trust is able to work quickly and creatively with local citizens, helping to preserve the unique character of the region and enhance the quality of life for residents, visitors, and future generations. For more details, contact the Chelan-Douglas Land Trust by e-mail: info@cdlandtrust.org or phone: (509) 667-9708.

4.10 Chelan County Public Utility District Efforts

Habitat Conservation Plan

The Chelan County Public Utility District (PUD) is collaborating with local, state, and federal governments; tribes; and private landowners to restore and protect salmon and steelhead habitat in the mid-Columbia and its tributaries. As part of the Habitat Conservation Plan (HCP) Tributary Program, the PUD funds projects

to help protect and enhance salmon and steelhead spawning, rearing and migration. These projects will help the PUD meet its HCP commitment of "no-net-impact" to migrating fish. One such project includes the acclimation and rearing of summer steelhead on Blackbird Island in Leavenworth. The PUD, as part of its mitigation responsibility for the Wenatchee River basin has been rearing summer steelhead in the Blackbird Island fish pond each spring since 2009 (D. Davies, e-mail correspondence, March 9, 2009). Additional information about steelhead acclimation on Blackbird Island is found in the Trout Unlimited section below (Section 4.11).

Potential PUD projects may include bank and shoreline restoration, removal of migration barriers, enhancing stream flows, native riparian plantings, wetland restoration, constructing in-stream habitat structures, acquiring conservation easements or other means to preserve critical floodplain properties, and reconnecting relic side channels to provide rearing habitat (CCPUD website). Any individual or group can propose an HCP project through either of following two funding options. The General Salmon Habitat Program will fund projects costing $25,000 or more. The Small Projects Program is for projects costing less than $25,000 and is designed to encourage community groups working in cooperation with landowners (CCPUD website).

FERC Licensing

The PUD has restored a historic Wenatchee River side-channel as off-channel refuge and rearing habitat for salmonids. Located near Dryden, the groundwater-fed channel was enhanced (into pool/riffle habitat with large woody debris) and now provides spawning and rearing habitat. Monitoring reports have identified juvenile chinook and coho salmon and steelhead rearing, and adult coho salmon spawning in the enhanced channel (J. Osborn, personal communication, March 17, 2009). Continued monitoring of the site will include electrofishing and snorkel surveys and the collection of temperature data (J. Osborn, personal communication, March 17, 2009).

Education and Outreach

The PUD offers public tours of the Rocky Reach Hydroelectric Project that begin at the Rocky Reach Visitor Center. These tours include detail about the PUD's fish recovery efforts throughout the Columbia River basin in addition to the dams fish bypass system, assorted hatchery projects and restoration/mitigation projects.

4.11 Trout Unlimited Efforts

The mission of the Washington Council of Trout Unlimited and the Icicle Chapter is to, "'CONSERVE, PROTECT AND RESTORE' cold water fisheries,

their watersheds and ecosystems, as a means of maintaining our quality of life!" Trout Unlimited has been on the forefront of fisheries restoration work at the local, state and national levels. Their website explains that they remain committed to applying "the very best information and thinking available" to conservation work and have developed cutting-edge tools to help direct efforts toward those fish populations most in need of protection or restoration.

Trout Unlimited's Icicle chapter, with backing from the City of Leavenworth, restored a fish pond on Blackbird Island about 50 feet from the Wenatchee River to make it suitable for raising 53,000 steelhead per year in cooperation with the Chelan County PUD. Trout Unlimited acquired water rights which allowed constant stream flow into the pond from the Wenatchee River via inlet/outlet structures installed in October of 2008. The goal is to acclimate (imprint) steelhead on Wenatchee River water in hopes of having returning adults and potentially a Wenatchee River steelhead fishery in years to come. The pond has dual use as a steelhead rearing facility (smolts released into the river) and kids fishing derby pond (using sterile trout planted after steelhead smolt release). Chelan County Natural Resources Department (CCNRD) and Trout Unlimited planted 500 trees and bushes around the pond.

4.12 United States Fish and Wildlife Service Efforts

Restoration

The USFWS has been involved in numerous restoration projects and activities in Chelan County. Currently the USFWS is involved in the implementation of habitat restoration projects associated with the Wenatchee Watershed Planning Unit, Integrated Status and Effectiveness Monitoring Project (ISEMP), CCNRD, CCD, and the Yakama Nation. The USFWS actively participates on several interdisciplinary teams that work towards Wenatchee watershed restoration efforts including: the Upper Columbia Regional Technical Team (RTT), Upper Columbia Salmon Recovery Board, the Mid-Columbia HCP Tributary Sub-Committee and the Priest Rapids Coordinating Committee's Habitat Sub-Committee. The USFWS also provides funding for restoration activities through the Western Native Trout Initiative, the National Fish Passage Program (NFPP), Partners for Fish and Wildlife and the Fisheries Restoration and Irrigation Mitigation Program. More information about the USFWS involvement in these programs can be found online at http://www.fws.gov/pacific/Fisheries/sp_habcon/index.html.

In Chelan County, the USFWS is the lead agency on two extensive projects in the Wenatchee basins. These projects are summarized below.

- *Icicle Creek Restoration*

In 2006, the BOR and the USFWS convened a Project Alternative and Solution Study (PASS) to sequentially evaluate habitat restoration and water intake for the Leavenworth NFH. Goals for this project are to: improve fish passage and stream habitat; improve management and conservation efforts for water use by the irrigation district, Leavenworth NFH and Sleeping Lady Resort; and increase fish survival and spawning success in Icicle Creek. A group of policy and technical representatives from the USFWS, BOR, other federal and state resource agencies, the Yakama Nation, and the Wild Fish Conservancy were all invited to contribute staff to a technical team. Beginning in October 2006, the technical team collaborated and developed a preferred alternative design for the new Leavenworth NFH water intake system, which was approved for implementation by the USFWS and the BOR in November 2007. Final approval for the project is still pending due to the required completion of NEPA, various permits, and related actions.

In February 2008, the PASS effort shifted focus towards habitat restoration within the historic channel of Icicle Creek (adjacent to Leavenworth NFH). Restoration will include the construction of roughened fish passage channel and restoration of a normative flow regime. Additional habitat improvements may include LWD placement and native riparian plantings. The BOR has budgeted funds for PASS meetings, facilitation, engineering design, and related efforts during FY 2009 in support of the technical team's goal of finalizing plans for the restoration project as soon as possible. Once the project plan is finalized and approved, the USFWS will re-initiate and complete consultation on implementation of the plan and Leavenworth NFH operations, in addition to completing NEPA compliance procedures prior to initiating construction of this project. (The above information was provided via e-mail communication with Jim Craig, USFWS Mid-Columbia FRO, March 10, 2009).

- *Chumstick Passage Barrier Removal*

The USFWS and the CCNRD are working with local land owners to remove 17 fish passage barriers along Chumstick Creek. Approximately 20 miles of instream habitat will be restored to steelhead, spring chinook and reintroduced coho salmon with the removal of barriers on Chumstick Creek (including the North Road). This project is possible with funding from Bonneville Power Administration (BPA) and the National Fish Passage Program (NFPP). (The above information was provided via e-mail communication with Jim Craig, USFWS Mid-Columbia FRO, March 10, 2009).

Education and Outreach

The USFWS's Mid-Columbia FRO is also a lead and partner in several education and outreach programs throughout the County. They inform the public about local restoration efforts, while providing environmental education to the community.

- *Kids in the Creek*
  The USFWS partners with the CCD on this program, described in detail in CCD section above.

- *Wenatchee River Salmon Festival*
  The USFWS is one of the lead entities that host the *Wenatchee River Salmon Festival* each year at the Leavenworth National Fish Hatchery. The CCD is one of the festival sponsors. Detail about the festival can be found in section 4.8 above.

For more information about the USFWS's programs and/or reports, contact the Mid-Columbia Fisheries Resource Office (FRO) in Leavenworth at (509) 548-7573 or look online at http://www.fws.gov/midcolumbiariverfro.

4.13 United States Forest Service Efforts

Restoration

The USFS is responsible for vegetation/fuel and road management and is an active participant in watershed-level restoration efforts throughout Chelan County. The Leavenworth Ranger District may assist in watershed planning efforts in addition to the research and monitoring programs for fish and wildlife species of the watershed, including participation in the ISEMP (P. Archibald, personal communication, February 26, 2009).

Education and Outreach

The USFS is implementing its *Respect the River* program that educates recreational users about riparian protection, managing and restoring riparian vegetation, reducing stream bank erosion, and improving floodplain water storage (Chelan County Conservation District 2006).

4.14 Yakama Nation Efforts

Yakama Nation projects throughout the mid- and upper-Columbia's ceded lands follow the tribes mission, "to preserve, protect, enhance, and restore culturally important fish populations and their habitats throughout the Zone of Influence of the Yakama Nation and to protect the rights of Yakama Nation members to utilize these resources as reserved for them in the Treaty of 1855." The

Wenatchee basin is one area in Chelan County that the Yakama Nation hopes to "demonstrate the fishery benefits of integrated land and water management practices" (Yakama Nation website).

The Yakama Nation's Mid-Columbia Field Station (located in Peshastin) has lead restoration efforts that have successful returned extirpated coho salmon to the Wenatchee basin. Restoration efforts are focused on upper Wenatchee River tributaries, with rearing at the Leavenworth NFH and naturalized acclimation ponds along Nason Creek. The Yakama Nation also participates in numerous salmon recovery and watershed planning efforts, in addition to the research and monitoring programs for fish species of the watershed, including participation in the ISEMP.

Please see the following website for more information about the Yakama Nation Fisheries program: http://host119.yakama.com

5. LIST OF ADDITIONAL PROJECTS AND PROGRAMS TO ACHIEVE LOCAL RESTORATION GOALS

Additional restoration opportunities, not previously mentioned in WRIA and other watershed planning efforts, were identified in the *Analysis Report* (TWC and J&S 2009) as follows:

Riverside Park: Wenatchee River spring and fall discharges of 20,000 cfs or greater threaten the existing streamside canopy cover, vegetation and dike stability. Left and right bank reduction of shoreline armoring, addition of LWD, river meandering and revegetation could stabilize the stream bank and create off-channel salmonid spawning and juvenile rearing areas. Nature interpretive signs can be posted to entice the birding and naturalist communities to utilize this park. Special restoration attention to the left bank could decrease noise from U.S. Highway 2, improving the overall park and City aesthetic.

Chelan County Historical Museum and Pioneer Village: Similar Wenatchee River armor reduction, stream bank stabilization and revegetation, as mentioned above, can continue downstream of the Riverside Park to the end of Riverfront Drive (right bank) and the Chelan County Historical Museum and Pioneer Village (left bank). The Chelan County Historical Museum and Pioneer Village has wonderful restoration potential providing opportunities for public involvement and education.

Mission Creek: Seasonal floods cause considerable property damage, bank erosion and sediment loss throughout the creek. Reduce armoring and improve native vegetative cover to add habitat complexity and contribute to large woody debris recruitment. Creation of off-channel areas may minimize flooding and provide salmonid spawning and juvenile rearing areas. A combination of native revegetation and bioengineering techniques could be provided to secure the bank from excessive erosion.

General: At an October 2008 public meeting, a number of attendees commented that several sections of the Wenatchee River and Mission Creek contain debris (old tractors, large metal pieces, household appliances etc…) that could be removed to improve stream and fish habitat, and City aesthetics.

6. PROPOSED IMPLEMENTATION TARGETS AND MONITORING METHODS

As previously noted, the shoreline areas in Chelan County and the City of Cashmere occupy industrial, commercial, agricultural, multi- and single-family residences, and public recreation/open space areas. Therefore, efforts should be made to improve and retain shoreline ecological function through the promotion of restoration and healthy practices at all levels, from large-scale industrial users to single-family property owners. Chelan County and the City of Cashmere already have very active environment-focused communities with a strong restoration and education focus. Continued improvement of shoreline ecological functions along the many shorelines requires a comprehensive watershed approach, which combines all planning and implementation efforts.

The following table outlines possible schedules and funding sources for implementation of a variety of efforts that could improve shoreline ecological function, and are described in previous sections of this report.

Table 1. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Schedule	Funding Source or Commitment
4.1 WRIA 45 Participation	WRIA 45 DIP: 1) Implementation is ongoing	Implementation goals identified in the WRIA 45 DIP are being completed in addition to salmon recovery and water quality actions that have evolved since the DIP was adopted. Funding entities have been identified in the DIP and will be addressed as funds become available.

Restoration Project/Program	Schedule	Funding Source or Commitment
4.2 Chelan County Department of Natural Resources	Ongoing	Coordinate with the County as applicable on implementation of actions as guided by the UCSRB Implementation Plan, the Wenatchee River CMZ study and watershed plans and DIP's (listed above) as funding and grant money is available.
4.3 Comprehensive Plan Policies	Amended 2008	The City makes substantial staff time commitments in the course of project and program reviews to determine consistency and compliance with the recently updated comprehensive plans.
4.4 Critical Areas Regulations	Amended 2008	The City makes substantial staff time commitments in the course of project and program reviews to determine consistency and compliance with the recently updated critical areas regulations.
4.5 Stormwater Management and Planning	Ongoing	Drainage systems will be updated as new development occurs. The City makes substantial staff time commitments in the course of multi-agency drainage studies, management and planning efforts.
4.6 Public Education	Ongoing	Education is identified as essential to the region in several park/recreation and comprehensive plans. City staff time and materials are provided in developing and planning for public education and outreach opportunities.
4.7 Audubon Society Efforts	Ongoing	The City will cooperate with NCW Audubon as appropriate in planning efforts and education/outreach opportunities as funding allows.
4.8 Cascadia Conservation District Efforts	Ongoing	The City will cooperate with the CCD as appropriate to support in planning efforts, project implementation, and education/outreach opportunities as funding allows.
4.9 Chelan-Douglas Land Trust Efforts	Ongoing	The City will cooperate with the Land Trust as appropriate to support land protection efforts and planning efforts, project implementation, and education/outreach opportunities as funding allows.

Restoration Project/Program	Schedule	Funding Source or Commitment
4.10 Chelan County Public Utilities District Efforts	Ongoing	The City will cooperate with the CCPUD as appropriate to support goals and opportunities identified in the HCP tributary program in addition to projects required as part of PUD's FERC relicensing.
4.11 Trout Unlimited Efforts	Ongoing	The City will cooperate with Trout Unlimited as appropriate to support fish protection and conservation efforts throughout the region as funding allows.
4.12 United States Fish and Wildlife Service Efforts	Ongoing	The City will cooperate with the USFWS in restoration, conservation and education/outreach opportunities throughout the region as funding allows.
4.13 United States Forest Service Efforts	Ongoing – limited projects	The City will cooperate with USFS as appropriate to support restoration, research, monitoring and education/outreach opportunities and partnerships.
4.14 Yakama Nation Efforts	Ongoing	The City will cooperate with Yakama Nation as appropriate to support watershed planning, restoration, research, and monitoring opportunities as funding allows.

City planning staff will track all land use and development activity, including exemptions, within their respective shoreline jurisdictions, and will incorporate actions and programs of other departments as well. Reports will be assembled by each jurisdiction that provides basic project information, including location, permit type issued, project description, impacts, mitigation (if any), and monitoring outcomes as appropriate. Examples of data categories might include square feet of non-native vegetation removed, square feet of native vegetation planted or maintained, reductions in chemical usage to maintain turf, linear feet of eroding stream bank stabilized through plantings, linear feet of shoreline armoring removed or modified levees, changes to square footage of over-water cover, or number of fish passage barriers corrected.

The report would also recommend or describe relevant updates to WRIA and City goals and implementation plans, and outline current and ongoing implementation of various programs and restoration actions (by local government or other groups) that relate to watershed health.

The staff reports will be assembled to coincide with Comprehensive Plan updates and will be used, in light of the goals and objectives of the Shoreline Master Program, to determine whether implementation of the SMPs is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the *Shoreline Inventory and Analysis Report* (TWC and Berk 2012). In the long term, the City should be able to demonstrate a net improvement in its shoreline environments.

Based on the results of these assessments, the City may make recommendations for changes to its SMP.

7. RESTORATION PRIORITIES

This restoration plan, a phase of the Shoreline Master Program update process (consistent with WAC 173-26-201(2)(f)), includes "goals, policies and actions for restoration of impaired shoreline ecological functions." Restoration opportunities have been "designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program." This Restoration Plan demonstrates how specific potential projects match and meet regional or City-wide goals and objectives of the region, watershed planning entities, and environmental organizations that contribute or could potentially contribute to improved ecological functions of the shoreline. Prioritization of specific projects and project types, implementation strategies, and schedules will be based on information found in watershed or basin plans.

The process of prioritizing actions that are geared toward restoration of the City shoreline areas involves balancing ecological goals with a variety of site-specific constraints. Briefly restated, the City environmental protection and restoration goals include 1) protecting watershed processes, water quality and quantity; 2) protecting open/recreational space and the habitats for fish and wildlife; and 3) contributing to ESA listed spring chinook and steelhead conservation and recovery efforts. Constraints that are specific to the City of Cashmere include 1) the community's diverse past and present land uses and desires (that includes livestock grazing, orchards, and logging), 2) rivers and streams that have been confined by roads or that have altered flow regimes from the construction of levees, and 3) the highly developed and armored shorelines along the Wenatchee River. While much of the County lands offer good ecological functions (generally the upper basins and forest/wild lands of each drainage), opportunities have been recognized to further enhance ecological functions, conservation and education of these shorelands. Goals and constraints were used or will be used in the watershed plan and implementation plan to develop shoreline restoration actions and a ranking prioritization of projects, programs, or sub-basins specific to WRIA 45 and the City of Cashmere.

Although restoration project/program scheduling has been suggested and summarized in each watershed and entity planning effort identified in Chapters 3 and 4, the actual order of implementation may not always correspond with the priority level assigned to that project/program. This discrepancy is caused by a variety of obstacles that interfere with efforts to implement projects in the exact order of their perceived priority. Some projects, such as those associated with riparian planting, are *relatively* inexpensive and easy to permit and should be implemented over the short and intermediate term despite the perception of lower priority than projects involving extensive shoreline restoration or large-scale capital improvement projects. Projects with available funding will be initiated immediately for the worthwhile benefits they provide and to preserve a sense of momentum while permitting, design, site access authorization, and funding for the larger, more complicated, and more expensive projects are under way.

8. REFERENCES

Archibald, Phil. U.S. Forest Service. Personal communication. February 26, 2009.

CCPUD [Chelan County Public Utilities District] website. http://www.chelanpud.org/environmental.html

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9. LIST OF ACRONYMS AND ABBREVIATIONS

BOR ..... Bureau of Reclamation

CCCD ..... Chelan County Conservation District

CCD ..... Cascadia Conservation District

CCNRD ..... Chelan County Natural Resource Department

CCPUD..... Chelan County Public Utilities District

CDLT..... Chelan Douglas Land Trust

cfs..... cubic feet per second

CMZ ..... channel migration zone

DIP..... Detailed Implementation Plan

DPS..... Distinct Population Segment

ESA ..... Endangered Species Act

ESU ..... Evolutionarily Significant Unit

FERC..... Federal Energy Regulatory Commission

FRO..... Fisheries Resource Office

FWHCA ..... Fish and Wildlife Habitat Conservation Area

GIS ..... Geographic information systems

ISEMP..... Integrated Status and Effectiveness Monitoring Project

LWD ..... Large Woody Debris

NEPA..... National Environmental Policy Act

NFH..... National Fish Hatchery

NOAA Fisheries ..... National Marine Fisheries Service

NPDES..... National Pollutant Discharge Elimination System

NPS..... National Park Service

NRCS..... Natural Resources Conservation Service

OHW/M ..... ordinary high water/mark

PUD ..... Public Utility District

RCW ..... Revised Code of Washington

SMA..... Shoreline Management Act

SMP ..... Shoreline Master Program

UCRTT ..... Upper Columbia Regional Technical Team

UCSRB..... Upper Columbia Salmon Recovery Board

UGA ..... Urban Growth Area

USFS ..... United States Forest Service

USFWS ..... U.S. Fish and Wildlife Service

WAC..... Washington Administrative Code

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

WDNR..... Washington Department of Natural Resources

WRIA..... Watershed Resource Inventory Area

WWMP..... Wenatchee Watershed Management Plan

WWPU ..... Wenatchee Watershed Planning Unit