

FINAL

March 2015

# SHORELINE RESTORATION PLAN

## FOR SHORELINES IN ADAMS COUNTY

Prepared for:

Adams County  
425 E Main, Suite 200  
Othello, WA 99344





**ADAMS COUNTY  
GRANT No. G1400541**

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# SHORELINE RESTORATION PLAN

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## ADAMS COUNTY

# 1 INTRODUCTION

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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 affect private 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 Adams County 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 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).

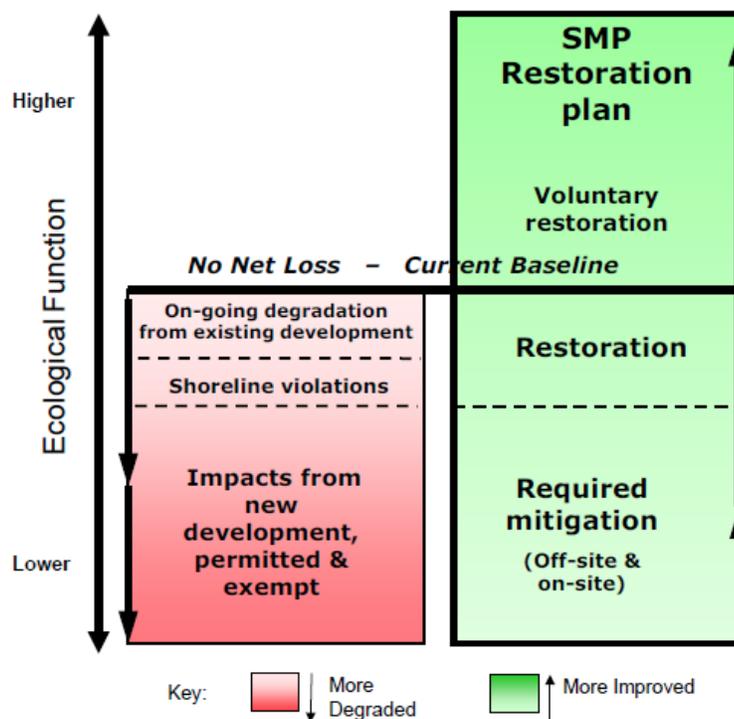


Figure 1. Diagram of the role of restoration relative to achieving the SMP standard of “No net loss” of ecological functions. (Ecology 2010)

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."

## 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 Guidelines<sup>1</sup> 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;
- (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 and other organizations' applications for grant funding, and to identify the

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<sup>1</sup> 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.

various entities and their roles working within the County 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.

<b>Restoration</b>	<b>Mitigation</b>
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 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, and identify the County's partners in restoration and 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 Adams County's 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, 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 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

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Adams County adopted its existing SMP in 1977, and it has not been updated since that time. As an element of its current SMP update process, the County recently completed a comprehensive inventory and analysis of its shorelines. The results are documented in the *Shoreline Analysis Report for Shorelines in Adams County* (The Watershed Company 2014) (herein referred to as "Analysis Report"). The purpose of the shoreline inventory and analysis was to gain a greater understanding of the existing condition of the County's shoreline environment to ensure the updated SMP policies and regulations will protect local ecological processes and functions. Shoreline uses, developments, and activities are also subject to the County's Comprehensive Plan, County Code, and various other provisions of County, State and Federal laws, as well as other codes and policies.

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. In order to assess shoreline functions at a local scale, each shoreline waterbody's jurisdictional area was broken into discrete reaches. Ecosystem wide discussions are broken into the three major watersheds which contain shorelines in Adams County: WRIA 34-the Palouse, WRIA 41-the Lower Crab, and WRIA 36- Esquatzel Coulee. A mapfolio of the shoreline inventory results is also included as Appendix A of the 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. Overall results of the Analysis Report are summarized

below by waterbody to provide context for this Restoration Plan. For reach level specifics, please refer to the complete Analysis Report.

## **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 shoreline management area includes the shorelines of 21 lakes, Cow Creek, Lower Crab Creek, the Palouse River and Rock Creek. In total, the shoreline inventory mapped 254 miles of river and lake shoreline that meet shoreline jurisdiction criteria. Total jurisdictional shoreland area equals approximately 11 square miles, which includes associated wetlands and portions of associated floodplains.

## **2.2 Existing Conditions Summary**

Adams County is predominantly rural and agricultural in nature outside of the two main cities of Ritzville and Othello. Shoreline jurisdiction is not present within either city. Other incorporated areas include the small towns of Lind, Washtucna and Hatton. Findings of existing shoreline conditions and functions provided in the Analysis Report are briefly summarized below for each shoreline waterbody.

### Palouse River

The Palouse River originates in the Bitterroot Mountains in northern Idaho, and flows westerly into Whitman County before joining the Snake River at the Whitman/Franklin County line. It flows for approximately 20 miles along the southeast Adams County, separating Adams from Whitman County.

The topography of the Palouse watershed (WRIA 34) 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. Most livestock grazing occurs in the westernmost portion of the basin, within the Channeled Scablands.

Water quality concerns in the Palouse River are primarily from non-point sources including erosion, livestock, fertilizers, and septic systems, which contribute sediment, fecal coliforms, and nutrients. Temperature is also a concern.

There are no man-made dams on the Palouse River; however, the 185-foot Palouse Falls, located downstream of Adams County, prevents anadromous salmon passage. Therefore, there are no ESA-listed salmonids or other listed aquatic species in the Adams County reaches of the Palouse River. Upstream of the falls, resident rainbow trout are present in all reaches. Habitat function is lowest in the lower reaches where there are more agricultural and residential uses. Upper reaches have very little human presence. Multiple PHS regions are mapped throughout all reaches. Riparian vegetation and wetland habitat is limited, but upland shrub/scrub and unmodified open space with connectivity to other habitat types is plentiful.

Agricultural modifications are found along much of the Palouse River shoreline, particularly in the lower reaches and low vegetative function is present overall. Upper reaches are less modified, though vegetation is naturally limited by the scabland geology. Riparian shrub vegetation is limited to a thin strip adjacent to the bank in most places. One reach in the upper portion of the river contains braided channels and backwater areas, but overall instream habitat complexity is limited. Very high amounts of floodplain are present in all reaches with good connectivity to the channel. Shoreline

armoring is minimal throughout all reaches. One dock/pier and several bridges alter instream hydrology.

### Cow Creek

Cow Creek is a tributary in the Palouse Watershed (WRIA 34) which flows south from Sprague Lake through the entire length of Adams County to where it enters the Palouse River near the town of Hooper. The Cow Creek system includes a network of disconnected, natural depressions or vernal pools which have intermittent seasonal connections. Small dams have been constructed in places along Cow Creek which backup the flow, helping to create seasonal pooling. There are also a number of water withdrawal structures and irrigation diversions visible on aerial photos. The northern half of the creek includes several shoreline lakes and areas of wetland complex, while the southern end has less diverse characteristics. Local reports indicate that flow decreases downstream, potentially because of the storage by the numerous pothole lakes and artificial impoundments, and that the stream is often dry in the southern end of the County. Many of the lakes in the system are natural depressions with basalt bottoms and no outlets (HDR and EES 2007).

Natural baseflows in Cow Creek are low during summer months, and some areas of Cow Creek can go dry. Surface water claims were adjudicated in 1984 and surface water resources appear to be fully committed between non-agricultural and agricultural withdrawals.

The Cow Creek shorelines are part of the Channeled Scablands and are largely rural and undeveloped. Shrub/scrub vegetation dominates the vegetated areas which are generally limited to a narrow band immediately adjacent to the channel.

Agricultural uses are the main modification to Cow Creek shorelands. High amounts of floodplain are present with generally good connectivity to the channel. Armoring is limited, but some steep slopes and road crossings are present. Flow levels are generally low and shoreline complexity is limited overall. Wetland areas are minimal in most reaches.

Cow Creek is the primary water source for several livestock areas and cattle tend to spend a lot of time in the stream corridor. Trampling and overgrazing have damaged or removed many of the trees and shrubs along the stream banks. The creek fails to meet state water quality standards for temperature, fecal coliform, and dissolved oxygen, and pH. Livestock manure is a likely cause of the low dissolved oxygen and pH violations.

### Rock Creek

Rock Creek is a tributary to the Palouse River in WRIA 34. It flows west into Adams County from Whitman County. It flows briefly south near the center of Adams County's eastern border before heading back east and re-entering Whitman County.

The portion of Rock Creek in Adams County is remote and predominantly unmodified other than one road crossing. No other development is present. In places, the creek flows at the base of some steep, though fairly well vegetated, slopes. Half of the shoreline is mapped as floodplain. There are no ESA-listed salmonids documented in Rock Creek, but rainbow trout and largemouth bass are documented throughout the reach. Vegetation function is generally high in the reach compared to the surrounding basalt landscape with naturally limited vegetation.

### Lower Crab Creek

Lower Crab Creek enters Adams County from Lincoln County to the north. It flows southwest through the southwest corner of the County within the Lower Crab Watershed (WRIA 41). WRIA 41 encompasses a large area east of the Columbia River and stretches across parts of Grant, Adams and Lincoln counties. It includes the portion of Crab Creek between Ephrata and its confluence with the Columbia River and includes numerous, mostly seasonal tributaries. The upland landscape is characterized by gently rolling hills interspersed with channeled scablands.

The majority of Lower Crab Creek within Adams County lies within the Columbia National Wildlife Refuge. A small portion is within WDFW's Seep Lake Wildlife Area. Shorelines outside of the refuges are dominated by agricultural uses. No floodplain is mapped along Lower Crab Creek. Instream complexity varies with highest function in the Seep Lake Wildlife Area where backwater areas and wetlands are present, and lowest function in the agricultural reach. Herbaceous species dominate much of the shoreline and dense vegetation is limited to a thin strip adjacent to the bank in places.

All shorelines lie within a portion of the Columbia Important Bird Area and Moses Lake Potholes Bird Habitat Conservation Area. PHS mule deer habitat and sandhill crane habitat area also mapped. Upland shrub/scrub vegetation and unmodified open space with connectivity to other habitat types is plentiful.

### Lakes

There are 21 shoreline lakes present in Adams County, located within three distinct regions. The majority of the lakes are located in the southwest portion of the County in

the Lower Crab Creek Watershed (WRIA 41). One lake is located in WRIA 36. The rest are located in the Palouse Watershed (WRIA 34), four of which are associated with Cow Creek.

The following sections describes the lakes within each of these regions.

### **Southwest Lakes**

Fourteen lakes are located in the southwest region of the County, near Lower Crab Creek and the Columbia National Wildlife Refuge. This area is part of the Channeled Scablands. Most of the lakes are natural depressions with basalt bottoms and no outlets (HDR and EES 2007).

Royal Lake, South Teal Lake, and Pit Lake all include portions that lie within Grant County. The portions of Royal and Pit Lakes that are within Adams County are entirely within the borders of the Columbia National Wildlife Refuge. Portions of Morgan, Herman, Campbell, Black and Hutchinson Lakes are also within the Refuge.

The level of existing and potential future development surrounding the majority of the lakes in this region is generally low. The lakes' shoreline areas range in size from approximately 28 acres (South Teal Lake) to 177 acres (Para North Lake).

There is documented presence of rainbow trout in Herman, Owl, Para North, South Teal and Thread Lakes and presumed presence in Hutchinson Lake and the National Wildlife Refuge Lakes reach. Smallmouth bass is documented in Herman Lake and Thread Lake, and largemouth bass in Hutchinson, Linda and Morgan Lakes. Finally, there is documented presence of summer steelhead and westslope cutthroat in Hutchinson Lake and presumed presence of the same species in the National Wildlife Refuge Lakes reach.

### **Northeast Lakes**

Four shoreline lakes are present in the northeast corner of the County. These are located in a more remote region of the Channeled Scablands than the southwest lakes, and are largely unmodified and have similar, intact function. Agriculture is not common in this area of the County. Fourth of July Lake extends into Spokane County; all others are entirely within Adams County.

The level of existing and potential future development surrounding the lakes in this region is very low. The lakes' shoreline areas range in size from 66.5 acres (Palm Lake) to 378.2 acres (Green Lake).

A railroad bed runs through a portion of the Pine and Palm Lakes shorelines, but no other significant roads or development are present. Relative to the other two lakes in the region, Fourth of July and Palm Lakes have low amounts of wetland and riparian habitat. Palm Lake has the highest amount of woody scrub/shrub landcover present in its shorelands. A small percentage of Prairies and Steppe PHS habitat is mapped in the Fourth of July Reach. No other PHS habitat is mapped; however, all reaches include Spalding's catchfly habitat and Pines Lake and Fourth of July Lake are included in the Scabland Lakes Bird Habitat Conservation Area.

### **Cow Creek Lakes**

Four lakes intersect Cow Creek as it flows south through the entire length of the eastern half of the County, through the Channeled Scablands. Flow connections between the lakes are intermittent.

All of the shoreline lakes occur in the upper half of the creek. The largest, Sprague Lake, lies at the head of the creek in the northeast corner of the County. A large open space wetland area is present at the mouth of the lake; this wetland area and some adjacent uplands are part of WDFW's Sprague Lake Unit, which is part of the Columbia Basin Wildlife Area. The wetlands in the Unit are protected under the federal Wetlands Reserve Program (WRP). The uplands are protected under a WDFW Conservation Easement with a private property owner ([http://wdfw.wa.gov/lands/wildlife\\_areas/columbia\\_basin/Sprague%20Lake/](http://wdfw.wa.gov/lands/wildlife_areas/columbia_basin/Sprague%20Lake/)). Outside of the open space area, agricultural use is the most common modification to the shoreline. A portion of the northern shoreline is developed with a resort facility. On the south side of the lake is a public access boat launch. Some recreation occurs on the lake, including fishing, but it is not a highly used area. Privately owned Harper Island is present in the middle of the lake.

South of Sprague Lake are Hallin Lake, Cow Lake and Finnell Lake. No development is present along these lake shorelines, though Hallin Lake has a designated public access area.

## **3 RESTORATION GOALS**

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The following subsections discuss restoration goals and objectives previously identified in local planning efforts.

### 3.1 County Wide

#### Comprehensive Plan and Critical Areas Regulations

The County's Comprehensive Plan, amended most recently in 2005, contains the following general goals related to protecting and restoring natural resources:

- *Provide protection measure[s] for our environment.*
- *Promote a safe, clean and beautiful community environment.*
- *Require the use of buffers as one means of preventing land use conflicts.*

Several of the more specific goals provided under the Land Use Element also relate to reducing impacts to the environment, including:

- *Promote industrial development that contributes to economic diversification, growth and stability of the community without degrading its natural systems or residential living environment.*
- *Promote recreation and tourism as viable economic development opportunities that build on the many and varied existing natural resources of the County in a way that prevents degradation of the resource and the quality of life already in place.*

The County has critical areas regulations that are designed to implement the goals, policies, guidelines, and requirements of the County Comprehensive Plan and the Growth Management Act. The Critical Areas and Resource Lands regulations (Adams County Code (ACC) Chapter 18.06) does not specifically include goals; however, the overall purpose of the chapter is "to promote the general health, safety and welfare of county residents by conserving and protecting critical areas." The regulations aim to protect critical areas by regulating development within or adjacent to such areas/lands, while still providing property owners with reasonable economic use of their land.

#### Adams County Parks and Recreation Plan

The Adams County Parks and Recreation Plan, adopted in 2011, includes goals that encourage the protection and maintenance of open space, access to public lands, and development of trail corridors, all of which could be applicable in helping to preserve and protect shoreline areas.

### Adams Conservation District

The Adams Conservation District “promotes the enhancement of the natural environment and provides technical assistance to develop a positive relationship toward achieving that goal.” Their 5-Year Plan (2009-2014) lays out the work plans and priorities to address their stated mission and includes the following natural resource priorities and goals relevant to the County’s shoreline areas:

- *Maintain support for conservation equilibrium between the 4 WRIA areas within this conservation district’s area of responsibilities*
- *AFO/CAFO issues continue to change process for local animal producers and this concept has resulted in numerous BMP’s requiring both technical and financial support*
- *Storm events continue to bring an awareness to the community of how sensitive the environment is to wind and water erosion characteristics requiring the establishment of priority areas in order to accomplish measureable environmental improvements*
- *Cow Creek and Palouse River areas of the conservation district are under EPA 303d consideration and TMDL activities generally attributed to addressing correction action brings a priority emphasis toward addressing this area of concern.*
- *Through GWMA support activities such as Irrigation Water Monitoring, Deep Soil Sampling, Geographical Information Systems and well testing programs the district supports the four county program to identify nitrate in the ground water issues.*

## **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.*

## 4 EXISTING AND ONGOING PLANS AND PROGRAMS

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

### 4.1 Adams County Comprehensive Plan and Code

The County's Comprehensive Plan provides 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:

- *Provide appropriate guidance and protection measures for addressing the needs and concerns associated with the important environmental issues that help define the quality of life in Adams County.*
- *Sprague Lake is a natural location to allow and promote recreational opportunities. Other water bodies, such as Cow Creek and those identified within Adams Shoreline Master Program, also may be suitable for outdoor recreational development.*
- *Adams County should develop a Park and Recreational Plan to be included within the Comprehensive Plan as another element. It should conform to the standards and requirements as specified by the Interagency for Outdoor Recreation in order to be eligible for future park and recreation funds.*

### Adams County Critical Areas Regulations

County regulations applicable to critical areas are detailed in Adams County Code (ACC) Chapter 18.06 (last updated comprehensively in 2008 with a supplement in 2009). These regulations are designed to implement the goals, policies, guidelines, and requirements of the Adams County Comprehensive Plan and the Growth Management Act. The code limits the type and extent of development that can alter critical areas. Streams and rivers are regulated under the fish and wildlife habitat conservation areas provisions of the code, which requires that applicants with projects that may impact such areas take measures to protect the resource. Requirements include developing a plan detailing how adverse impacts will be mitigated and establishment of appropriate and adequate buffer zones (ACC 18.06.570.E). Minimum buffers are not specified. The regulations also include recommendations and standards to protect wetlands. Required buffer widths range from 25 feet to 250 feet based on wetland classification and intensity of proposed land use (ACC 18.06.650.F). 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.

## **4.2 Adams County Parks and Recreation Plan**

The Adams County Parks and Recreation Plan includes several policies related to protection and preservation of shorelines. Particularly relevant policies include the following which are found under the plan's Goal 3: "Encourage or provide for regional Parks and Open Space":

- Policy 1: Seek to acquire or when appropriate encourage private development of shoreline parcels to include public access.
- Policy 5: Encourage trail corridors to also serve wildlife when feasible.
- Policy 6: Encourage the protection open spaces and greenways within Adams County through a variety of non-regulatory means to maintain recreation opportunities, vistas and protected water, mineral, wildlife and plant resources.

The plan also encourages establishing creative partnerships that meet identified regional needs, including collaboration with the cities and community, and expansion of local Park and Recreational Districts.

### **4.3 Washington State Conservation Commission**

The Conservation Commission guides the state's Conservation Districts in their common mission to educate and inform land owners, 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. The Washington State Conservation Commission also produces special studies and reports.

#### Adams Conservation District

The Adams Conservation District is the main conservation district active in Adams County. It meets monthly and provides programs and services to landowners and residents, including natural resource education and technical assistance. The conservation district also conducts water quality sampling on Cow Creek as part of a pollution control program in collaboration with Ecology, Adams County and local landowners (see Section 4.5.3). They have assisted with installation of exclusion fencing and riparian enhancement projects which have had success at improving habitat conditions and water quality.

#### Palouse Conservation District

The Palouse Conservation District is one of four conservation districts based in Whitman County. However, its actions include watershed planning efforts for all of WRIA 34, which includes a portion of Adams County, including the Cow Creek area.

### **4.4 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. Of the four watersheds in Adams County, only the Palouse (34) and the Upper Crab-Wilson (43) watersheds have active planning groups that have produced Watershed Plans. The Upper Crab-Wilson watershed does not contain any shoreline waterbodies. The WRIA 34 planning unit's work is described further below.

### WRIA 34- Palouse

The Palouse Watershed Planning Unit helped develop the *Palouse Watershed Plan* (HDR and EES 2007) for the entire Palouse basin. The plan was completed during WRIA 34's Phase 3 watershed planning effort and 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). 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 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.

## **4.5 Total Maximum Daily Loads (TMDL)**

A Total Maximum Daily Load (TMDL), also known as a water quality improvement plan, is a waterbody-specific management plan developed for degraded waters. It is designed to limit further water quality impairments and to bring the affected waters into compliance with applicable water quality criteria. The Clean Water Act requires that states develop a TMDL for each of the waterbodies on the state's 303(d) list of polluted waters. The final plan must be approved by the EPA.

### Palouse River TMDLs

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).

#### Lower Crab Creek TMDL

Lower Crab Creek has a TMDL under development for dissolved oxygen, fecal coliform, and pH (<http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/tmdl-wria41.html>).

#### Cow Creek 4b Program

Cow Creek is impaired by dissolved oxygen, bacteria, temperature and pH. Communities do not have to wait for a formal TMDL planning process to be initiated by Ecology. Rather, they can take the initiative to create locally controlled programs to clean up polluted waters. A Category 4b water quality listing is assigned for waterbodies with a pollution control program in place that is expected to solve the pollution problems. While pollution control programs are not TMDLs, they must have many of the same features, and there must be some legal or financial guarantee that they will be implemented. Cow Creek has a pollution control program in place that has been accepted by Ecology and the EPA as a qualifying 4b program (Ecology 2008).

The plan consists of Ecology's Livestock and Water Quality Program strategy that is applied in watersheds in which the cause of a water quality impairment is clear. The plan focuses on collaborative restoration of degraded riparian corridors, and eliminating

unlimited animal access to streams. The program began working with landowners in 2003. Plan partners include the County and Adams Conservation District. Many miles of fencing and riparian restoration have already resulted from these efforts. The figure below, from an Ecology flier on the project, depicts project areas (Ecology 2006).

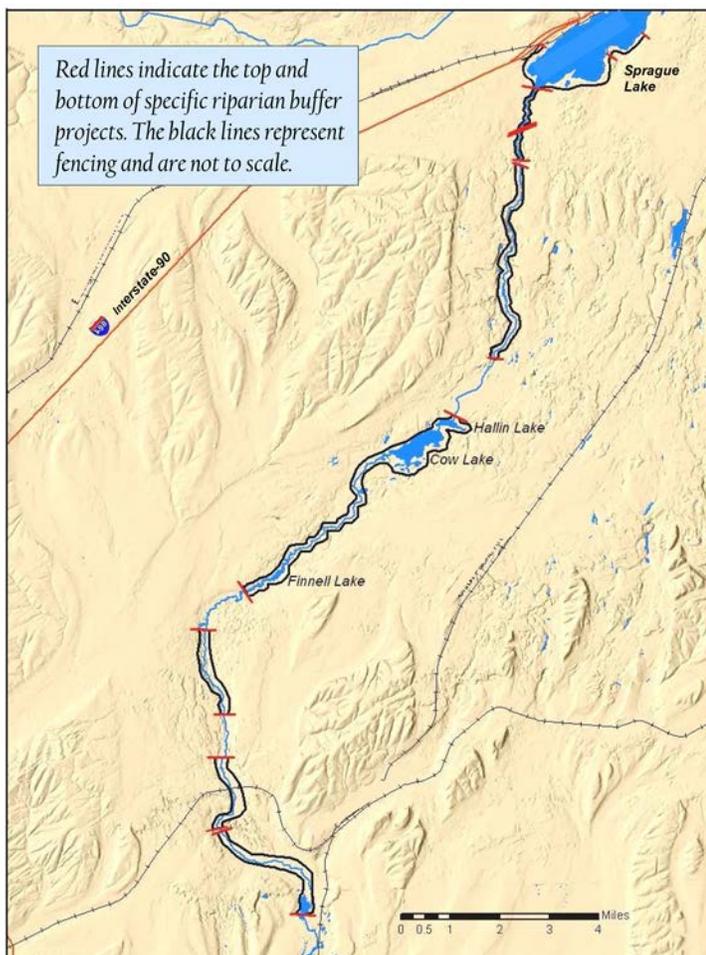


Figure 2. Riparian Buffers Installed on Upper Cow Creek (Ecology, 2006)

#### 4.6 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.

#### **4.7 Natural Resources Conservation Service**

The USDA Natural Resources Conservation Service (NRCS) has a voluntary Wetlands Reserve Program 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 easement’s 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.”

#### **4.8 Other Volunteer Organizations and NGOs**

Several recreational groups and private organizations are active in Adams County. While some of these groups may not have historically worked in the shoreline jurisdiction of Adams 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:

- Trout Unlimited
- Ducks Unlimited
- Adams County Farm Bureau

## **5 IDENTIFICATION OF RESTORATION OPPORTUNITIES**

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Restoration recommendations have been proposed by the County’s restoration partners, described in Section 4, based on watershed and regional restoration planning efforts. Recommendations identified in these planning efforts that are applicable to the County’s shorelines are identified below. The primary issues affecting the region’s streams and lakes that may be addressed with restoration or protection include:

1. Habitat degradation from the alteration of riparian zones through crops and cattle; and
2. Poor water quality, primarily from non-point sources including erosion, livestock, fertilizers, and septic systems.

Note that ground and surface water quantity is another pressing issue in the region, but these problems are addressed through other regulatory processes and planning pathways and therefore are not addressed in this report.

## **5.1 Recommendations from Past Planning Efforts**

Past planning efforts have focused largely on the Palouse River basin and Cow Creek. In the Palouse River basin, 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). In the Cow Creek area, degradation has been mainly caused by livestock and agricultural practices. As the creek is the primary water source, cattle tend to spend a lot of time in the stream corridor. Trampling and overgrazing have damaged or removed many of the trees and shrubs along the stream banks and water quality is impaired by fecal coliform, low dissolved oxygen and pH, as well as temperature. Livestock manure is a likely cause of the low dissolved oxygen and pH violations. Manure uses oxygen and lowers pH during decomposition by instream bacteria. Nutrients in the manure and from fertilizers stimulate excessive plant growth in the creek. This problem is exacerbated by high stream temperatures and an overabundance of sunlight exposure. Aquatic plants use oxygen for respiration at night and can raise the pH of the water during photosynthesis during the day. Controlling the excessive growth is key to meeting pH and dissolved oxygen criteria and improving the health of the aquatic community (Ecology 2008).

Table 2 highlights restoration opportunities identified to address these conditions. While predominantly developed for the Palouse and Cow Creek basins, these opportunities are generally applicable County-wide. The expected time to implement these projects was either derived directly from the planning documents or estimated based on the complexity of project implementation. A very brief summary of the expected benefit of project implementation is also described.

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

<b>Actions/Waterbody</b>	<b>Expected Time to Implement</b>	<b>Benefit</b>	<b>Source</b>
<i>Palouse River</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
Manage grazing in riparian areas by installing livestock exclusion fencing and off-stream watering	ongoing	water quality, streambank stabilization	Palouse Watershed 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>Cow Creek</i>			
Manage grazing in riparian areas by installing livestock exclusion fencing and off-stream watering. Use NRCS riparian buffer standards, which require a minimum 35 foot buffer between the livestock fence and the mean ordinary high water mark of the nearest stream bank	ongoing	water quality, streambank stabilization	Cow Creek Pollution Prevention Program
Work with individual landowners to review pesticide and fertilizer use, and to implement the following best management practices to limit water quality impacts: 1) Manage Sprague Lake inputs to reduce nutrient loading, 2) Enhance riparian areas, 3) Urban/rural education program, and 4) Conservation tillage.	ongoing	water quality, streambank stabilization	Cow Creek Pollution Prevention Program
Implement habitat improvement projects involving construction or placement of instream structures	0-3 years	water quality, streambank stabilization	Cow Creek Pollution Prevention Program
Implement riparian restoration or enhancement measures	0-3 years	stream temperature, water quality, streambank stabilization	Cow Creek Pollution Prevention Program

Actions/Waterbody	Expected Time to Implement	Benefit	Source
<i>Other</i>			
Install a fish passage barrier on Cow Creek below Sprague Lake to prevent repopulation of Sprague Lake with undesirable species that have been previously eliminated	0-3 years	Habitat	Palouse Watershed Plan 2007

## 5.2 Additional Projects and Programs to Achieve Local Restoration Goals

The Analysis Report (TWC 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. In Adams County, a few landowners own extensive areas of shoreline. Working with these landowners directly to voluntarily implement agriculture BMPs and habitat improvement projects would be beneficial to many shoreline areas. There are also some large areas of publicly owned shoreline which provide excellent opportunities for restoration, including public access and educational opportunities. Potential restoration opportunities identified for some specific reaches are discussed in more detail below.

### Lower Crab Creek Agriculture

The majority of Lower Crab Creek that is within Adams County lies within the National Wildlife Refuge boundaries. However, the shorelines outside of the refuge (identified as Reach 1 in the Analysis Report), are predominantly in agricultural use. Many of the same issues with riparian zone alteration and water quality that are discussed above for Cow Creek occur here as well. The TMDL currently under development for dissolved oxygen, fecal coliform and pH will likely include restoration recommendations that will help address these issues. 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.

### Sprague Lake WDFW Area

The Sprague Lake shorelines includes a large area of intact wetland and open space at the lake outlet (Reach 1). Opportunity exists to protect the existing wetland function in this area. Much of the land on the south/southwest end of Sprague Lake is owned by

WDFW, including a boat launch area which currently provides some of the only public access to the lake. This public ownership provides good opportunity for restoration activities, as well as community involvement and education such as interpretive signs.

#### Hallin and Cow Lake Public Access Areas

Agriculture is the primary modification near Cow and Hallin Lakes, however it is not a dominant use in the shoreline area itself. Still, vegetative function is low in the public access areas between Hallin and Cow Lakes where vegetation is sparse. Washington State owns the parcel covering the eastern portion of Hallin Lake and the northern Cow Lake shoreline where this access takes place. The public access provides excellent restoration potential, including providing opportunities for public involvement and education.

#### Columbia Plateau State Park Trail

The Columbia Plateau State Park Trail is a 4,109-acre, 130-mile-long rail-bed trail that traces the 1908 original path of the Spokane, Portland, and Seattle Railroad. The route is most accessible near Cheney, WA. As the trail continues west through Adams County, it becomes less accessible; however, the trail crosses Cow Creek south of Benge-Washtucna Road (Reach 1). Habitat improvement projects involving riparian restoration could benefit this reach. The trail also provides a good opportunity for public involvement and education.

#### John Wayne Pioneer Trail

The John Wayne Pioneer Trail (also known as Iron Horse State Park) follows the former railway roadbed of the Chicago, Milwaukee, St. Paul & Pacific Railroad, which crosses Cow Creek at the border between Reaches 3 (a wetland complex) and 4 (the Harder Road area). 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).

The trail runs through a shoreline area dominated by agricultural practices, which is mapped as wetland. Habitat improvement projects involving riparian restoration could benefit this area. The trail also provides a good opportunity for public involvement and education.

## 6 STRATEGIES TO ACHIEVE LOCAL RESTORATION GOALS

This section discusses programmatic measures for Adams County designed to foster shoreline restoration and achieve a net improvement in shoreline ecological processes, functions, and habitats. The County is constrained in its ability to implement restoration projects or programs on their own by projected budget and staff limitations. However, the SMP represents an important vehicle for facilitating and guiding restoration projects and programs that can be implemented through partnerships with private and/or non-profit entities. The County can provide direction and leadership to assure that restoration designs meet the identified goals of the various plans. The discussion of restoration mechanisms and strategies below highlights programmatic measures that the County may potentially implement as part of the proposed SMP, as well as parallel activities that would be managed by other governmental and non-governmental organizations.

### 6.1 Funding Opportunities

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

Table 3. Potential Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Description	Funding source/ Grant Administrator
Watershed Planning Act	Funding for local development of watershed plans for managing water resources and for protecting existing water rights.	Washington Department of Ecology
Centennial Clean Water Fund	Funds water quality infrastructure and projects to control non-point source pollution.	
CWA Section 319	Funds non-point source pollution control projects.	
Clean Water State Revolving Fund	Provides low interest and forgivable principal loan funding for wastewater treatment construction projects, eligible nonpoint source pollution control projects, and eligible Green projects.	
Salmon Recovery Funding Board	Funds projects to protect or restore salmon habitat and assist in related activities.	Washington Recreation and Conservation Office
Aquatic Lands Enhancement Account	Funds the acquisition, improvement, or protection of aquatic lands for public purposes.	
Washington Wildlife Recreation Program	Funds a range of land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland preservation, and construction of outdoor recreation facilities.	

Restoration Project/Program	Description	Funding source/ Grant Administrator
Partners for Fish and Wildlife	Provides technical and financial assistance to landowners to improve their property for targeted fish and wildlife species without a long-term easement contract.	U.S. Fish and Wildlife Service
Fisheries Restoration and Irrigation Mitigation Program	Funds governments and tribes to install fish screens and fish passage improvements associated with water diversions.	
Wetlands Reserve Program	This program provides technical support and will fund riparian and wetland restoration in exchange for protection.	Natural Resources Conservation Service
Conservation Reserves Enhancement Program	This program provides funds to farmers who maintain riparian buffers on on-site waterbodies. The funds cover technical assistance, plant costs, and land "rental" fees.	Adams County Farm Service Agency
Columbia Basin Water Transactions Program	Funds permanent acquisitions, leases, investments in efficiency and other incentive-based approaches to assist landowners who wish to restore instream flows for habitat.	National Fish and Wildlife Foundation

## 6.2 County Planning

The County could incorporate shoreline restoration goals and projects into the County's capital improvement plans, parks facility plans, and road plans to facilitate implementation of restoration within the County. The County 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

The County should continue its association and involvement with the local watershed planning unit for WRIA 34. Development of watershed planning units for the other watersheds with shoreline water bodies, WRIs 41 and 36, may aid in better coordinating and facilitating restoration efforts.

The County may also look for other time sensitive opportunities for involvement in regional restoration planning and implementation.

# 7 CONCLUSION

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The Adams 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

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The following is a sampling of helpful web resources.

Native plant landscaping guide:

[http://www.nwcb.wa.gov/publications/Eastern\\_Garden\\_Wise.pdf](http://www.nwcb.wa.gov/publications/Eastern_Garden_Wise.pdf)

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>

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