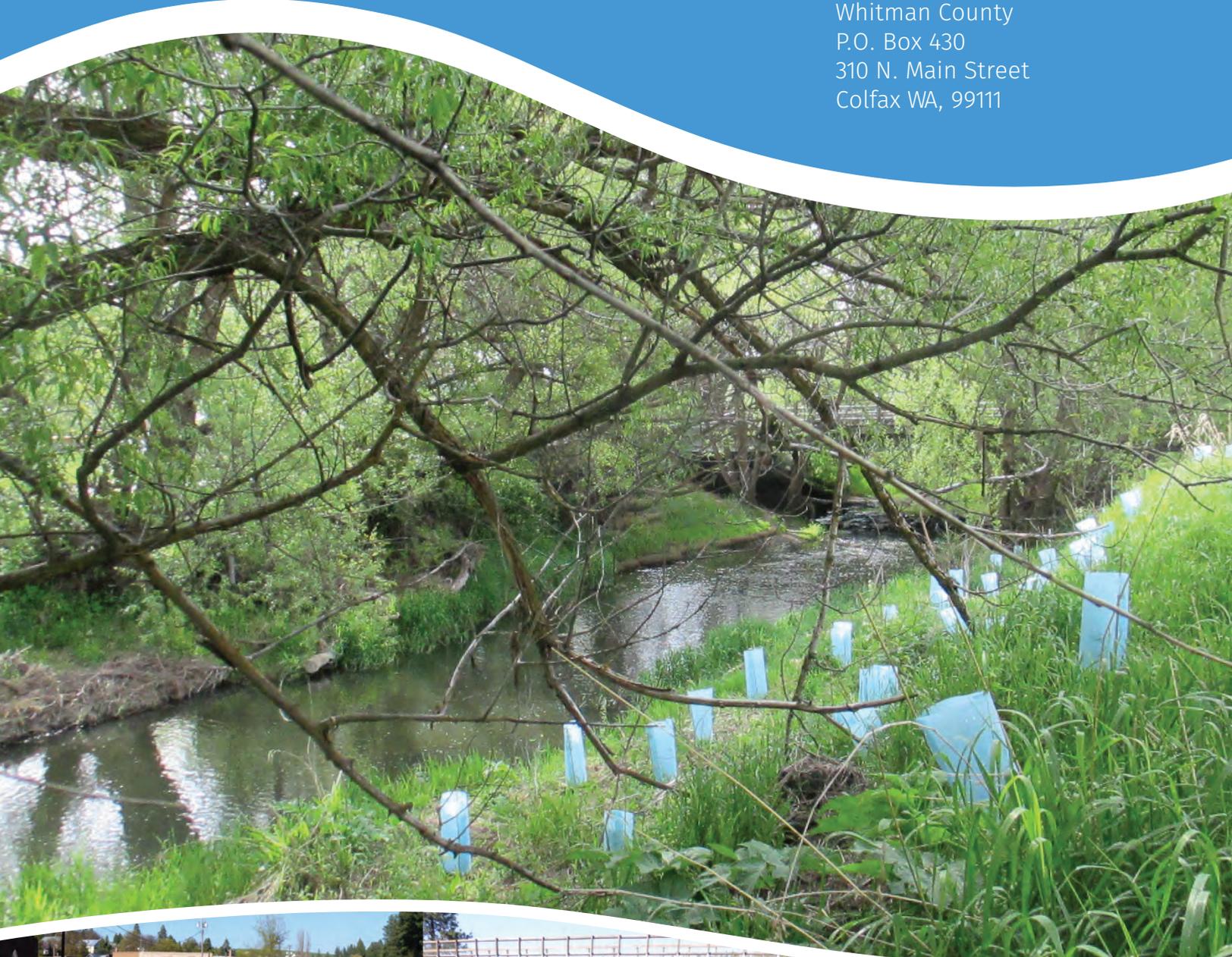


SHORELINE RESTORATION PLAN FOR SHORELINES IN WHITMAN COUNTY; THE CITIES OF COLFAX, PALOUSE, PULLMAN AND TEKOA; AND THE TOWNS OF ALBION, MALDEN AND ROSALIA

Prepared for:

Whitman County
P.O. Box 430
310 N. Main Street
Colfax WA, 99111



June 2015

FINAL

**WHITMAN COUNTY
GRANT NO. G1400494**



**SHORELINE RESTORATION
PLAN**

**FOR SHORELINES IN WHITMAN COUNTY, THE
CITIES OF COLFAX, PALOUSE, PULLMAN AND
TEKOA AND THE TOWNS OF ALBION, MALDEN,
AND ROSALIA**

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SHORELINE RESTORATION PLAN

WHITMAN COUNTY, THE CITIES OF COLFAX, PALOUSE, PULLMAN AND TEKOA, AND THE TOWNS OF ALBION, MALDEN AND ROSALIA

1 INTRODUCTION

This Shoreline Restoration Plan builds on the goals and policies proposed in the Shoreline Master Program (SMP). The Shoreline Restoration Plan provides an important **non-regulatory** component of the SMP to ensure that shoreline functions are maintained or improved despite potential incremental losses that may occur even with implementation of SMP regulations and mitigation actions.

The Shoreline Restoration Plan draws on multiple past planning efforts to identify possible restoration projects and reach-based priorities, key partners in implementing shoreline restoration, and existing funding opportunities. The Shoreline Restoration Plan represents a long-term vision for **voluntary** restoration that will be implemented over time, resulting in ongoing improvement to the functions and processes in the County's shorelines.

Many of the restoration opportunities noted in this plan may apply to private property, as well as public property. It is not the intent of the County to require restoration on private property or to commit privately owned land for restoration purposes without the willing and voluntary cooperation and participation of the affected landowner.

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)). Secondly, the Shoreline Restoration Plan may enable Whitman County, the Cities of Colfax, Palouse, Pullman and Tekoa; and the Towns of Albion, Malden and Rosalia (hereafter, "the Cities") to ensure that the minimum requirement of no net loss in shoreline ecological function is achieved on a county-wide basis, notwithstanding any shortcomings of individual projects or activities.

Activities that will 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 shoreline areas, or agreed-to off-site mitigation, which as conditioned, is equal in ecological function to the baseline levels at the time each activity takes place. However, some uses and developments cannot be fully mitigated. This could occur when project impacts may not be mitigated in-kind on an individual project basis, such as a new bulkhead to protect a single-family home that can be offset, but not truly mitigated in-kind unless an equivalent area of bulkhead is removed somewhere else. Another possible loss in function could occur when impacts are 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 agriculture and legal developments) may also degrade baseline conditions. Finally, the SMP applies only to activities in shoreline jurisdiction, yet activities upland of shoreline jurisdiction or upstream in the watershed may have offsite impacts on shoreline functions.

Together, different project impacts may result in cumulative, incremental, and unavoidable degradation of the overall baseline condition unless additional restoration of ecological function is undertaken. Accordingly, the Restoration Plan is intended to be a source of ecological improvements implemented voluntarily by the County and Cities, and other government agencies, developers, non-profit groups, and property owners within shoreline jurisdiction to ensure no net loss of ecological function, and where possible improvement of ecological function (see Figure 1). No net loss of ecological function is defined by the Washington Department of Ecology's (Ecology) SMP Handbook (2010) as follows:

“Over time, the existing condition of shoreline ecological functions should remain the same as the SMP is implemented. Simply stated, the no net loss standard is designed to halt the introduction of new impacts to shoreline ecological functions resulting from new development. Both protection and restoration are needed to achieve no net loss. Restoration activities also may result in improvements to shoreline ecological functions over time.”

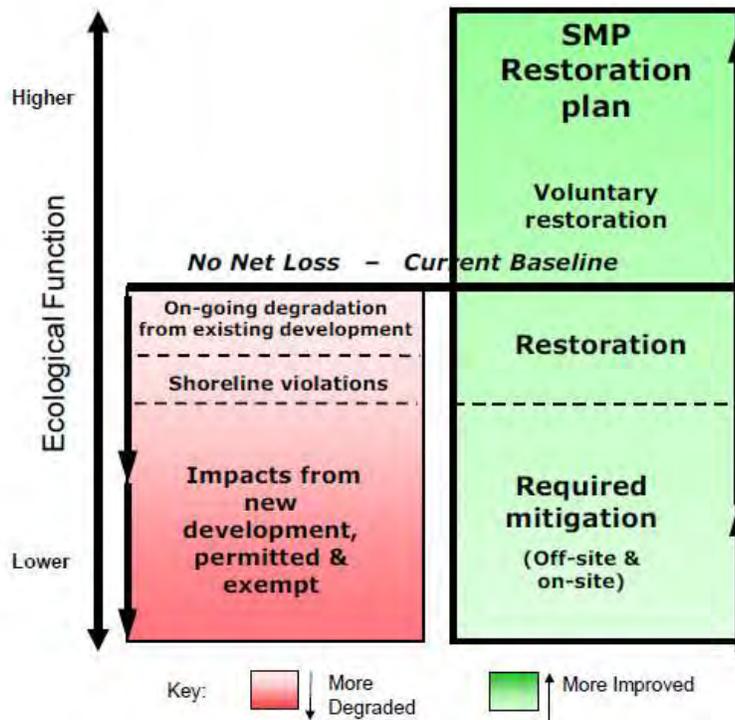


Figure 1. Diagram of the role of restoration relative to achieving the SMP standard of “No net loss” of ecological functions. (Ecology 2010)

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 (Guidelines). Specifically, WAC Section 173-26-201(2)(f) of the Guidelines¹ states:

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

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.

- (iv) Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs;
- (v) Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals;
- (vi) Provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

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

1.3 Types of Restoration Activities

Consistent with Ecology's definition, use of the word "restore" in this document is not intended to encompass actions that reestablish historic conditions. Instead, it encompasses a suite of strategies that can be approximately delineated into five categories:

- Creation: Establishment of new shoreline resource functions where none previously existed.
- Re-establishment: Restoration of a previously existing converted resource that no longer exhibits past functions.
- Rehabilitation: Restoration of functions that are significantly degraded.
- Enhancement: Improvement of functions that are somewhat degraded.
- Preservation: Protection of an existing high-functioning resource from potential degradation. Preservation is often achieved through conservation easements or the purchase of land.

Restoration can sometime be confused with mitigation. Mitigation is defined by WAC 197-11-768 as the sequential process of avoiding, minimizing, rectifying and reducing impacts, as well as compensating for unavoidable impacts and monitoring the impact. Two primary conditions differentiate the terms restoration and mitigation: the outcome and whether the action is voluntary or required as a result of anticipated or realized impacts. Table 1 describes the differences between the two terms.

Table 1. Characteristics of restoration versus mitigation.

Restoration	Mitigation
Actions to reestablish or improve functions or processes above the existing baseline condition.	Actions to compensate for unavoidable negative impacts to functions or processes and return functions and processes to existing baseline condition (the condition prior to the proposed impact).
Voluntary	Required as a result of anticipated or realized impacts

Although some of the projects or programs included in this Restoration Plan may be implemented as mitigation, only those projects and programs that have reliable certainty of being implemented as restoration will be utilized in the County’s and Cities’ cumulative impacts analysis.

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, describe existing plans and programs that facilitate restoration actions, identify the County’s and Cities’ partners in restoration, and enumerate ongoing and potential projects that positively impact the shoreline environment. The Restoration Plan also identifies anticipated scheduling and funding of restoration elements.

In total, implementation of the SMP in combination with this Restoration Plan 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 Whitman County’s and the Cities’ shoreline environment. The restoration opportunities identified in this plan are focused primarily on publicly owned open spaces and natural areas. **Any restoration on private property would occur only through voluntary means or through re-development proposals.**

1.5 Utility of this Restoration Plan

In addition to meeting a grant requirement, this Restoration Plan can be used by property owners and other interest groups in several ways.

1. Information Resource: This plan identifies a number of organizations in Chapter 4, Existing and Ongoing Plans and Programs, that provide guidance, and in some cases funding, for a wide variety of restoration projects. These organizations can be consulted by property owners or other parties wishing to

undertake a restoration action. Some specific guidance materials are also listed in Chapter 8, Website Resources.

2. Grant Applications: Programs and projects (either specific or general) included in this Restoration Plan may find it easier to obtain grant funding if the project is included in a publicly vetted and adopted plan.
3. Mitigation: In those circumstances where off-site mitigation may be necessary, this document can provide a source of programmatic ideas or specific projects that maximize the effect of the mitigation regionally.

Depending on the scale and type of project, property owners and interest groups wishing to conduct a restoration action may need to obtain permits from the County and/or Cities, as well as Washington Department of Fish and Wildlife, Washington Department of Ecology, Washington Department of Natural Resources, and/or the U.S. Army Corps of Engineers. In shoreline jurisdiction, the project would need to comply with the County's and Cities' Shoreline Master Program, including the incorporated critical areas regulations. Also depending on the scale and type of project, professionals, including biologists or engineers, may need to assist in project development.

2 SHORELINE INVENTORY AND ANALYSIS REPORT SUMMARY

The County and Cities recently completed a draft comprehensive inventory and analysis of their shorelines (June 2014) as an element of the SMP update. Whitman County adopted its existing SMP in 1974, and it has not been updated since that time. The Cities have each adopted the County's current SMP. The information provided in the *Draft Shoreline Analysis Report for Shorelines in Whitman County; the Cities of Colfax, Palouse, Pullman and Tekoa; and the Towns of Albion, Malden and Rosalia* (The Watershed Company and Berk 2014) (herein referred to as "Analysis Report") will be used to update the SMP. Shoreline uses, developments, and activities are also subject to the County's and Cities' Comprehensive Plans, development regulations, and various other provisions of County, City, State and Federal laws, as well as other codes and policies.

The purpose of the shoreline inventory and analysis was to gain a greater understanding of the existing condition of the County's and Cities' shoreline environment to ensure the updated SMP policies and regulations will protect local ecological processes and functions. The Analysis Report describes existing physical and biological conditions in

shoreline jurisdiction. A summary of the current regulatory framework is included as well as existing shoreline conditions, an analysis of ecological functions and ecosystem-wide processes, land use, and public access. A map folio of the shoreline inventory results is also included as Appendix B of the Analysis Report.

The Analysis Report is divided into seven main sections: Introduction, Summary of Current Regulatory Framework, Summary of Existing Ecosystem Conditions, Shoreline Inventory, Analysis of Ecological Functions, Land Use Analysis, and Shoreline Management Recommendations. Most of these chapters were subdivided into separate sections for the County and Cities. Ecosystem-wide discussions were broken into the three major Water Resource Inventory Areas (WRIAs) located within Whitman County: WRIA 34- Palouse, WRIA 35- Middle Snake, and WRIA 56- Hangman (Latah) Creek. Results of the Analysis Report are summarized below to provide context for this Restoration Plan. A map of the WRIAs in Whitman County is located in Appendix A.

2.1 Shoreline Jurisdiction

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, lakes whose area is greater than 20 acres, and all marine waters. Ecology has identified the upstream limits of shoreline streams and rivers based on projected mean annual flow of 20 cfs (Higgins 2003), and those lakes that are 20 acres or greater in size.

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 County’s and Cities’ shoreline management area includes the shorelines of 12 lakes, the Palouse River, South Fork Palouse River, Rock Creek, Cottonwood Creek, Fourmile Creek, Hangman Creek, Pine Creek, Union Flat Creek and the Snake River. In total, the

shoreline inventory mapped approximately 464 miles of river/stream shoreline and 40 miles of lake shoreline that meet shoreline jurisdiction criteria. Total jurisdictional shoreland area equals approximately 29 square miles, which includes associated wetlands, floodways, and portions of associated floodplains.

2.2 Existing Conditions Summary

Unincorporated areas make up most of the County territory and the majority of the County's shorelines are rural and agricultural in nature. City shorelines are generally more developed, predominantly in the largest cities of Pullman and Colfax where the majority of housing, commercial and industrial activities are centered. Findings of existing shoreline conditions and functions provided in the Analysis Report are briefly summarized below by WRIA. For reach-level detail of each shoreline waterbody, please refer to the full Analysis Report.

2.2.1 County Shorelines

WRIA 34- Palouse

The topography of the Palouse watershed transitions from mountainous terrain in Idaho to rolling hills composed of basalt covered with loess in the central portion of the watershed. The far western portion of the watershed is in an area called the Channeled Scablands. This area was shaped by massive floods over the past million years, which left behind exposed channels of the underlying basalt amongst islands of loess (HDR and EES 2007). Historically, the dominant vegetation in the Palouse watershed was a bunchgrass association. Much of that vegetation has been converted to dryland agriculture or altered by rangeland uses. Soil erosion resulting from storm water runoff has been a continuing problem throughout WRIA 34 as a result of land conversions to agriculture. An estimated 40% of the topsoil in the Palouse has been lost to erosion during this time (HDR and EES 2007). Most livestock grazing occurs in the westernmost portion of the basin, within the Channeled Scablands. Urban development makes up a small portion of the watershed.

Riparian areas have been significantly altered by land use in the South Fork Palouse subbasin, and many small intermittent streams have been converted to drainage ditches throughout the North and South Fork subbasins.

Lakes

Twelve shoreline lakes occur in the Palouse Watershed, all located in the northwest quadrant of the County. Many of the lakes are natural depressions with basalt bottoms

and no outlets (HDR and EES 2007). The level of existing and potential future development surrounding the lakes is generally low and functions are largely unaltered.

Palouse River

Shoreline conditions vary greatly throughout the Palouse River shorelines, from steep cliffs and canyons in the lower reaches, to forested meanders through the center of the County. The majority of shorelands are undeveloped outside of agricultural uses, which are the predominant cause of shoreline degradation. Functions are most impaired in the industrial area northwest of Colfax.

There are no ESA-listed salmonids or other listed aquatic species above the Palouse Falls. Upstream of the falls, resident rainbow trout are present. Downstream of the falls, there is documented presence of Dolly Varden/bull trout, summer steelhead and fall Chinook in some reaches.

South Fork Palouse River

Hydrologic functions are generally the highest functions of this waterbody due to extensive floodplain and some floodway and generally good connections to the channel. Vegetation and habitat functions are limited mainly by modifications from agricultural use. Narrow riparian vegetation separates the agriculture fields and associated development from the river in most places and roads or development are also present in all reaches. No anadromous fish use is documented.

Rock Creek

Rock Creek flows southwest though the northwest corner of the County. It briefly enters Adams County and then re-enters Whitman County and flows south parallel to the County's western border until it converges with the Palouse River west of Endicott. There are no ESA-listed salmonids documented in Rock Creek, but rainbow trout are documented throughout all reaches. Shorelines are largely unaltered except for some agricultural modifications primarily in the lower creek. High amounts of wetland are present however, vegetation is naturally limited by the basalt landscape throughout the region.

Cottonwood Creek

Only the very western end of Cottonwood Creek, near the confluence with Rock Creek, meets jurisdictional requirements. A fairly large area of potentially associated wetlands (PAW) abutting the creek are also within jurisdiction. High hydrologic function is present overall. No armoring or overwater structures are present though the channel has

a generally simple structure with few backwater areas or meanders. However, a high percentage of wetland is present.

Agricultural uses are the main modifications to shoreline function. Most of the PAW is in agricultural use. The narrow channel of the creek itself has herbaceous vegetation present within it in places but trees and shrubs are limited throughout most of the creek and PAW.

Fourmile Creek

The portion of Fourmile Creek directly east of the convergence with the South Fork of the Palouse meets the jurisdictional threshold. The reach runs through primarily agricultural lands which are the primary modification to functions in this reach. No other development is present except for roads.

The creek's shorelines function highly for moderating sediment transport and attenuating flow energy due to a significant amount of floodplain with good connectivity to the channel and little armoring present. Shoreland area is dominated by cultivated crops which have limited the width of natural vegetation. No wetlands are mapped.

Pine Creek

The lower portions of Pine Creek shorelines are heavily agricultural with limited riparian vegetation while the upper portions are less altered with more woody vegetation present and less agricultural impact in the shorelands. One area just outside of Rosalia includes a wastewater treatment facility. Agricultural uses and loss of riparian vegetation are the primary functional impairments. A high percentage of floodplain and some floodway are present in the lower reaches but are limited in the upper reach where vegetation cover is greater.

Union Flat Creek

Union Flat Creek is a tributary to the Palouse River. It flows west through the central portion of Whitman County, entering the Palouse just northwest of Lacrosse. No anadromous salmonid species are documented in the creek. Portions of the creek flow through a canyon through the scabland region while other areas flow through regions with a very narrow area of riparian vegetation with shorelands dominated by agricultural fields. The upper portion of the creek has a somewhat wider area of riparian vegetation including areas of sparse evergreen forest. Rainbow trout are documented throughout.

WRIA 35- Middle Snake

Historically, the Middle Snake River watershed was covered by prairie and canyon grasslands and shrub-steppe at low to mid-elevations. Forests dominated as elevation and proximity to the Blue Mountains increased (Kuttel 2002). As a result of land use changes and development, much of the prairie, shrub-steppe, and riparian habitats have been lost or modified. Conversion of perennial bunchgrass prairies to production of annual crops has led to significant quantities of fine sediment erosion and deposition in WRIA 35 streams. Floodplains throughout WRIA 35 have been converted to agricultural and residential use. This development has resulted in channel straightening, armoring, and simplification (Kuttel 2002).

The Snake River contributes about 20 percent of the Columbia River flow (Snake River Salmon Recovery Board 2011). Stream flows are controlled by the hydropower system, as well as seasonally variable flows in smaller tributaries corresponding with winter precipitation and spring snowmelt. The hydrology along the Snake River has been severely altered by the installation of hydroelectric dams. The dams were built to provide hydroelectric power, river navigation, irrigation water, and flood control. Two Corps operated dams, Little Goose Dam and Lower Granite Dam are located in Whitman County.

The channel in most areas has steeply sloped banks or is within steep-sided canyons with limited vegetation. A railroad prism and associated armoring limits shoreline functions and natural cliffs limit vegetative and hyporheic functions throughout much of the shoreline. However, cliffs and bluffs provide unique upland habitats and waterfowl concentration areas are present throughout. Several parks and recreation areas are present where riparian vegetation is denser and/or wider, usually where banks are less steep.

Industrial uses are also present including the two dams mentioned above. Dam operations retain sediment and result in seasonal and daily fluctuations in water levels. Industrial development and associated armoring, lack of vegetation and development impairs the shorelines in these areas.

WRIA 56- Hangman Creek

Hangman Creek flows through sedimentary hills of sand, gravel and cobbles deposited during the Lake Missoula floods (Spokane County Conservation District (SCCD) 2005). Hangman Creek historically supported a tribal salmon fishery upstream of the Town of Tekoa (Edelen and Allen, 1998 in SCCD 2005). However, as vegetation was cleared and soils were tilled to accommodate agriculture in the late 1800s, stream conditions became

degraded. Today, agriculture is the predominant land use in the upper and middle reaches of the Hangman Creek watershed. Removal of riparian vegetation has resulted in increased bank erosion and stream siltation. Forestry practices in the upper watershed have altered stream flows, increasing peak flows and lowering summer low-flows.

Hangman Creek has degraded water quality and is on the 303(d) list for dissolved oxygen and has a Category 4a listing (TMDL in place) for bacteria and temperature. No anadromous fish presence is documented. Agriculture is a significant land use in this area and is the primary modification to the Hangman Creek shorelines. Development of agriculture has led to a reduction of natural riparian vegetation and altered channel structure.

2.2.2 Cities and Towns

Albion

Albion lies within WRIA 34. The South Fork of the Palouse River flows north through the town. It crosses the southwest corner of the City. Shorelands are primarily undeveloped but some residential and industrial development is present. Agricultural uses are dominant. All reaches have a water quality Category 4a listing for bacteria.

Colfax

Colfax lies within WRIA 34. The north and south forks of the Palouse River meet in the city. The north fork meanders through recreational, residential, and agricultural uses before entering a concrete flume. Most of the south fork meanders through more dense residential and commercial areas and is contained within a concrete flume for most of its length. Downstream of the confluence, the Palouse River continues along some minor residential uses and primarily industrial uses.

All reaches have some level of functional impairment. The highest functioning area is on the northwest edge of the city where scrub shrub vegetation is most intact, armoring is lacking, substantial areas of floodplain and floodway and a wetland fringe are present. However, the proximity of the reach to intense development and alteration on the opposite bank, as well as the presence of the railroad at the upland edge of the reach, limits function. A flume and levees through the center of the City, as well as upland commercial and industrial development, have a strong, adverse impact on processes and functions in much of the City.

Malden

Malden lies within WRIA 34. Pine Creek flows west through the northern half of the City. Shorelands are primarily in agricultural use with occasional sparse scrub/shrub or forested vegetation scattered along the reach, mostly in the western half. Generally a narrow band of dense herbaceous vegetation separates the channel from cultivated crops which dominate the shorelands. Trees or shrubs are occasionally present helping to provide bank stabilization. Moderate habitat function is present as there is very little development and some wetland and riparian habitat is present. There is also undisturbed connectivity between the channel and evergreen forest located upslope.

Palouse

Palouse lies within WRIA 34. The Palouse River meanders north and continues flowing west through the center of the City. The most impaired area is the industrial and commercial shorelines through the downtown area. Even in these most impacted areas, the banks of the river are well vegetated with trees and shrubs in places; however, the shorelands upland are almost all developed a narrow band of shoreline vegetation is all that separates the channel from the development.

Pullman

Pullman lies within WRIA 34. The South Fork of the Palouse River flows northwest through the City. The first two reaches heading upstream (Industrial and Commercial/Business District) pass through the most developed areas of the town, with a number of crossings, narrower riparian corridor, and high impervious surface. The next reach (Parks) contains more open space, active recreational lands, and scattered pockets of more intense commercial development. The most upstream reach is South Commercial. Similar to the Industrial reach, this reach has some intense commercial developments, but these are separated from the stream by wider riparian corridors generally. The Residential reach is composed of a number of scattered segments, most of which do not directly abut the river, but are separated from the river by other reaches.

Rosalia

Rosalia lies within WRIA 34. Pine Creek flows north through the western half of the city. It then briefly enters Spokane County before turning and continuing back southwest into Whitman County toward Malden. This southwest flowing portion of Pine Creek shoreline jurisdiction encompasses a small piece of the parcel containing the Town of Rosalia airport located directly west of the Town. Other portions of the shoreline include city parks, residential and agricultural uses.

Tekoa

Tekoa lies within WRIA 56. Hangman Creek flows northwest through the city. The shorelines in the northwest portion of the City flow through a rural residential area with the highest function relative to the other reaches. Also fairly high functioning is the portion of the creek that meanders through open space in the southern end of the City. Habitat function is highest in these reaches. The least amount of development is present and the riparian corridor provides some connectivity between habitat types including forested areas. These areas have narrow but dense herbaceous vegetation present along the channel with occasional shrubs and trees providing filtration and stabilization functions. The lowest functioning area is in the middle of the City which is impacted from commercial and urban residential development.

3 RESTORATION GOALS

The following subsections discuss restoration goals and objectives previously identified in local planning efforts. Discussions are broken into the three WRIAs and Cities when applicable.

3.1 County Wide

3.1.1 Comprehensive Plan and Critical Areas Regulations

The County's Comprehensive Plan, amended most recently in 2010, contains the following goals specific to protecting and restoring natural resources:

- Minimizing degradation of existing natural areas and preserving designated critical areas.
- Using State Environmental Policy Act (SEPA) review to ensure that development does not adversely impact natural resources, include water resources and critical or sensitive areas.

The County has critical areas regulations that are designed to implement the goals, policies, guidelines, and requirements of the County Comprehensive Plan and Growth Management Act. The Critical Areas Ordinance (CAO) (Whitman County Code (WCC) Chapter 9.05) aims to limit development and alteration of critical areas. Relevant goals contained in the CAO include:

- Maintain healthy, functioning ecosystems through the protection of unique, fragile, and valuable elements of the environment, including ground and surface

waters, wetlands, fish and wildlife and their habitats, and to conserve the biodiversity of plant and animal species;

- Direct activities not dependent on critical areas resources to less ecologically sensitive sites and mitigate unavoidable impacts to critical areas by regulating alterations in and adjacent to critical areas; and
- Prevent cumulative adverse environmental impacts to water quality, wetlands, fish and wildlife habitat, and the overall net loss of wetlands, frequently flooded areas, and habitat conservation areas.

3.1.2 **County Conservation Districts**

Four conservation districts are active in Whitman County, and each has developed work plans and priorities to address their mission of promoting natural resource conservation. A map of the boundaries of the conservation districts operating in Whitman County is located in Appendix A.

Whitman Conservation District

The Whitman Conservation District has a 5-Year Plan (2010 to 2015) which lists specific 2015 natural resource priority goals that include outreach, education, livestock management to protect streams through participation by livestock managers, review of financial incentives, noxious weed control, and actions through the Conservation Reserve Program. Pertinent general goals are further defined in the FY2014 Annual Work Plan as follows:

“Water Quality: By June 2018 have a demonstrated increase in: participation by livestock operators to have a plan in place addressing water quality issues; riparian areas along streams managed efficiently, runoff from livestock feeding areas eliminated; increase awareness of CREP [Conservation Reserve Enhancement Program] and CCRP [Continuous Conservation Reserve Program] programs to buffer waterways; reduction of most regulators’ concerns in the District

Livestock: By June 2018 have a demonstrated increase in: Partnering with the 5 Star Watershed Stewardship program; collaborate with Whitman County Extension and Whitman County Cattlemen Association on grazing alternatives; increase public perception of the positive aspects of ranching on private and public land; increase the public awareness to the benefits of cohabitation for wildlife and livestock; increase awareness of best management practices by ranchers; reduce regulators’ concerns in well managed livestock operations”

Palouse Rock Lake Conservation District

The Palouse Rock Lake Conservation District has a 5-Year Plan and 2014 Annual Work Plan addressing natural resource priorities related to restoration. Specific goals targeted for 2015 are:

- “Develop plantings for protection of soil and for wildlife habitat
- Increase acres of contour grass buffer strips from the current of approximately 40% up to 50%
- Increase acres of riparian buffer strips from 15% to 50% of the eligible riparian acres to help move cattle in riparian feeding areas away from the streams and rivers
- Increase documentation of water quality and quantity improvements that are achieved
- Have 95% of all identified AFO/CAFO [Animal Feeding Operations/Confined Animal Feeding Operations] issued resolved
- 80% of all the cattle will be located in feeding areas away from the streams and rivers
- Plans that treat water quality will be completed and 50% of the cooperators will be in compliance with water quality standards for nutrients and sedimentation
- Enhance off-site watering facilities for livestock and wildlife”

Palouse Conservation District

The Palouse Conservation District Fiscal Year 2014 Annual Work Plan lists the Conservation District’s most current goals and objectives for each of its natural resource priority program areas. Overarching goals for each pertinent program area are as follows:

- “Soil and Health Erosion Control: Demonstrated improvement in soil health including reduction in erosion as a result of people assisted, conservation plans developed and conservation practices implemented.
- Water Quality: Demonstrated improvement in water quality measures for water bodies in the Palouse CD including reduction in sediment, fecal coliform, temperature as a result of people assisted, conservation plans developed and conservation practices implemented.
- Replenishing the Landscape (habitat, vegetation, prairie): Demonstrated improvement in replenishing the landscape including habitat, vegetative cover,

Palouse Prairie, as a result of people assisted, conservation plans developed and conservation practices implemented

- Weed Control: Demonstrated improvement in weed control and technical assistance for district projects as a result of people assisted, weed control practices implemented
- Small Acreage Issues: Demonstrated improvement in small acreage conservation issues as a result of people assisted, conservation plans developed and conservation practices implemented
- Education/Outreach: Demonstrated improvement in conservation awareness and interest as a result of educational and outreach events, increased partner agencies and organizations involved and media coverage”

Pine Creek Conservation District

Finally, the Pine Creek Conservation District, which covers a portion of the Hangman Creek watershed, lists the following relevant goals in its 5-Year Plan 2011-2016:

- Reduce erosion and improve water quality by providing technical assistance to an average of 10%, annually, of district farm operators.
- Prepare a detailed inventory of livestock operations and have all identified operations complete livestock/water quality plans.
- Seek out and apply for funding to implement a comprehensive cost- share program for direct seed/reduced tillage activities.
- Increase direct seeded and reduced tillage acres to 50% of farmland in the district.
- Perform a quality check on approximately 5% (annually) of the CRP acres in the district by cooperating with NRCS through the TSP program.

3.2 WRIA 34

WRIA 34 watershed planning efforts are detailed in the Palouse Watershed Plan (HRD/EES 2007). Some of the relevant basin-wide goals outlined in the plan are:

- Emphasize voluntary, incentive-based management that use existing water conservation programs.
- Support use of urban and rural land BMPs.
- Conduct water resource management education and outreach, addressing such topics as water quality, conservation, and BMPs.

- Restore and enhance floodplains, riparian areas, and wetlands with a focus on improving water quality, providing habitat, and reducing severity of flood events.
- Review and update land use plans and regulations to be compatible with and support resource management goals.
- Establish funding for long-term monitoring and evaluation of watershed plan implementation.
- Protect surface and groundwater quality for aquatic habitat.
- Manage stormwater in urban and rural areas to improve water quality.
- Review water quality standards and establish natural temperature levels for streams that reflect watershed conditions.

3.3 WRIA 35

The Snake River Salmon Recovery Board completed the final Snake River Salmon Recovery Plan for SE Washington in 2011 (Snake River Salmon Recovery Board 2011). The Plan details steelhead and chinook recovery and restoration goals, including “broad sense” goals that take into consideration economic, social, and ecological values, as well as legislative mandates. The Plan’s vision statement includes:

- Meeting recovery goals established by NMFS for listed populations of anadromous fish species and by U.S. Fish and Wildlife Service for bull trout,
- Achieving healthy and harvestable populations of listed species in affected subbasins, and
- Realizing these objectives while recognizing that local culture and economies (agriculture, urban development, logging, power production, recreation, and other activities) are beneficial to the health of the human environment within the recovery region.

Restoration goals (Chapter 4 of the plan) are presented as target abundance of adult salmonids, and limiting factors that affect habitat are identified to guide efforts to address threats. Specific goals for each management unit are presented in Table 6-1 of the plan.

3.4 WRIA 56

The Hangman (Latah) Creek’s Watershed Planning Unit, representing local residents, governmental agencies, tribes, and other watershed stakeholders, developed a Water

Resources Management Plan in 2005 (Hangman (Latah) Creek Watershed Planning Unit 2005)). The Plan defined broad goals and more specific objectives that build upon the earlier phases of watershed planning. Relevant goals and objectives are:

Goals (objectives):

- Improve water quality. Work toward meeting and maintaining Washington State Class A and EPA water quality criteria for all parameters and beneficial uses; Reduce nutrient and waste loading from point and non-point sources; collaborate with partners, including Ecology, in developing TMDLs for pollutants exceeding Class A criteria.
- Reduce suspended sediment loading. Maintain and enhance floodplain functions and values; assess and encourage landowners to reduce erosion; assess current conditions and encourage the improvement of riparian areas and wetlands; evaluate stormwater management practices and make recommendations.
- Maintain and Enhance Fish and Wildlife Habitat. Promote and encourage the planting of native vegetation along stream banks; assess instream flow needs.

3.5 Pullman

The City of Pullman's *Comprehensive Plan* (1999) includes specific goals and policies that would contribute significantly to improvements in ecological function in the City, including:

"GOAL P4: Complete and protect a system of green belts, centered on streams and wildlife corridors, to protect natural resources and provide passive recreation."

"GOAL LU8: Protect, enhance, and wisely utilize Pullman's natural resources."

"GOAL LU9: Preserve wetlands, riparian areas, and significant plant and wildlife habitat."

"Goal LU13: Preserve shoreline areas, while assuring public access to the water."

3.6 Palouse

The Palouse Comprehensive Plan, adopted in 1997, includes an Environment element with the goal to "improve, protect and/or improve Palouse's natural environment". The Comprehensive Plan is currently in the process of being updated. The draft update

available on the City's website expands on the previous goal in the Environment element with the following vision statement:

"Maintain a system of habitat, recreation lands, and facilities in Palouse that defines and enhances the built and natural environment. Support and nurture plant and wildlife habitat, offer a well-balanced range of recreation opportunities which enriches the lives of Palouse's citizens."

Policies and strategies designed to achieve this vision are included in the plan which would significantly improve ecological function in the City.

4 EXISTING AND ONGOING PLANS AND PROGRAMS

State, regional, and local agencies and organizations are actively involved in shoreline restoration, conservation, and protection in and around Whitman County. These partners and their local roles in shoreline protection and/or restoration are identified below.

4.1 Whitman County Comprehensive Plan

The County's Comprehensive Plan contains an Environmental Quality and Conservation Element providing policies related to conservation of natural resources. The County has developed guidelines for implementing Comprehensive Plan goals (See Section 3) related to natural resource protection. These focus on policies, regulations, and procedures governing critical and sensitive areas and include:

- Designating and mapping critical environmental sites and ceasing exemption of dwellings within designated areas from Environmental Impact Statement requirements when a Threshold Determination of Significance is reached.
- Incorporating goals and guidelines into Whitman County ordinance governing SEPA review.
- Use the removal of the exemption (above) as an opportunity to evaluate impacts of single-family homes, employ mitigation measures, preserve vegetative cover, and modify locations of buildings and roads.

The Plan presents implementation guidelines that incorporate procedural and regulatory frameworks.

4.2 Whitman County Critical Areas Ordinance

The County's Critical Areas Ordinance (CAO) is contained in Whitman County Code (WCC) Chapter 9.05. The CAO is designed to implement the goals, policies, guidelines, and requirements of the Whitman County Comprehensive Plan and the Growth Management Act. The CAO was adopted in 1994, and was most recently revised in 2012. The regulations specify minimum Riparian Habitat Area and wetland buffer widths and limit the type and extent of development that can alter critical areas. Regulations encourage no net loss of critical area function and apply to geologically hazardous areas, critical aquifer recharge areas, and frequently flooded areas in addition to wetlands and streams/shorelines.

4.3 Whitman County Parks and Recreation Comprehensive Plan

Some shoreline areas include portions of County parks. The Whitman County Parks and Recreation Comprehensive Plan for 2004-2009 (the most recent available) includes goals and strategies for the expansion of environmental programs. Some action items focus on development of environmental interpretation programs and management practices that will maintain parks, at least in part, as natural areas and wildlife sanctuaries (Whitman County 2004).

4.4 Port of Whitman County Comprehensive Plan 2010-2015

While focusing efforts on industrial real estate development, transportation, economic development, water-related recreation, the Port of Whitman County "*endeavors to balance economic development and growth with good environmental stewardship.*" The Port recognizes the need to consider more restrictive stormwater regulations and watershed ecological needs. The Port plan includes among its objectives incorporating proactive environmental planning into industrial development, and specific projects recognize the need for an environmentally friendly approach in order to preserve and protect the watershed.

4.5 Palouse Wind Compensatory Habitat Mitigation Plan Fund

In 2011, Whitman County issued a Conditional Use Permit (CUP) for a large wind energy facility. During the environmental review for the Project, Whitman County considered the WDFW's Wind Power Guidelines. The Guidelines inform siting agencies, the wind industry, and other wind energy stakeholders of recommended methods of baseline and operational monitoring and mitigation approaches for impacts to habitat and wildlife.

In accordance with the WDFW Guidelines and the CUP, the Palouse Wind Compensatory Habitat Mitigation Plan (Mitigation Plan) was established for the Project. This Mitigation Plan outlines strategies for mitigating impacts to Native Perennial Grasslands and Palouse Prairie remnants, including the funding of individual mitigation projects within Whitman County. Landowners owning land in Whitman County, tribal and local governments, educational institutions, non-profit organizations, such as watershed councils and Soil and Water Conservation Districts, and other community groups and organizations may apply to the County for funding for projects which propose to restore or expand existing Native Perennial Grassland habitat, including Palouse Prairie remnants (Whitman County n.d.).

4.6 Cities and Towns Comprehensive Plans and Critical Areas Regulations

4.6.1 City of Colfax

The Colfax Comprehensive Plan contains an Environment element which identifies seven areas to direct future planning and projects. None of the issues identified focus specifically on restoration priorities but a statement is included that “the city should strongly encourage the conservation of natural resources”.

Colfax also has critical areas regulations contained in Colfax Municipal Code Title 17, adopted via Ordinance 13-02 in May 2013. In those regulations, the City requires wetland buffers of between 50 and 250 feet based solely on wetland category (CMC 17.14.040.C). No stream buffer widths are specified, although the regulations require preparation of a habitat management plan based on best available science and a demonstration that a project would not degrade functions and values of the habitat (CMC 17.14.060).

4.6.2 Town of Malden

Malden has critical areas regulations contained in Malden Municipal Code Chapter 17.12, adopted via Ordinance No. 444 in July 2007. In those regulations, the City requires wetland buffers of between 50 and 250 feet based solely on wetland category (MMC 17.12.050.C). No stream buffer widths are specified, although the regulations require preparation of a habitat management plan based on best available science and a demonstration that a project would not degrade functions and values of the habitat (MMC 17.12.070).

4.6.3 **City of Palouse**

The Palouse Comprehensive Plan (1997) includes an implementation strategy “to protect and restore the Palouse River’s water quality and to diminish future flooding, develop partnership with upstream parties to improve upriver watershed management”. It also includes several techniques for preserving the remaining natural areas including obtaining conservation easements, purchasing critical land from willing landowners, swapping non-critical City owned land for privately owned natural areas, using a Conservation Land Trust to acquire and manage natural areas and designation some of the natural areas as critical wildlife habitat conservation areas (City of Palouse 1997).

Palouse also has critical areas regulations contained in Palouse Municipal Code Chapter 17.26, last updated in 2007. In those regulations, the City requires wetland buffers of between 50 and 250 feet based solely on wetland category (PMC 17.26.050). No stream buffer widths are specified, although the regulations require preparation of a habitat management plan based on best available science and a demonstration that a project would not degrade functions and values of the habitat (PMC 17.26.070).

4.6.4 **City of Pullman**

This City of Pullman Comprehensive Plan (1999) was prepared to represent the vision for the future growth of Pullman and means by which to realize that vision. It includes a Parks and Open Space Element (Chapter 9) which recognizes that riparian corridors represent unique recreational opportunities. It states that “the shoreline of the South Fork of the Palouse River holds special significance to the community and the city should place a priority upon acquiring parcels of land along the shoreline, as they become available.” Chapter 9 includes goals and policies related to restoration of the South Fork of the Palouse River and protection of riparian corridors, as well as establishment of greenways to link open spaces together (City of Pullman 1999).

Pullman has critical areas regulations contained in Title 16 of the Pullman Municipal Code, most recently updated in 2007. In those regulations the City specifies recommended minimum Riparian Habitat Area buffer widths of 50 feet to 150 feet depending on the stream type (PMC 16.50.470). Wetland buffers of between 25 and 200 feet are required based on wetland category and intensity of proposed land use (PMC 16.50.270).

4.6.5 **City of Tekoa**

Tekoa has critical areas regulations contained in Ordinance 764, which amends Tekoa Municipal Code Chapter 4.24, Critical Areas Protection. These regulations from 2007 require wetland buffers of between 50 and 250 feet based solely on wetland category (TMC 4.24.050.C). No stream buffer widths are specified, although the regulations require preparation of a habitat management plan based on best available science and a demonstration that a project would not degrade functions and values of the habitat (TMC 4.24.070).

4.7 **Washington State Conservation Commission**

The Conservation Commission guides the state's Conservation Districts in their common mission to educate and inform landowners, managers, and other stakeholders about the value and need for natural resource conservation. Through the Conservation Districts, the Conservation Commission implements non-regulatory conservation practices. Four conservation districts are active in Whitman County which are identified in the sections below.

The Washington State Conservation Commission also produces special studies and reports. The report, *Salmonid Habitat Limiting Factors Water Resource Inventory Areas 33 (Lower) and 35 (Middle) Snake Watersheds, and Lower Six Miles of the Palouse River* (Kuttel 2002), was designed to identify limiting factors in the mainstem Snake River and Palouse River below Palouse Falls. The results of the analysis were used to rate habitat conditions on private and public lands in the watersheds and generate recommendations (see Section 5).

The Conservation Commission in cooperation with the USDA Farm Service Agency administers the Conservation Reserve Enhancement Program (CREP). In Washington State, Whitman County is the second-largest recipient of CREP funds provided to volunteer landowners who dedicate riparian areas for protection and enhancement. In 2012, more than 1,200 Whitman County landowners received a combined total of \$13,548,000 in CREP payments (http://farm.ewg.org/top_recips.php?fips=53075&progrcode=total_cr&page=15&yr=2012). See Section 6.1.2 below for additional discussion.

4.7.1 **Palouse Conservation District**

The Palouse Conservation District completed the North Fork Palouse River Watershed Characterization (Resource Planning Unlimited 2002a) report in January 2002 to inform

an action plan to address problems within the watershed. The report was intended as a basic information source upon which planners could build planning efforts in the North Fork Palouse River watershed. The document provides guidance for ongoing efforts, including water quality monitoring, farming practices, livestock impacts, and other resource-related concerns. The North Fork Palouse Water Quality Improvement Plan (Resource Planning Unlimited 2002b), completed as a companion document to the Watershed Characterization, collates input from stakeholders within the watershed and serves as a framework for voluntary restoration efforts addressing water quality in the watershed. The *Palouse Watershed Plan* (HDR and EES 2007) was complete during WRIA 34's Phase 3 watershed planning effort. The plan recognizes that fish and wildlife habitat is dependent upon water resources, and includes both basin-wide and management area goals focusing on water quantity and quality.

The *WRIA 34 – Palouse Watershed Detailed Implementation Plan* (DIP) (Golder Associates, Inc 2009) is intended to provide a framework within which the recommendations, actions, and studies in the Palouse Watershed Plan (HDR/EES 2007) may be implemented. The Watershed Plan is intended as a tool to aid local decision-makers in identifying and prioritizing water resources management issues, and to facilitate solution development for these issues. The actions and strategies identified in the plan will help to correct altered conditions and maintain overall watershed health, attain compliance with the Clean Water and Endangered Species Acts, and contribute to the recovery of listed species and opportunities for recreational and tribal fisheries. Some of the goals outlined in the Palouse Watershed Plan translate to recommendations that may be addressed during implementation stages. These were ranked in the DIP to develop a prioritized list and implementation schedule. Appendix A of the DIP lists and tracks prioritized actions and includes lead and supporting entities.

4.7.2 **Palouse Rock Lake Conservation District**

The Palouse Rock Lake Conservation District promotes the conservation and enhancement of natural resources through private and public programs, education, and the dissemination of technical and scientific information in its mission. Water quality, soil erosion and soil quality are the top resource priorities in the District. Programs include a livestock program using Livestock Pasture Upgrades Along Creeks grant funds designated to provide cost-sharing for fencing, livestock crossings, stock tanks, and other livestock best management practices (BMPs) that help them protect water quality. As of 2010, more than 16 miles of the Palouse River had been protected and enhanced (<https://fortress.wa.gov/ecy/publications/publications/1010039.pdf>).

4.7.3 Whitman Conservation District

The Whitman Conservation District (WCD) provides programs and services to landowners and residents, including natural resource education and technical assistance. The Whitman Conservation District also has a cost-sharing program to help property owners implement BMPs that support improvements in water quality. The District's mission is *"to promote the wise, ethical and sustainable use of natural resource, by leadership in the education and assistance of all people in the District."*

The Long Range Resource Program of the Whitman Conservation District, revised in 2003, defines existing and new (as of 2003) programs and activities. Resource concerns addressed by the programs and activities include soil health and erosion, water quality, livestock issues, and wildlife. Additional programs extend to marketing, training, funding, education, and other activities that the District participates in or that are essential to operation of the District. Operating policies outlined in the Long Range Resource Program require an annual report and work plan to review accomplishments and present the goals for the subsequent year. The FY2014 Annual Work Plan lists milestones and benchmarks against which progress toward objectives are to be measured as the program operates, and details estimated funding needs for each proposed activity.

4.7.4 Pine Creek Conservation District

The Pine Creek Conservation District covers the northeast quadrant of Whitman County, including Pine Creek and a portion of the Hangman Creek watershed. Their mission is *"to make available technical, financial and educational resources, whatever their source, and focus or coordinate them so that they meet the needs of the local land manager with conservation of soil, water and related natural resources"*. Similar to the other Conservation Districts, the Pine Creek Conservation District has a cost-sharing program to help landowners defray costs of BMP implementation. The District also provides low-interest loans to support purchase of equipment that enables implementation of conservation measures.

4.8 Watershed Planning Units

Funding is provided through Washington's Watershed Management Act (WMA) for areas in Washington State that wish to undertake watershed level planning and specifies ground rules for use of the funding. The WMA identifies a Planning Unit as the group that develops and initially approves the watershed plan. The above conservation districts, plus others from each watershed, participate in the watershed planning process

for their region along with local landowners, other stakeholders and government agencies. Three Watershed Planning Units are active in Whitman County:

4.8.1 **WRIA 34- Palouse Watershed Planning Unit**

The Palouse Watershed Planning Unit helped develop the Palouse Watershed Plan (2007) for the entire Palouse basin. The plan includes an overview of the major planning issues in the region, strategies and tools to address the issue, basin wide management objectives and suggested actions to be taken (HDR and EES 2007).

4.8.2 **WRIA 35- Middle Snake Watershed Planning Unit**

The Middle Snake Watershed Planning Unit is comprised of representatives from Asotin, Columbia, Garfield, and Whitman Counties, the City of Clarkston, and the Asotin County Public Utility District. The initiating governments formed the group in 2002 which includes landowners and citizens, tribes, conservation districts, agricultural groups, environmental groups, state and federal agencies. They developed the WRIA 35 Watershed Detailed Implementation Plan in 2008. In June of 2011, they adopted an updated Detailed Implementation Plan, completing Phase 4 of the Watershed Planning Process.

4.8.3 **WRIA 56- Hangman (Latah) Creek Watershed Planning Unit**

Hangman (Latah) Creek's Watershed Planning Unit, representing local residents, governmental agencies, tribes, and other watershed stakeholders, formed to gather existing and new information and formulate recommendations for future water use in the sub-basin. The goals of the Planning Unit were to:

- Develop and investigate a water balance for the watershed
- Establish a means to present publish information and provide awareness and education about watershed issues
- Establish management guidelines to improve water quality, reduce suspended sediment loading, maintain and enhance fish and wildlife habitat, and maintain watershed recreational uses.

The Planning Unit developed a Water Resources Management Plan in 2005 (Spokane County Conservation District (SCCD) 2005).

4.9 Snake River Salmon Recovery Board

The Snake River Salmon Recovery Board (SRSRB) is the Lead Entity for salmon recovery efforts in the Snake River region. The SRSRB developed the Snake River Salmon Recovery Plan for SE Washington, which includes a recovery strategy based on the results of the Recovery Plan's limiting factors analysis and their recovery and restoration goals (SRSRB 2011).

The strategy emphasizes projects with long persistence time and benefits that address the widest range of environmental attributes. The strategy promotes recovery and restoration actions that include both immediate and long-term measures and that address the root causes of habitat degradation. Actions are focused on the protection and restoration of habitat, harvest, hatcheries, and hydroelectric and utilize both population and habitat approaches. The plan includes strategic guidelines for addressing basin-wide issues, as well as a table of site-specific actions (Appendix A of the plan).

4.10 Hangman Creek TMDL

A Total Maximum Daily Load (TMDL) is a water-body-specific management plan designed to limit further water quality impairments and to bring the affected waters into compliance with applicable water quality criteria. Hangman Creek is impaired by dissolved oxygen, bacteria and temperature. Ecology and the Spokane County Conservation District (SCCD) have worked together to develop a TMDL, also known as a water quality improvement plan. After the Environmental Protection Agency approved the TMDL in 2009, Ecology and the SCCD worked with agencies and organizations to develop an implementation plan outlining what needs to occur to meet water quality targets in the watershed and various commitments to the effort. Ecology published the final implementation plan in 2011. In November 2013, various implementing partners met to discuss the status of implementation (Ecology 2011).

4.11 Palouse River TMDLs

4.11.1 Mainstem

Ecology began studying the pollutants for the mainstem Palouse in 2005. The project includes four separate studies. The first study examined toxins. A TMDL report detailing how the Palouse River will achieve water quality standards for PCBs and dieldrin was approved in 2007.

The second study examined the levels and distribution of fecal coliform bacteria throughout the watershed. This study ran from May 2007-May 2008 and a report and implementation plan outlining actions to reduce bacteria were published in December 2010. EPA reviewed the report and approved it March 2011.

The third study examined water temperature. Water temperature affects the health and distribution of fish and other aquatic life. The Palouse River is impaired by high temperatures. The goal of this TMDL is to return the river's temperature regime to natural conditions, accomplished by reestablishing shade along the river's stream banks. The final version of the report was revised in response to stakeholder comments and was submitted approved by the EPA in November 2013 (Ecology 2013).

The fourth study examined dissolved oxygen, pH, and nutrients. Data on the Palouse River indicates that at times it has too little oxygen and a pH outside the range appropriate for fish and other aquatic life. The type and amount of nutrients in a waterbody can affect both oxygen and pH levels. Data for this study was collected in conjunction with the bacteria study and intensive surveys were conducted in summer 2007. A water quality improvement report addressing temperature is in development (Ecology 2014).

4.11.2 North Fork

The portion of the Palouse River from the Idaho border to Colfax is sometimes referred to as the North Fork Palouse River. (Note that in the Analysis Report, this segment was included in the mainstem Palouse discussion, identified as Reach 10- "North Fork Palouse Agriculture. "). The north fork has impaired water quality standards for bacteria, dissolved oxygen and pH. In 2000, the Palouse Conservation District began the process of water quality monitoring and development of a plan to address fecal coliform contamination. Fecal coliform bacteria come from the intestinal tracts of humans and warm-blooded animals. It can indicate the presence of human and animal waste which may carry disease-causing organisms. The final water quality implementation plan "North Fork Palouse River Fecal Coliform Total Maximum Daily Load Water Quality Implementation Plan" was completed in 2006. A TMDL for temperature was approved in 2013 and a TMDL for dissolved oxygen and pH is currently in development and is expected to be approved by the EPA in late 2014 or early 2015. Recommended water quality improvement strategies include programs to assist landowners to install BMPs to improve riparian health and animal waste management (Ecology 2006).

4.11.3 South Fork

The South Fork Palouse River has water quality concerns over high temperatures, low dissolved oxygen, pH, bacteria and toxins. A toxins TMDL was approved in 2007 and a fecal coliform TMDL in 2011 (Washington State Department of Ecology 2007), (Washington State Department of Ecology 2011b).

4.12 U.S. Fish and Wildlife Service

In addition to its role in watershed planning groups, the U.S. Fish and Wildlife Service (USFWS) provides funding for restoration activities through the Partners for Fish and Wildlife, which provides direct financial and technical assistance for private landowners to conduct projects that improve fish and wildlife habitat. The USFWS also funds the Fisheries Restoration Irrigation Mitigation Program, which funds fish screening and fish passage improvements related to water diversions (See Tables 3 and 4).

4.13 Natural Resources Conservation Service

The USDA Natural Resources Conservation Service (NRCS) has a voluntary Wetlands Reserve Program (WRP) that “offer[s] landowners the opportunity to protect, restore, and enhance wetlands on their property.” Under the program, NRCS will fund restoration of wetlands and riparian areas in exchange for permanent or 30-year protection of the subject area in the form of easements, contracts or agreements. If the property owner enters into a permanent or 30-year easement, NRCS will pay all or up to 75% of the easements value, respectively. According to the Program’s website, “More than 11,000 of America’s private landowners have voluntarily enrolled over 2.3 million acres into the Wetlands Reserve Program. The cumulative benefits of these wetlands reach well beyond their boundaries to improve watershed health, the vitality of agricultural lands, and the aesthetics and economies of local communities.”

Unfortunately, the mechanism of the NRCS contracts does not presently allow for accurate reporting of Whitman County acreage enrolled in the WRP. As of February 2014, the WRP has been replaced with the Agricultural Conservation Easement Program (ACEP). WRP contracts established prior to 2014 are still in effect. See Section 6.1.3 for more discussion.

4.14 Palouse-Clearwater Environmental Institute

The Palouse Clearwater Environmental Institute (PCEI) is a nonprofit organization with the mission of increasing citizen involvement in decisions that affect the region’s environment. Staff and volunteers work to preserve, protect, and restore ecosystems in

the Palouse-Clearwater region. Their work includes riparian and wetland restoration, watershed planning, water quality protection, and biological monitoring with a focus on native plants and wildlife. Projects are collaborative in nature and are always science-based and community-centered.

In 2011, PCEI started an “Adopt-A-Stream” program in the City of Pullman as a collaborative project between PCEI, Pullman and private landowners. The goal of the program is to engage community members, students and businesses in the maintenance and beautification of local natural resources. PCEI also organizes an annual stream clean-up project in Pullman and has completed several restoration projects in the Palouse watershed (Palouse-Clearwater Institute 2014).

4.15 Other Volunteer Organizations

Many recreational groups and private organizations are active in Whitman County. While some of these groups may not have historically worked in the shoreline jurisdiction of Whitman County, this does not preclude involvement in voluntary restoration activities in the future. Probably the most important volunteer is the landowner that acts as a steward of the land following the completion of the project. Potentially active groups include:

- [Palouse Audubon Society](#)
- [Palouse Water Conservation Network](#)
- [Palouse Prairie Foundation](#)
- [Trout Unlimited](#)
- [Ducks Unlimited](#)

5 IDENTIFICATION OF RESTORATION OPPORTUNITIES

Restoration recommendations have been proposed by the County’s restoration partners, described in Chapter 4, based on watershed and regional restoration planning efforts. Recommendations identified in these planning efforts that are applicable to the County and City shorelines are identified below. The expected time to implement these projects was either derived directly from the planning documents or estimated based on the complexity of project implementation (i.e. riparian planting projects can be implemented

quickly, with little time required for permitting, design, and analysis compared to artificial storage projects). A very brief summary of the expected benefit of project implementation is also described.

5.1 County- and City-wide

Some of the primary issues affecting the region's streams and waterbodies that may be addressed with restoration or protection include: (1) habitat degradation with the alteration of riparian zones and conversion of small channels to drainage ditches; (2) poor water quality where fecal coliform bacteria, nutrient levels, and water temperatures often exceed Washington state standards; and (3) soil erosion from storm water runoff with the conversion to agriculture. In the Palouse River basin particularly, land use changes have led to the loss of most of the basin's riparian habitat and wetlands, contributing to erosion, increased sedimentation, and higher water temperatures (HDR and EES 2007). Water quality concerns are primarily from non-point sources, including: erosion, livestock, fertilizers, and septic systems (HDR and EES 2007). In the Middle Snake River Watershed, restoration goals are often aimed at achieving healthy, sustainable, and harvestable salmonid populations.

Table 2 highlights potential restoration opportunities for the Palouse River, Middle Snake River, and Hangman Creek Watersheds. While many of these items are more applicable to the unincorporated areas of the County, many of them are universally applicable in the Cities as well.

Table 2. Restoration recommendations for Whitman County shorelines identified through past planning efforts.

Actions/Waterbody	Expected Time to Implement	Benefit	Source
<i>Palouse River Watershed</i>			
Implement habitat improvement projects involving construction or placement of instream structures	0-3 years	water quality, streambank stabilization	Palouse Watershed Plan 2007
Implement habitat improvement projects involving out-of-stream riparian restoration or enhancement	0-3 years	stream temperature, water quality, streambank stabilization	Palouse Watershed Plan 2007
Move river dikes back from existing river channels to allow for floodplain restoration and channel maintenance	5-10 years	Instream flow, habitat enhancement	Palouse Watershed Plan 2007
Relocate campgrounds further from stream edges where assessments show potential for erosion and other adverse effects	5-10 years	Streambank stabilization	Palouse Watershed Plan 2007
Manage grazing in riparian areas by installing livestock exclusion fencing and	ongoing	water quality, streambank	Palouse Watershed

Actions/Waterbody	Expected Time to Implement	Benefit	Source
off-stream watering		stabilization	Plan 2007
Work with individual landowners to review pesticide and fertilizer use, and to implement the following best management practices to limit water quality impacts: 1. Enhance riparian areas; 2. Urban/rural education program; 3. Conservation tillage	ongoing	Water quality	Palouse Watershed Plan 2007
Reduce sedimentation by using no-till/direct seed, sediment basins, strip cropping, and other BMPs.	ongoing	Water quality	WA Conservation Commission
<i>Middle Snake River Watershed</i>			
Near Shore Assessment WRIA 35 – Investigate alternatives for modifying near shore habitat in the Snake River Reservoirs to benefit salmonids survival.	5 years	Habitat improvement	Snake River Salmon Recovery Board
Head Cut Barrier Removal (Alkali Creek) (HWS# 5-00133) - Investigate the severity of the fish barrier and determine a project design to rectify passage issues.	3 years	Barrier removal	Snake River Salmon Recovery Board
Palouse Prairie Protection (HWS# 32-00161) – protect native wet uplands through fencing or conservation agreements; restoration through digging or plugging old drain ditches no longer in use.	3 years	watershed retention, reduce sediment routing	Snake River Salmon Recovery Board
Restore riparian vegetation and employ practices that improve soil filtration, such as no-till.	ongoing	Instream flow	WA Conservation Commission
Utilize BMPs (e.g., livestock fencing, pasture rotation, off-site watering facilities for livestock) and practice vegetation management to promote growth and regeneration.	ongoing	Water quality, stream temperature	WA Conservation Commission
Restore riparian vegetation along salmonid-bearing tributaries.	0-3 years	Stream temperature, water quality, bank stabilization, habitat	WA Conservation Commission
<i>Hangman (Latah) Creek Watershed</i>			
Restore buffer of mature riparian vegetation to reduce heat loads on the stream	ongoing	stream temperature, water quality, streambank stabilization	Hangman Creek TMDL
Install livestock exclusion fencing and off-stream watering	ongoing	stream temperature, water quality, streambank stabilization	Hangman Creek TMDL

The Palouse Watershed covers the majority of Whitman County. Given that the Palouse River is a Shoreline of Statewide Significance and there is a large amount of Palouse River shoreline present in the County, it is useful to further prioritize where restoration actions may be of the most benefit. The accompanying Figures 2 and 3 provide a

qualitative “coarse scale” ranking of restoration priorities based on the relative condition of reaches within the Palouse River system. The color “red” indicates a low ranking for restoration, with “yellow” being moderate and “green” high. Reaches with both their riverine processes (i.e. channel migration, river is connected to the floodplain so that overbank flooding occurs on a regular basis) and reach functions (i.e. biological and physical functions) relatively intact are ranked higher than reaches where processes and functions are severely degraded (e.g. as a result of channelization). This ranking is an initial tool to assist in selecting restoration sites where the greatest biological lift can be achieved at a lower level of cost and effort.

Figure 2. Restoration Rankings for Mainstem of the Palouse River

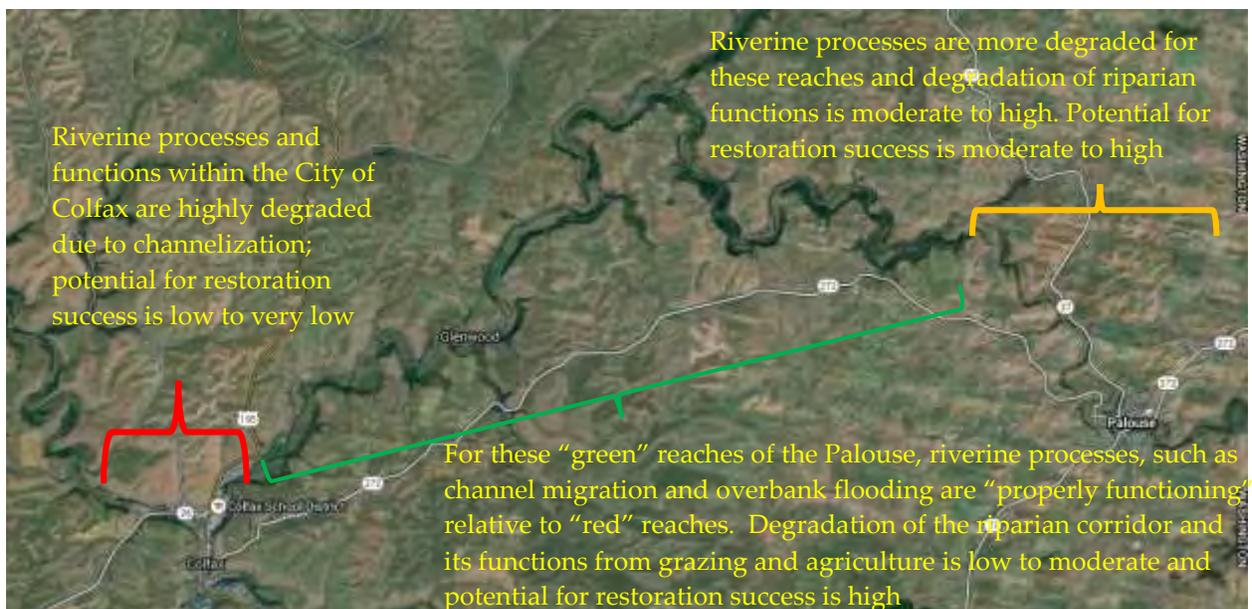
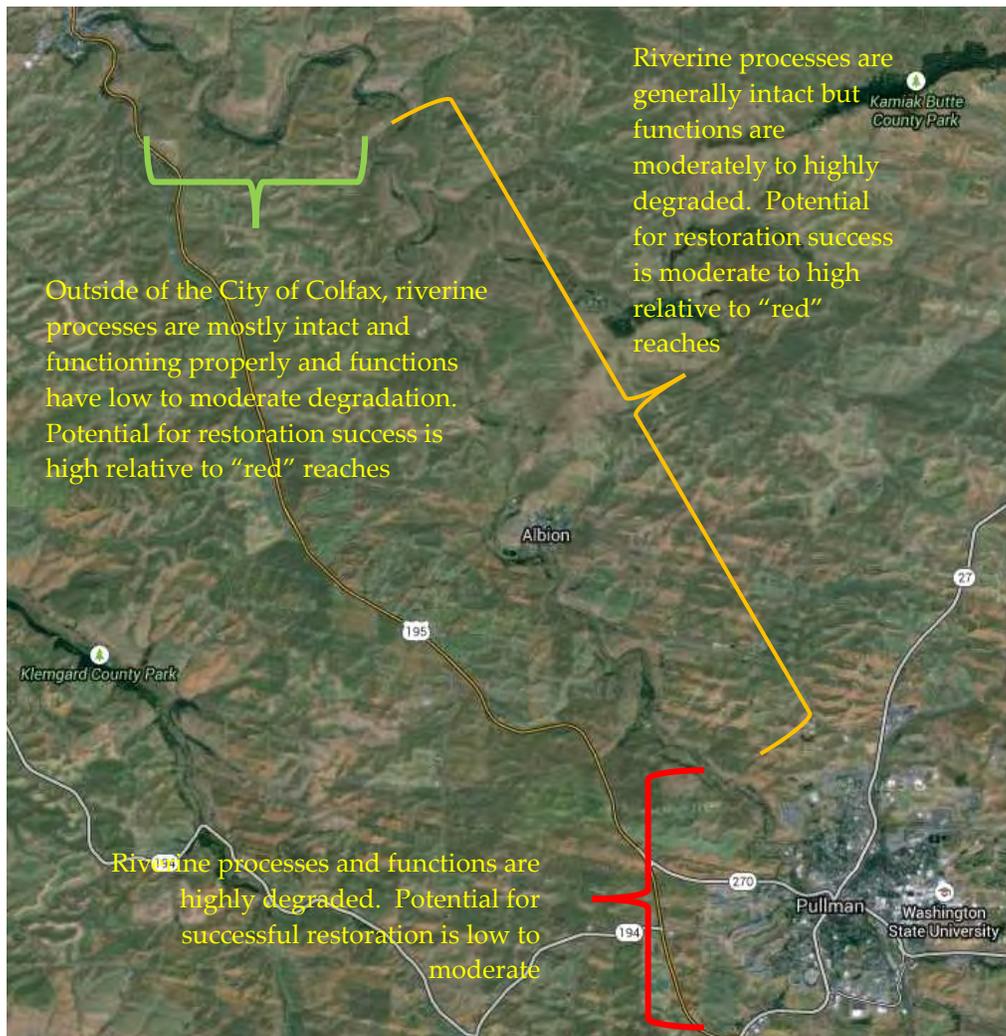


Figure 3. Restoration Ranking for South Fork of the Palouse River



5.2 City of Palouse

The City of Palouse's Comprehensive Plan (2014) identifies a number of strategies to improve environmental conditions within the City, including the following:

- Preserve natural areas through conservation easements, land acquisition and land swaps, designation of some areas as "critical wildlife habitat conservation areas," and using a Conservation Land Trust to acquire and manage natural areas.
- Planting native riparian vegetation along the Palouse River streambanks.
- In pursuit of improved water quality and to reduce flooding, "develop partnerships with upstream parties to improve upriver watershed management."

- Implement and enforce North Fork Palouse River Water Quality Improvement Plan
- Reduce soil erosion by requiring property owners to control storm run-off to a level that prevents soil erosion on their property.
- Encourage native plantings when possible.

5.3 City of Pullman

Policies identified in Pullman’s Comprehensive Plan that would contribute significantly to improvements in shoreline ecological function in the City include the following:

Policy P4.1: Attempt to restore the South Fork of the Palouse River to a more natural appearance and function.

Policy P4.2: Protect riparian corridors along perennial streams from the adverse effects of development. Maintain a buffer of vegetation (preferably native vegetation) along all streams.

Policy P4.3: Whenever possible, establish greenways to link open space areas located in close proximity to one another.

Policy LU8.4: Protect and enhance the water quality, habitat value, and beauty of all perennial streams and rivers in the city. Cooperate with neighboring jurisdictions on regional water quality issues.

Policy LU13.1: Protect public access to the shorelines. Review of all private and public developments should consider and provide for public access as close to the water as possible, consistent with protection of environmental resources and water quality.

Policy LU13.2: Protect and enhance public views of the shoreline area from adjacent upland areas, consistent with the need to protect environmental resources (including vegetation).

Policy LU13.3: Preserve the natural character of the shoreline. Ensure that public and private development, including public access and recreational development, minimizes disturbance of environmental resources and shoreline ecosystems.

Policy LU13.4: Encourage the use of native plant materials in restoration of shoreline areas or landscaping development within the shoreline area. Protect areas of native vegetation.

Policy LU13.5: Encourage the design and use of naturally regenerating systems of erosion control and water quality treatment in shoreline areas.

Policy LU13.6: Ensure that all shoreline uses are located, designed, constructed, and maintained to minimize adverse impacts to water quality and fish and wildlife resources.

Policy LU13.7: Encourage development of trails along the city's streams. All trails should be designed to protect environmental resources and minimize adverse effects to water quality.

The Plan contains other goals and policies that support acquisition of habitat areas, setting back developments from the water's edge, and working with property owners to preserve and enhance riparian areas.

Stream restoration is also ongoing in the City through the Palouse-Clearwater Environmental Institute (PCEI). A long stretch of the South Fork adjacent to the City Playfields has been enhanced with native vegetation and banks stabilized with coir fabric "logs" to help minimize erosion. PCEI also organizes an annual spring stream cleanup activity for volunteers. At present, there are also 13 stream segments in the City, including South Fork Palouse River and tributary streams, that are sponsored by different organizations or families under the Adopt-A-Stream program.

5.4 Additional Projects and Programs to Achieve Local Restoration Goals

The Analysis Report (TWC and BERK 2014) provided an analysis of existing shoreline functions on a reach basis. Based on these results the Analysis Report identified a few restoration priorities recurring through most of the shoreline reaches. Broadly, these priorities include implementing best management practices for agricultural activities to provide control and improvement of water quality, and the reestablishment of vegetated riparian buffers. Potential restoration opportunities identified for some specific reaches are discussed in more detail below.

5.4.1 County

Palouse River Industry and Agriculture

Restoration recommendations for the Palouse River are well detailed in the TMDLs for both the Mainstem and North Fork, described above. Of the specific County reaches identified in the Analysis Report, Reach 8-County Industrial appears to be most degraded. This reach lies just outside of the northwest Colfax city limits and is impacted by industrial uses. Increasing the riparian native plant density and width of vegetated buffer would help protect the river from the adjacent upland uses. Other reaches with high potential for restoration include those most heavily impacted from agricultural practices, primarily Reach 5 –Agriculture (along the southwest border of the County from near the junction with Franklin and Adams Counties, through Hooper to where the river turns east) and Reach 10 -North Fork Palouse Agriculture (from the Idaho border to just west of the community of Glenwood). Working with private landowners to voluntarily implement agriculture BMPs and habitat improvement projects involving out-of-stream riparian restoration would be beneficial to these shorelines.



South Fork Palouse River Agriculture

A long stretch of the South Fork Palouse River from just outside of Pullman to where the river veers west toward Colfax (Reaches 2 and 3) have the most potential for restoration due to degradation from agricultural practices. Working with private landowners to voluntarily implement agriculture BMPs and habitat improvement projects involving out-of-stream riparian restoration would be beneficial to these shorelines. See restoration strategies in Section 6.0 for more information on sources of funding and assistance for accomplishing restoration of these riparian areas.



Opportunities exist for restoration of riparian vegetation through voluntary measures in agricultural areas. High potential for restoration success since floodplain processes generally intact

John Wayne Pioneer Trail

The John Wayne Pioneer Trail follows the former railway roadbed of the Chicago, Milwaukee, St. Paul & Pacific Railroad which runs through portions of the shoreline within all three Pine Creek reaches and portions of Rock Creek Reaches 3 (near Imbler Creek) and 4 (near the Cottonwood Creek confluence). The trail is maintained by Washington State Parks and has a management plan in place. Relevant issues identified and addressed in the plan include control of noxious weeds, preservation of natural plant and animal communities and general hydrology concerns such as flooding hazards and potential for water quality degradation (Washington State Parks and Recreation Commission 2000).



Opportunities for riparian restoration in Rock Creek Reach 4

While restoration potential is limited in Rock Creek Reaches 3 and 4, as functions are already fairly unaltered, restoration potential exists for the Pine Creek reaches,

especially Reach 1 which is dominated by agriculture and Reach 2 which consists of wastewater treatment lagoons. Habitat improvement projects involving out-of-stream riparian restoration and increasing in-stream channel complexity and habitat features such as the addition of LWD would benefit these reaches. The trail provides a good opportunity for public involvement and education.



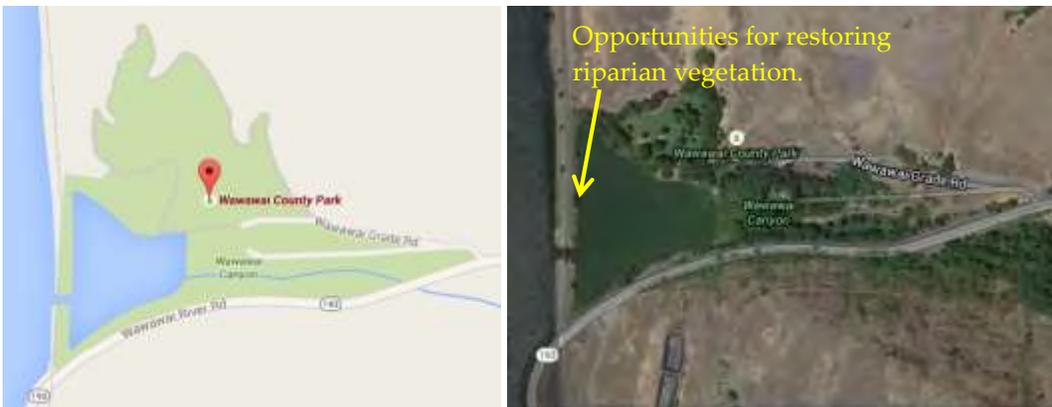
Klemgard County Park

Klemgard County Park is 59-acre recreational area located along Union Flat Creek (Reach 3) just northeast of Evans Road. Functions in this Reach are generally altered by agricultural uses and loss of riparian vegetation. The park provides a good opportunity for restoration activities which could include increasing the density and width of riparian buffer with native plant installation, as well as improving habitat connectivity between the stream channel and the forested area to the south.



Wawawai County Park

The 49-acre Wawawai County Park sits in the Snake River Canyon approximately three miles upstream from Lower Granite Dam within Reach 3. The Park provides wonderful restoration potential for providing opportunities for public involvement and education. The reach includes the shorelines along Wawawai Bay, which are generally well vegetated, however the shorelines immediately adjacent to the Snake River main channel are not. This includes fill and rip-rap for a railroad berm in the Snake River and roadway berm for SR 193; aquatic functions could be improved in these areas by working with the railroad to add scrub-shrub riparian vegetation to the base of the berm and with WSDOT to augment native plantings on the SR 193 berm.



Cottonwood Creek Wetlands

An extensive area mapped as potentially associated wetland (PAW) is included in shoreline jurisdiction, identified as Cottonwood Creek Reach 2. Most of the PAW is in agricultural use and some is developed. Opportunity exists to protect the existing wetland function and restore those areas impacted from agriculture. Cities and Towns

5.4.2 Albion

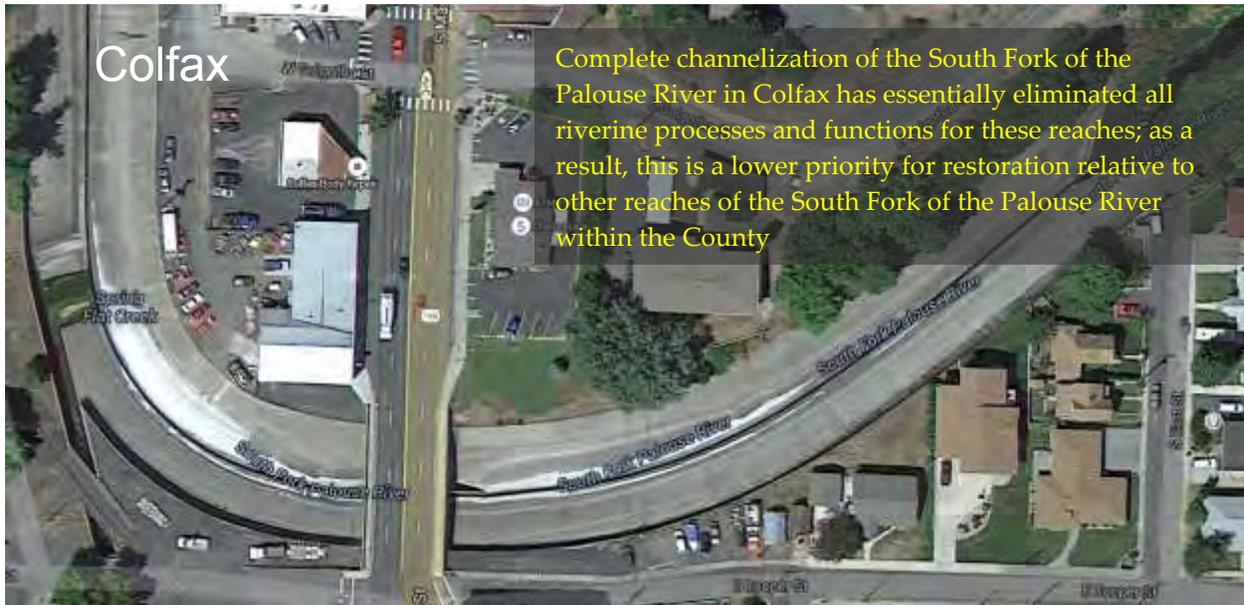
The South Fork of the Palouse River runs along the south edge of the City of Albion and is not significantly degraded by the urban development of Albion. The river's floodplain through these reaches appears to be in connection with the river and hard structures in the floodplain, such as buildings and pavement, are limited to one road crossing (South D Street) and adjacent roads such as East Front Street, Albion Parvin Road, and East Front Street. Riparian vegetation is mostly lacking, except for a narrow band of willows and other shrubs and small trees. As such, the City has an opportunity to protect these reaches through conservation easements and a program to restore riparian vegetation and attendant floodplain functions.



5.4.3 Colfax

In Colfax, Reaches 6, 7 and 8 of the South Fork Palouse River spanning from West Railroad Avenue to just after the river turns east, are entirely contained in a flume. Restoring the natural channel and riparian corridor through the City would yield great ecological benefit, including restoration of stream processes and subsequent improvement in stream biological functions. This restoration action has a low priority given the cost and effort relative to other restoration priorities (see Figure 3), and the

value of the flume for providing flood protection. Outside of the flume, Reaches 5, 9, 3, and 1 are also degraded. Restoration opportunities exist to reduce or replace shoreline armoring using bioengineering techniques, increase native riparian vegetation cover, and include educational materials such as interpretive nature and/or historical signs, as well as enhancing and maintaining the areas mapped as associated wetland. The city parks located in Reaches 3 and 5 provide good opportunities for such improvements.



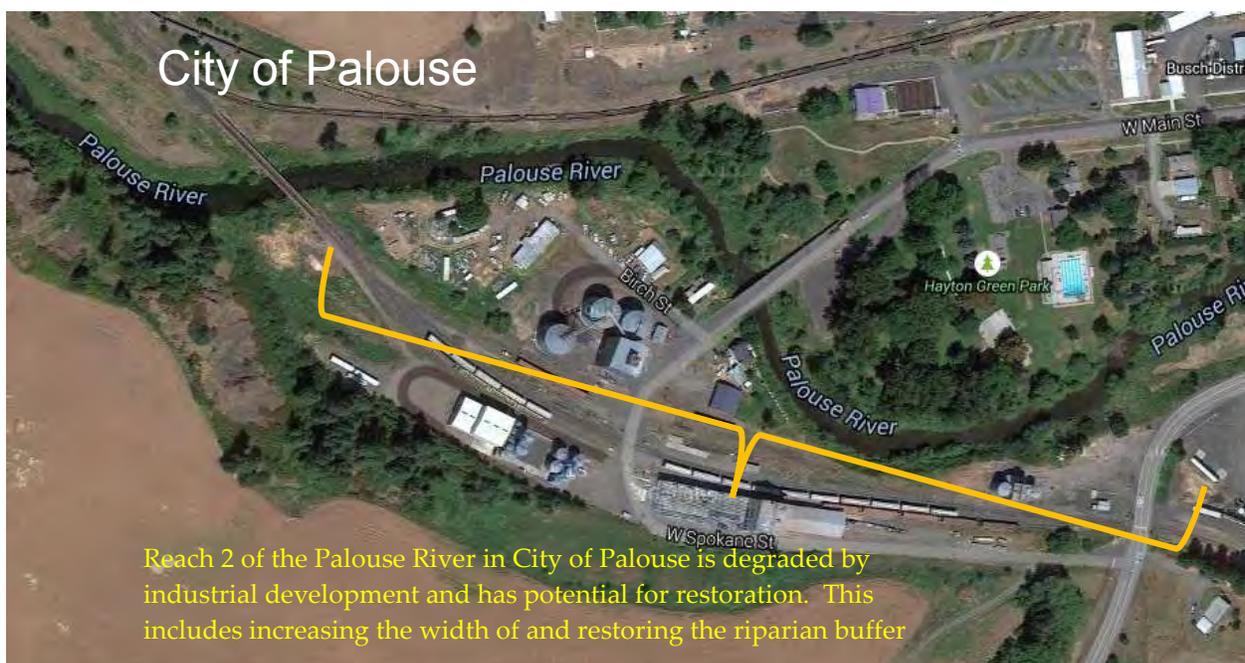
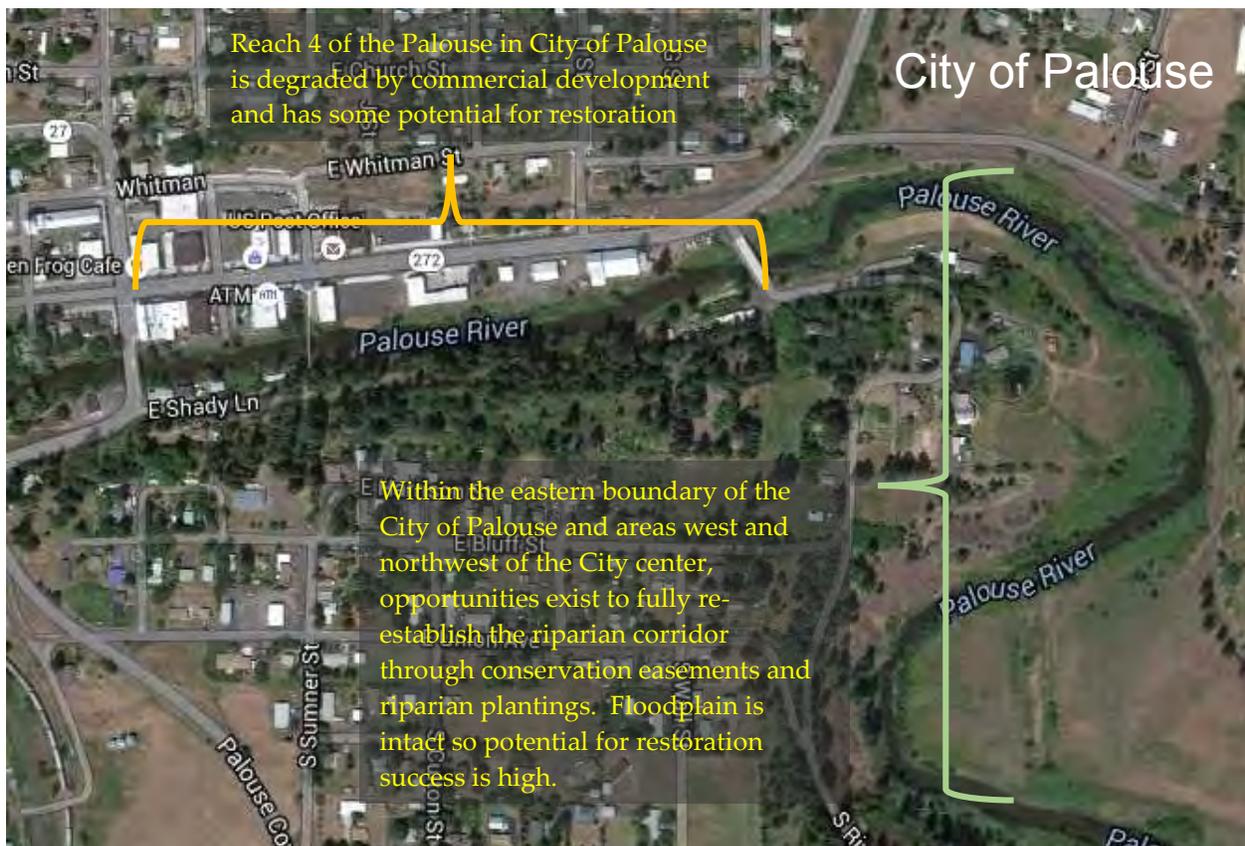
5.4.4 Malden

The John Wayne Pioneer Trail runs through the Pine Creek shoreline in Malden, offering great restoration potential, and providing opportunities for public involvement and education. The creek's floodplain through the Town appears to be connected with the creek, and hard structures in the floodplain, such as buildings and pavement, are limited. Riparian vegetation is mostly lacking, except for a narrow band of shrubs and some scattered pines. Much of the shoreline area on the north bank is already protected under a conservation easement.

5.4.5 Palouse

In the City of Palouse, Reach 2, which encompasses industrial development in the southwest portion of the City, and Reach 4, which encompasses the commercial development primarily on the north side of the Palouse River, south of Main street between Highway 27 and South River Road, are the most modified of the City reaches and have the most potential for restoration. Restoration opportunities include increasing the width and density of native riparian vegetation where feasible, including

educational materials such as interpretive nature and/or historical signs at public access or view points, and enhancing the areas mapped as associated wetland.



5.4.6 **Pullman**

The Commercial/Business District reach (Reach 2) of the South Fork Palouse River, running through downtown Pullman from approximately NW State Street to NE Spring Street, was identified as the most degraded reach in the City. Vegetation in the reach is mostly weedy herbaceous species, with a few shrubs and fewer trees. The Downtown Pullman River Walk (portion of the Bill Chipman Trail) runs through this reach and opportunities exist for public involvement and education. While the hydrologic and habitat functional potential of this reach is limited as the channel is confined between vertical concrete walls in sections, and is in close proximity to busy downtown development, there is potential for including vegetation function and visual appeal through riparian plantings.

The Palouse Conservation District and PCEI have done several volunteer restoration projects in the City of Pullman. In addition to annual stream cleanups, PCEI recently completed a planting project along a long stretch of the South Fork adjacent to the City Playfields in Reach 3. Maintenance of past restoration projects is important to ensure their continued success.

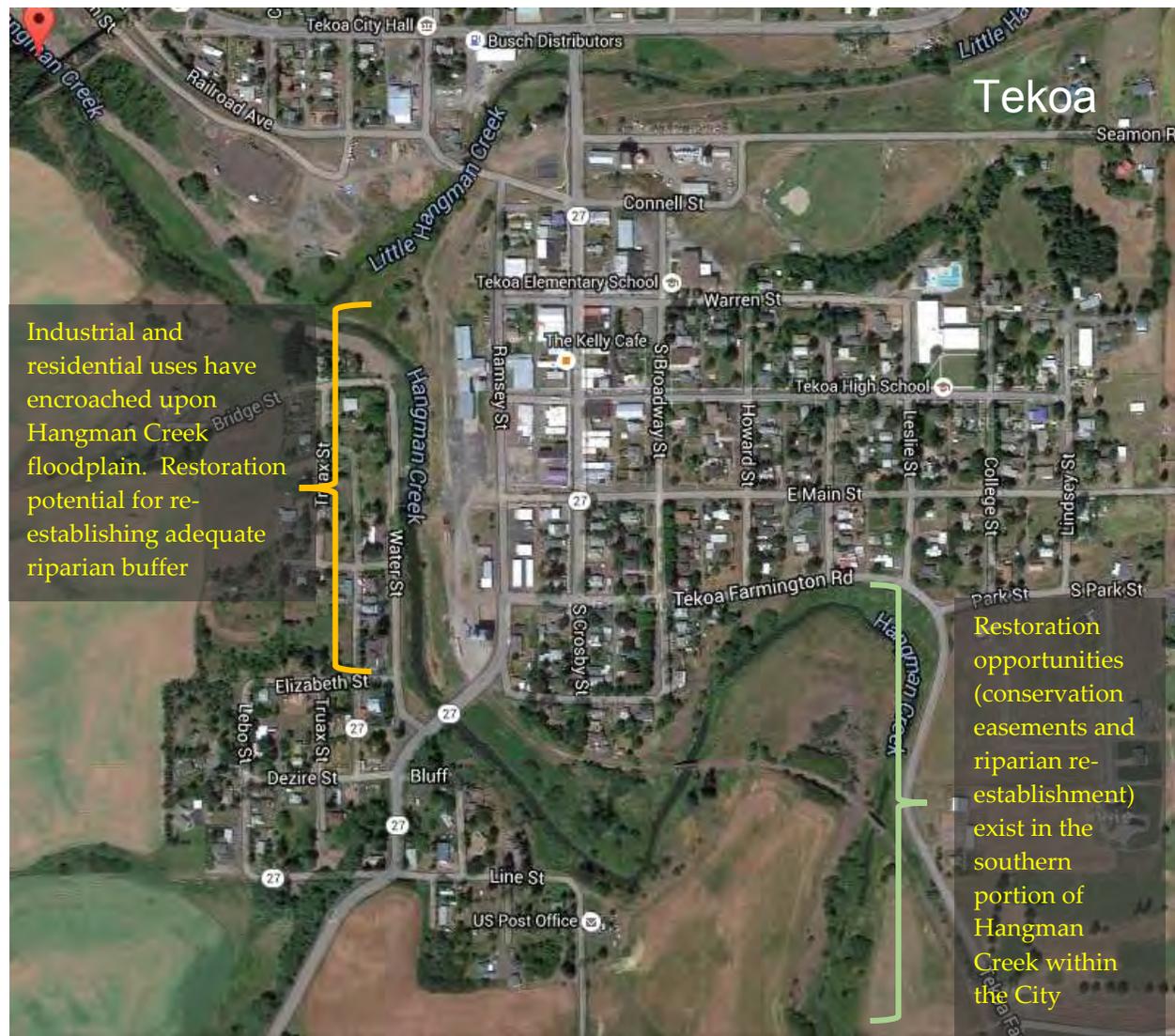
Opportunities also exist to partner with local Washington State University students and groups on enhancement projects in the City.

5.4.7 **Rosalia**

The Rosalia City Park in Reach 4 provides a good opportunity for restoration of the Pine Creek shoreline in the Town. Few shrubs and trees are present in this reach and there is little riparian vegetation separating the channel from surrounding uses. Extensive floodplain and floodway is present in this area. Restoration opportunities include protecting connectivity to the floodway, increasing in-stream habitat features, and planting riparian vegetation. There is also the opportunity for public involvement and education through the use of interpretive signs.

5.4.8 **Tekoa**

Hangman Creek runs through the west and southern portions of the City of Tekoa. The creek's floodplain is moderately degraded with light industrial and residential encroachment on the west side of the City. Reaches on the south end of the City are less degraded, but require restoration of the riparian corridor.



6 STRATEGIES TO ACHIEVE LOCAL RESTORATION GOALS

This section discusses strategies that Whitman County and the Cities can use to foster shoreline restoration and achieve an immediate trend towards and over time a net improvement in shoreline ecological processes, functions, and habitats. The County and Cities are constrained in their ability to implement restoration projects or programs on their own by projected budget and staff limitations. However, the SMPs represent an important vehicle for facilitating and guiding restoration projects and programs that can be implemented through partnerships with private and/or non-profit entities. These partnerships can be considered an important part of the overall strategy to achieve

implementation since they offer incentive-based solutions to landowners, as well as funding for their implementation. These partnerships allow local governments to provide direction and leadership to assure that restoration designs meet the identified goals of the various plans. Critical to the success of these partnerships is a mechanism to coordinate a watershed-wide approach to achieving a net gain in watershed health.

Presented below is a suite of restoration strategies and tools that the County or Cities may potentially implement as part of the proposed SMPs, as well as assist restoration activities managed by other governmental and non-governmental organizations.

6.1 Partnerships and Tools for Implementing Restoration

Restoration and protection goals have the greatest potential for being met when stakeholders clearly understand what opportunities are available, how they work, and how they will benefit them directly. If the opportunities provide both environmental and fiscal benefits to a landowner, then the measure providing the benefits becomes an “incentive.” Provided below is a description of the leading incentive opportunities and funding that are available or can be developed through partnerships in Whitman County.

6.1.1 Conservation Reserve and Conservation Reserve Enhancement Program (CRP & CREP)

This voluntary federal program is administered by the USDA Farm Service Agency and is the county’s largest private-land conservation program. Participating landowners, are paid an annual rental rate for a contract period of 10 to 15 years in exchange for both removing environmentally sensitive land from agricultural production and implementing conservation practices (CREP only). While the CRP just targets specific types of habitat, the CREP program is designed to address high-priority conservation issues as set forth in a signed agreement between state of Washington and the Federal government.

Examples of Programs: <http://www.whatcomcd.org/crep-wildlife>
<http://www.whatcomcd.org/one-millionth-crep-tree-planting>

Effectiveness. In Whitman County, vegetative buffer strips installed under this program have helped reduce erosion on over 4,000 acres of steep, erosive farmland. One farmer, Clark Miller, has planted 234,000 trees and shrubs and installed water improvements as part of the program. The new habitat has brought in hawks, eagles, and coyotes which in turn has helped reduce an increasing mice population.

6.1.2 **Regional Conservation Partnership Program (NRCS)**

Using “partnership agreements,” the Natural Resources Conservation Service works with local partners such as Conservation Districts to assist rural landowners implement practices that protect and restore natural resources, including soil, water and habitat. The “agreements” outline the specific practices and activities to be undertaken within a defined geographic area and also include funding for implementation.

For Whitman County, the NRCS has formed a partnership with the Palouse Conservation District and other partners in order to address TMDL issues in the Palouse River watershed (WRIA 34), which include erosion and sediment problems. A program to monitor water quality is underway to understand the specific sources and processes contributing to these problems and to develop effective solutions to address them. This includes promotion of the Farmed SMART Certification program, establishment of environmental markets, riparian buffer establishment, and monitoring of the effectiveness of implemented solutions. The NRCS also provides for the funding of conservation easements under the Agricultural Conservation Enhancement Program (ACEP).

Examples of Partnership Programs:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmland/rcpp/>

6.1.3 **Farm Conservation Plans**

Conservation Districts throughout the state of Washington assist farmers and rural landowners increase farm productivity and reduce impacts to the environment through the preparation of farm plans. These plans typically employ the use of state of the art “Best Management Practices” which have been applied and tested by farmers elsewhere with similar crops and environmental conditions.

The critical areas identified under the CAO and restoration areas identified by the SMP can be used by farmers and the Conservation District to develop farm plans that effectively protect critical areas and improve farm operations. For example, Whatcom County developed a Conservation Plan for Agricultural Lands (CPAL) as part of their comprehensive plan that assists the Conservation District in formulating farm plans. The Whitman Conservation District employs a “cost sharing” mechanism to encourage farmers to employ BMPs. These practices, in turn, are being developed under the NRCS Regional Conservation Partnerships.

Examples: <http://www.whatcomcd.org/small-farm>

6.1.4 **Public Benefit Rating System (PBRs) and Current Use Taxation**

This measure allows a landowner to reduce the taxes on a property based on current land use value rather than on “highest and best use.” For example, if there are areas of former wetland or riparian habitat, a rural landowner could propose to protect these areas and thereby reduce their value relative to other areas on their land that may be used for farming. This would reduce the overall property taxes for the landowner.

The program, which is not currently offered in Whitman County, can be implemented by the County under RCW 84.33 and 84.34 and requires the identification of those land use types (i.e. habitat, wetlands, riparian corridors) that would qualify for tax reductions. Under the PBRs, a point system is developed for the public benefit provided, which allows a tax reduction up to 90%. Once a landowner enrolls in the program, they receive the tax benefits on a yearly basis; the landowner can elect to withdraw from the program at any time, but must repay the tax benefits received under the program. The program has been successful elsewhere in Washington, including Island, Snohomish and King Counties.

Examples of Programs:

<http://www.kingcounty.gov/environment/stewardship/sustainable-building/resource-protection-incentives.aspx>

Examples of Application Forms:

http://www.islandcounty.net/planning/documents/PBRsAPPLICATION3-12_001.pdf

Estimate of Degree of Success: Over the past 15 years, King County reports enrolling about 60-80 landowners and 500-600 acres per year.

6.1.5 **Conservation Easement**

A conservation easement is a useful tool for clearly identifying the exact location of a valuable natural resource that a landowner has agreed to set aside for long-term protection. Typically, these easements are used in conjunction with programs that provide a benefit to the landowner, such as reduced taxes through the Public Benefit Rating System. Additionally, landowners can elect to donate lands with a conservation easement to a non-profit organization, such as a land trust, which also provides for tax benefits to the landowner.

The advantage of a conservation easement is that it specifically lists the type of activities allowable on the easement, including activities important to an agricultural operation

(i.e. maintenance of access roads, wells, ditches) as well as restoration activities, such as the replanting of riparian vegetation or other suitable cover. This allows for the long-term protection and restoration of biologically important areas in a manner that is compatible with the landowner's needs. Restoration and the monitoring of restoration activities is typically borne by the holder of the easement (i.e. land trust, fish and wildlife conservation organization).

6.1.6 **Riparian Easements - DNR**

The Washington Department of Resources owns and manages numerous agricultural properties throughout Whitman County (see: <https://www.arcgis.com/home/webmap/viewer.html?webmap=f96e475a649a4ef1a8b45f74f9476adf&extent=-127.4292,43.8952,-112.8723,50.3921>).

DNR works with lessees to assure that appropriate investments are made in the lands to keep them ecologically sustainable and productive while protecting public resources such as water, fish and wildlife. The legislature provides funding for the Department of Natural Resources to pay a landowner for easements that protect riparian corridors (RCW 76.13.120).

6.1.7 **Outright Purchase**

In circumstances where a landowner has no interest in a property which provides valuable watershed functions, and is otherwise in threat of conversion, then purchase of a property "in fee" may be considered if no other options are available. Acquisition must be made by an entity that is capable of protecting, managing and monitoring the natural resources onsite over the long term.

While this is one of the most expensive tools to protect natural resources, it is one of the most effective ways to permanently protect these resources. Use of this tool can raise issues such as cost and value to the public, as well as the loss of existing farm or range land.

Table 3 outlines potential funding sources for implementation of a variety of efforts that could improve shoreline ecological function.

Table 3. A partial list of potential public and private funding sources for restoration and protection of shoreline ecological functions available to agencies or organizations

Agency/Group	Grant Name	Description
<i>Public Funding Sources:</i>		
Washington Department of Fish and Wildlife	Aquatic Lands Enhancement Account (ALEA) Volunteer Cooperative Grant Program http://wdfw.wa.gov/grants/alea/index.html	Funding to buy, protect, and restore aquatic lands habitat and to provide public access to the shoreline. Eligible applicants include individual citizens, non-profit organizations, schools, political subdivisions such as conservation districts and tribes. For-profit businesses, State, and federal agencies may not apply.
Washington Department of Ecology	Watershed Planning Implementation and Flow Achievement Grants http://www.ecy.wa.gov/programs/wr/funding/flow-achievement.html	Funding to implement watershed plans, with focus on achieving “flow achievement” by: increasing flows below project site; improving instream and riparian zone conditions; reorganizing or concentrating existing points of diversion; establishing water banks, exchanges or trust water opportunities; water savings through improved infrastructure for public and agricultural water systems; installing water use monitoring devices (meters, stream gages, groundwater monitors) that encourage wise water use.
	Centennial Clean Water Fund http://www.ecy.wa.gov/programs/wq/funding/FundingPrograms/Centennial/Cent.html	Funds water quality infrastructure and projects to control non-point source pollution.
	Section 319 http://www.ecy.wa.gov/programs/wq/funding/opportunities/319.html	Funds non-point source pollution control projects. Applications accepted annually in the fall for projects such as agricultural BMPs, education and stewardship, water quality monitoring, riparian and wetlands habitat restoration and enhancement, stream restoration, TMDL plan development and implementation and wellhead protection. Requires 25% match. Grant limits of \$250,000 with any combination match option or \$500,000 with cash only match option.
	Clean Water State Revolving Fund http://water.epa.gov/grants_funding/cwsrf/cwsrf_index.cfm	Provides low interest and forgivable principal loan funding for wastewater treatment construction projects, eligible nonpoint source pollution control projects, and eligible Green projects. Available to municipalities and private landowners.
	Floodplains by Design http://www.ecy.wa.gov/programs/sea/floods/	Funding for projects that restore floodplain habitat and reduce flooding risks.

Agency/Group	Grant Name	Description
	Coastal Protection Fund / Terry Husseman Grants http://www.ecy.wa.gov/progr/ams/sea/grants/cpf/moreinfo.html	Funding to restore or enhance environmental, recreational, archaeological, or aesthetic resources; investigate the long-term effects of oil spills; and develop and implement aquatic land geographic information systems. \$50,000 grant limit. No match required. Counties, municipalities and other state recognized local governments are eligible to apply.
Washington Recreation and Conservation Office	Aquatic Lands Enhancement Account http://www.rco.wa.gov/grants/alea.shtml	Funds the acquisition, improvement, or protection of aquatic lands for public purposes. Eligible applicants include local and State agencies and Tribes.
	Salmon Recovery Funding Board Grants http://www.rco.wa.gov/grants/salmon.shtml	Funds projects to protect or restore salmon habitat and assist in related activities.
	Washington Wildlife Recreation Program http://www.rco.wa.gov/grants/wwrp.shtml	Funds a range of land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland preservation, and construction of outdoor recreation facilities. Eligible applicants include local agencies, special purpose districts, state agencies, Native American tribes, salmon recovery lead entities and nonprofits. Most required to provide a 50% match and at least 10 percent of the total project cost must be from a non-state, non-federal contribution. State agencies do not have to provide match.
	Land and Water Conservation Fund (LWCF) http://www.rco.wa.gov/grants/lwcf.shtml	Funding to State and local governments to preserve and develop outdoor recreation resources, including parks, trails, and wildlife lands. 50% match required.
U.S. Fish and Wildlife Service	Fisheries Restoration and Irrigation Mitigation Program http://www.fws.gov/pacific/Fisheries/FRIMA/applications.html	Funds State, local, and tribal governments, as well as individual water diversion operators to install fish screens and fish passage improvements associated with water diversions. At least one of the project applicants must be a local government. Applicant(s) must provide at least 35 percent matching funds or in-kind contributions.

Agency/Group	Grant Name	Description
	Cooperative Endangered Species Conservation Fund (Section 6 of the Endangered Species Act) http://www.fws.gov/endangered/grants/	Grants to States to participate in a wide array of voluntary conservation projects for candidate, proposed, and listed species. Participation is only available to State agencies that have a current cooperative agreement with the Secretary of the Interior. However, individuals or groups (for example land conservancies, cities, counties, community organizations, or conservation organizations) may work with a State as a subgrantee. A proposal must include a minimum 25 percent non-Federal cost share as cash or in-kind contributions.
Washington Department of Ecology	Clean Water State Revolving Fund http://water.epa.gov/grants_funding/cwsrf/cwsrf_index.cfm	Provides low interest and forgivable principal loan funding for wastewater treatment construction projects, eligible nonpoint source pollution control projects, and eligible Green projects. Available to municipalities and private landowners
Washington Department of Natural Resources	Funding provided by DNR to agricultural leasees on DNR land.	Under RCW 76.13.120 the legislature provides funding for the Department of Natural Resources to pay a landowner for easements on DNR leased lands that protect riparian corridors.
Whitman County Farm Service Agency	Conservation Reserve Enhancement Program (CREP)	This program provides funds to farmers who maintain riparian buffers for on-site waterbodies. The funds cover technical assistance, plant costs, and land "rental" fees.
U.S. Fish and Wildlife Service	Partners for Fish and Wildlife http://www.fws.gov/partners/faq.html	Provides technical and financial assistance to private landowners to improve their property for targeted fish and wildlife species without a long-term easement contract.
U.S. Department of Agriculture Natural Resources Conservation Service	Agricultural Conservation Easement Program (ACEP) http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/acep/?cid=stelpbdb1242695	Provides financial and technical assistance to help tribes, state and local governments, non-governmental organizations and private landowners conserve agricultural lands and wetlands and their related benefits.
U.S. Department of Agriculture Natural Resources Conservation Service	Regional Conservation Partnership Program (RCPP) http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmbill/rcpp/	Using "partnership agreements" the Natural Resources Conservation District assists rural landowners implement practices that protect and restore natural resources, including soil, water and habitat in selected areas.
Palouse-Rock Lake Conservation District	Conservation Reserve Enhancement Program (CREP) http://www.prlcd.org/crep.html	Provides funds to farmers who maintain riparian buffers on certain identified waterbodies in the Palouse watershed. The funds cover technical assistance, plant costs, and land "rental" fees. Serves the northwest quadrant of Whitman County.

Agency/Group	Grant Name	Description
Palouse Conservation District	http://www.palousecd.org/	Provides technical, financial and educational resources to farmers in the southeast area of Whitman County to help achieve conservation objectives.
Whitman Conservation District	http://www.whitmancd.org/	Provides technical, financial and educational resources and focuses or coordinates them so they meet the needs of the local land user for conservation of soil, water and related resources in the southwest portion of Whitman County.
Pine Creek Conservation District	http://www.pinecreekcd.com/	Provides technical, financial and educational resources to farmers in the northeast quadrant of Whitman County including the Towns of Malden and Rosalia and the City of Tekoa.
<i>Private Funding Sources:</i>		
National Fish and Wildlife Foundation	Columbia Basin Water Transactions Program http://www.cbwtp.org/jsp/cbwtp/program.jsp	Funds permanent acquisitions, leases, investments in efficiency and other incentive-based approaches to assist landowners who wish to restore instream flows for habitat. Established program partners called Qualified Local Entities (QLEs) are eligible to submit a proposal for funding. Private landowners interested in funding can work with QLEs on project proposals.
The Northwest Fund for the Environment	Northwest Fund for the Environment Standard Grants http://www.nwfund.org/application/	Provides grants to 501(c)(3) nonprofit organizations ranging from \$3,000 – \$20,000 for projects to protect and restore aquatic ecosystems.
The Burning Foundation	http://fdnweb.org/burning/application-guidelines/	Provides grants to 501(c)(3) groups to protect threatened rivers and forests, nurture native fish populations, and conserve land and open space for ecological and recreational purposes. Average grant sizes range from \$5,000 to \$12,000
FishAmerica Foundation	http://www.fishamerica.org/grants/	A national group that provides grants, in partnership with the NOAA Restoration Center and U.S. Fish and Wildlife Service, for community-based restoration of marine and anadromous fish species including restoration and enhancement of aquatic habitats such as stream buffer zones.

6.2 Planning

The County, Cities and Town could incorporate shoreline restoration goals and projects into their capital improvement plans, parks facility plans, and road plans to facilitate implementation of restoration within their respective jurisdictions and cooperatively

with each other. They could also review the various elements of previously adopted and proposed plans that apply to shoreline areas and develop a prioritized list of projects.

6.3 Regional Coordination

Many partners are actively engaged in the restoration and protection of shoreline ecological functions in Whitman County. Budget and staff limitations limit the County's and Cities'/Towns' abilities to independently implement a comprehensive restoration program; however, coordination with the multiple active and interested parties in the County make the implementation of ecological restoration feasible. Projects can be implemented through partnerships with other agencies, non-governmental organizations, or private entities such as those identified in Section 4. Section 6.1 also recommends the establishment of a shoreline restoration committee that would help coordinate and track restoration activities.

The County should continue its association and involvement with the local watershed planning units for WRIAs 34, 35 and 56, as well as the Snake River Salmon Recovery Board.

The Cities of Colfax, Pullman and Palouse and the Towns of Albion, Rosalia and Malden should continue their association and involvement with local watershed planning for WRIA 34. The City of Tekoa should continue its association and involvement with the WRIA 56 Planning Unit.

The Counties and Cities/Towns may also look for other time-sensitive opportunities for involvement in regional restoration planning and implementation.

Based on the inventory completed as part of the Shoreline Analysis Report, approximately 83 percent of the area in shoreline jurisdiction in Whitman County is privately owned. Additionally, land use activities on privately owned lands outside of shoreline jurisdiction are known to play a significant role in hydrologic, water quality, and geomorphic functions and processes of a watershed. As a result, private landowners play an extremely important role in the condition of shoreline ecological functions. Outreach and education measures that help inform and engage the public to make voluntary actions that limit degradation and/or improve shoreline functions are essential to effectively maintain and restore conditions in the watershed. Several agencies and non-governmental organizations are actively involved in public outreach and education measures in the county and cities. In the future, development of a coordinated natural resource education center or program could be considered.

7 CONCLUSION

The Whitman County Shoreline Restoration Plan builds on the goals and policies proposed in the Shoreline Master Program. The Shoreline Restoration Plan provides an important non-regulatory component of the SMP to ensure that shoreline functions are maintained or improved despite potential incremental losses that may occur even with implementation of SMP regulations and mitigation actions.

The Shoreline Restoration Plan draws on multiple past planning efforts to identify possible restoration projects and reach-based priorities, key partners in implementing shoreline restoration, and existing funding opportunities. Many of the projects and strategies identified are focused on implementing best management practices for agricultural uses to improve water quality and restoring riparian buffer zones. The Shoreline Restoration Plan represents a long-term vision for restoration that will be implemented over time, resulting in ongoing improvement to the functions and processes in the County's shorelines.

8 WEBSITE RESOURCES

The following is a sampling of helpful web resources.

- Conservation Districts
 - Palouse Conservation District: <http://www.palousecd.org/default.htm>
 - Palouse Rock Lake Conservation District: <http://www.prlcd.org/>
 - Whitman Conservation District: <http://www.whitmandc.org/>
 - Pine Creek Conservation District: <http://www.pinecreekcd.com/>
- Washington State Conservation Commission CREP Program: <http://scc.wa.gov/crep/>
- Palouse-Clearwater Environmental Institute: <http://www.pcei.org/>
- Natural Resources Conservation Service Agricultural Conservation Easement Program (ACEP): <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/acep/?cid=stelprdb1242695>
- Native plant landscaping guides: http://www.nwcb.wa.gov/publications/Eastern_Garden_Wise.pdf and <http://www.palouseprairie.org/pplandscaping.html>

- Backyard wildlife sanctuary certification: <http://wdfw.wa.gov/living/backyard/>
- Landscape design for wildlife:
<http://wdfw.wa.gov/living/landscaping/index.html>
- Guide to noxious weeds – identification and removal:
<http://www.nwcb.wa.gov/publications/EasternFieldGuide2009.pdf>

9 REFERENCES

- City of Colfax. 2007. Colfax, Washington Comprehensive Plan – The Future of Colfax. January 2007.
- City of Palouse. 1997. City of Palouse Comprehensive Plan
- City of Palouse. 2014. City of Palouse Comprehensive Plan. 2014 Revision.
- City of Pullman. 2014. Parks & Recreation 2014-2018 Five Year Plan.
- City of Pullman. 1999. Comprehensive Plan for the City of Pullman.
- Golder Associates, Inc, and D. E. 2009. WRIA 34 Palouse Watershed Detailed Implementation Plan.
http://www.palousecd.org/Content/Assets/WRIA34/DIP/WRIA34_DIP_TEXT_022009.pdf. Accessed April 24, 2014.
- HDR and EES. 2007. Palouse Watershed Plan.
- Higgins, J. L. 2003. Determination of upstream boundary points on southeastern Washington streams and rivers under the requirement of the Shoreline Management Act of 1971. U.S. Geological Survey Water-Resources Investigations Report 03-4042:18.
- Kuttel, M. 2002. Salmonid Habitat Limiting Factors Water Resource Inventory Areas 33 (Lower) and 35 (Middle) Snake Watersheds, and Lower Six Miles of the Palouse. Washington State Conservation Commission.
- Palouse-Clearwater Institute. 2014. Palouse-Clearwater Institute. <http://www.pcei.org/>.
- Port of Whitman County. 2010. Comprehensive Plan 2010-2015. Colfax, WA.
- Resource Planning Unlimited, Inc. 2002a. North Fork Palouse River Watershed Characterization (January).
- Resource Planning Unlimited, Inc. 2002b. North Fork Palouse River Water Quality Improvement Plan (September).
- Snake River Salmon Recovery Board. 2011. Snake River Salmon Recovery Plan for Southeast Washington.
- Spokane County Conservation District (SCCD). 2005. The Hangman (Latah) Creek Water Resources Management Plan.

- The Watershed Company and Berk. 2014. Draft Shoreline Analysis Report for Shorelines in Whitman County; the Cities of Colfax, Palouse, Pullman and Tekoa; and the Towns of Albion, Malden and Rosalia.
- Washington State Department of Ecology. 2006. North Fork Palouse River Fecal Coliform Total Maximum Daily Load: Water Quality Implementation Plan. Ecology Publication No. 06-10-028.
- Washington State Department of Ecology. 2007. Palouse River Chlorinated Pesticide and PCB Total Maximum Daily Load: Water Quality Improvement Report and Implementation Plan. Ecology Publication No. 07-03-018.
- Washington State Department of Ecology. 2010. Shoreline Master Program Handbook.
- Washington State Department of Ecology. 2011a. Hangman (Latah) Creek Watershed Fecal Coliform Bacteria, Temperature, and Turbidity Total Maximum Daily Load: Water Quality Implementation Plan. Ecology Publication No. 11-10-012.
- Washington State Department of Ecology. 2011b. South Fork Palouse River Watershed Fecal Coliform Bacteria Total Maximum Daily Load: Water Quality Implementation Plan. Ecology Publication No. 11-10-074.
- Washington State Department of Ecology. 2013. Palouse River Temperature Total Maximum Daily Load: Water Quality Improvement Report and Implementation Plan. Ecology Publication No. 13-10-020.
- Washington State Department of Ecology. 2014. Water Quality Improvement Project Palouse River Mainstem.
http://www.ecy.wa.gov/programs/wq/tmdl/palouse/palouse_mainstem.html.
- Washington State Parks and Recreation Commission. 2000. Iron Horse State Park and the John Wayne Pioneer Trail Management Plan.
- Whitman County. 2004. Whitman County Parks and Recreation Comprehensive Plan.
- Whitman County. 2010. Whitman County Comprehensive Plan.

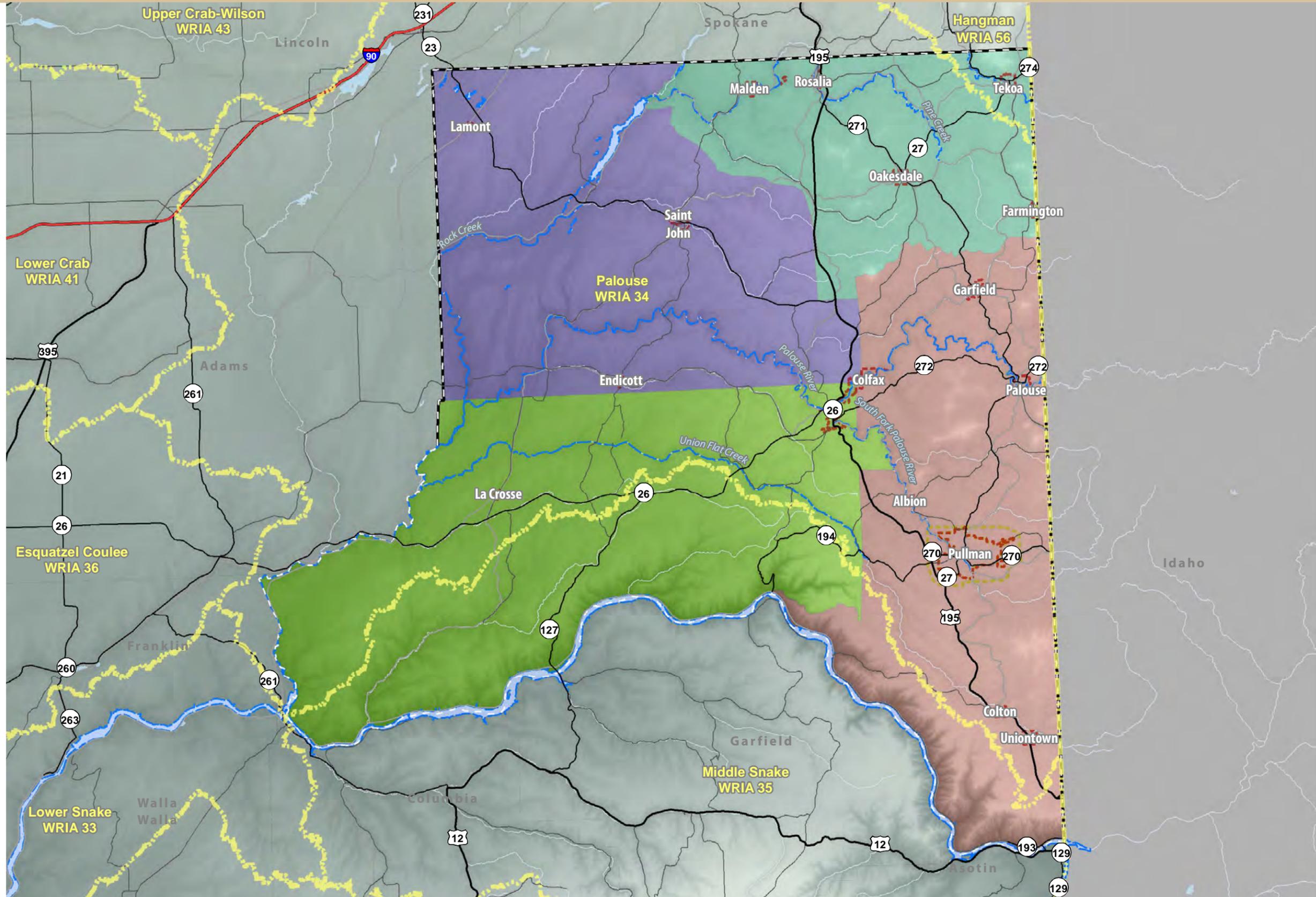
A P P E N D I X A

MAP OF WATER RESOURCE INVENTORY AREAS AND CONSERVATION DISTRICTS

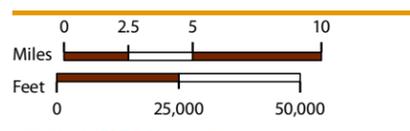
Water Resource Inventory Areas (WRIA) & Conservation Districts



WRIA Boundary^{ECY}
 Conservation District^{TWC}
 Whitman
 Palouse-Rock Lake
 Palouse
 Pine Creek
 SMP Stream^{TWC}
 SMP Waterbody^{TWC}
 City or Town Limit^{TWC}
 Urban Growth Area (UGA)^{TWC}



Notes:
¹ Conservation District boundaries are approximate.




Original scale = 1:450,000 @ 11" x 17" layout. Please scale.

All features depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/ verify information shown on this map.

Data Sources (not listed above): Roadways and rail from DOT. Aerial imagery from 2013 USDA NAIP. Source abbreviations are described on the map folio cover sheet.