Lincoln County Voluntary Stewardship Program

Work Plan

February 2018

Funded by Washington State Conservation Commission

DRAFT

~~November 2017~~February 2018

Lincoln County Voluntary Stewardship Program

Work Plan ~~– DRAFT~~

State Review Draft

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ABBREVIATIONS

CAO	Critical Area Ordinance
CARA	critical aquifer recharge area
County	Lincoln County
CPPE	Conservation Practice Physical Effect
CRP	Conservation Reserve Program
CSP	Conservation Stewardship Program
DNR	Washington State Department of Natural Resources
Ecology	Washington State Department of Ecology
EQIP	Environmental Quality Incentives Program
FEMA	Federal Emergency Management Agency
FFA	frequently flooded area
FSA	Farm Service Agency
GHA	geologically hazardous area
GMA	Growth Management Act
HCA	habitat conservation area
LCCD	Lincoln County Conservation District
NRCS	Natural Resources Conservation Service
PHS	Priority Habitats and Species
RCW	Revised Code of Washington
TMDL	Total Maximum Daily Load
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VSP	Voluntary Stewardship Program
WDFW	Washington Department of Fish and Wildlife
WHIP	Wildlife Habitat Improvement Program
Work Group	Lincoln County VSP Work Group
Work Plan	Lincoln County VSP Work Plan
WRIA	Water Resource Inventory Area
WSCC	Washington State Conservation Commission
WSDA	Washington State Department of Agriculture

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1 Introduction

1.1 Voluntary Stewardship Program Overview

The Washington State Growth Management Act (GMA) was adopted by the Washington State Legislature in 1990. The GMA provides for citizens, communities, local governments, and the private sector to cooperate and coordinate in comprehensive land-use planning. The GMA requires county and local governments to adopt development regulations that protect critical areas.

In 2011, the Legislature amended the GMA with the intent to protect and voluntarily enhance critical areas in places where agricultural activities are conducted, while maintaining and enhancing the long-term viability of agriculture. This amendment established the Voluntary Stewardship Program (VSP), a new, non-regulatory, and incentive-based approach that balances the protection of critical areas on agricultural lands while promoting agricultural viability, as an alternative to

Critical Areas per RCW 36.70A.020(5) include:

- Wetlands
- Fish and wildlife habitat conservation areas
- Critical aquifer recharge areas
- Geologically hazardous areas
- Frequently flooded areas

Under VSP, critical areas on lands where agricultural activities are conducted are managed under this voluntary program. Lands used for non-agricultural purposes are regulated under Lincoln County's Critical Areas Ordinance.

managing agricultural activities in the County under the Critical Areas Ordinance (CAO). VSP is not a replacement for compliance with other local, state, or federal laws and regulations, but participation in VSP will help to show how much effort the County's agricultural producers are investing in meeting these requirements and to document the benefits of these efforts in protecting and enhancing critical area functions and values (Figure 1-1).

Figure 1-1
Balanced Approach of Critical Areas Protection and Agricultural Viability

VSP presents a unique opportunity to address an important environmental topic that has been a source of controversy in recent decades—how to protect critical areas on agricultural lands while keeping agriculture economically viable (Schultz and Vancil 2016).

What are considered "agricultural activities" under VSP?

VSP applies to lands where agricultural activities are conducted, as defined in RCW 90.58.065.

Agricultural activities mean agricultural uses and practices including, but not limited to:

- Producing, breeding, or increasing agricultural products, including livestock
- Rotating and changing agricultural crops
- Allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded
- Allowing land used for agricultural activities to lie dormant due to adverse agricultural market conditions
- Allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement
- Conducting agricultural operations
- Maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities, provided the replacement facility is no closer to the shoreline than the original facility
- Maintaining agricultural lands under production or cultivation

In 2012 the Board of County Commissioners of Lincoln County (County) passed a resolution (No. 12-01) to "opt-into" the VSP. The commission came to the following conclusions:

- Farming is vital to the economy of the County.
- The Upper Crab Creek and Lower Lake Roosevelt watersheds provide critical and economically important functions that may be impacted by farming.
- Biological diversity within these watersheds is important to water and habitat quality and viability.

1.2 Work Plan Elements

The guiding document for the VSP is this Lincoln County VSP Work Plan (Work Plan), the goal of which is to protect critical areas while maintaining and enhancing the viability of agriculture. The Work Plan was developed by the Lincoln County VSP Work Group (Work Group), convened by the Lincoln County Conservation District (LCCD) that is comprised of agricultural producers, local government elected officials and staff, agency representatives, and interest groups.

Core VSP Work Plan Approval Tests

The Work Plan has been developed to meet the following VSP statutory tests required for State approval:

- **Protect critical areas while maintaining and enhancing the viability of agriculture** at the end of 10 years after receipt of funding. RCW 36.70A0725
- **Create measurable benchmarks that are designed to protect and enhance** (through voluntary, incentive-based measures), **critical areas functions and values.** RCW 36.70A.720 (1)(e)

1.2.1 Work Plan Goals

One of the main goals of the Work Plan is to identify stewardship practices that are implemented under existing programs or voluntarily implemented through producer-funded practices and identify goals and benchmarks for continued protection and enhancement of the County's critical area functions and values.

Producer participation is a key component of Work Plan implementation and program success. **Failure of the Work Plan in meeting protection goals will trigger a regulatory approach to protecting critical areas under the GMA,** such as applying buffers and setbacks along streams or wetlands. Additionally, the regulatory approach for protecting critical areas on agricultural lands would not have the equally important VSP goal of maintaining and enhancing agricultural viability. Neither would it necessarily encourage outreach or technical assistance for agricultural operators. Therefore, producer participation will be encouraged as a central component of the Work Plan, through new and continued implementation of stewardship strategies and practices, to help ensure the success of VSP and protect agricultural viability.

Stewardship Practices:
Examples of practices that protect critical area functions and values and promote agricultural viability include:

- Direct seed/No Till
- Crop rotations
- Pest and nutrient management
- Cover crops
- Prescribed grazing

See the **Self-Assessment Checklist** (Appendix E) for additional examples of voluntary stewardship practices and resources for additional information and potential

Dryland agriculture in Lincoln County

The Work Group developed a *Lincoln County VSP Overview and Checklist* (Appendix E) to provide a summary overview of VSP and the Work Plan, including frequently asked questions and a Self-Assessment Checklist, as an outreach and implementation tool to help assess how the VSP could apply to individual agricultural producer's lands. The Self-Assessment Checklist includes additional examples of stewardship practices that protect and enhance critical areas and promote agricultural viability.

1.2.2 Work Plan Organization

This Work Plan, including its appendices, includes detailed information intended to fulfill the state requirements outlined under the Revised Code of Washington (RCW) 36.70A.720(1)(a through l), which requires Work Plans to include critical area protection and enhancement goals with measurable benchmarks and an implementation, reporting, and tracking framework.

Lincoln VSP Work Plan Organization

- **Section 1 – Introduction:** Background on VSP regulation and how it applies to the County
- **Section 2 – Lincoln County Regional Setting:** Overview of County conditions, including description of critical areas
- **Section 3 – Baseline and Existing Conditions:** Description of county-wide critical areas presence and functions and values as of 2011
- **Section 4 – Protection and Enhancement Strategies:** Description of currently implemented conservation practices that protect and enhance critical areas functions and values
- **Section 5 – Goals, Benchmarks, and Adaptive Management:** Description of VSP goals for critical area protection and enhancements, measurable benchmarks, and indicators and methods for adaptive management
- **Section 6 – Implementation:** Detailed plan outlining implementation of VSP actions by the VSP Lead
- **Appendices:** Additional detailed information referenced by the above sections

1.3 Work Plan Development ~~– Roles and Responsibilities~~

1.3.1 Outreach

~~RCW 36.70A.705 identifies roles and responsibilities for state agencies, counties, and VSP work groups. Table 1-1 provides a summary of these roles and responsibilities, adapted to the Work Plan development process. Administrative, technical, and collaborative roles and responsibilities are included in the Work Plan development process spanning state, county, and local levels.~~

Lincoln County designated the LCCD to manage and facilitate the VSP process.

The Work Group, convened by the LCCD, developed the Work Plan through a series of 13~~1~~ Work Group meetings from~~,~~ ~~beginning on~~ April ~~19,~~ 2016 through ~~XXXX~~February 2018. Work Group members were recruited through mailed invitation to tribal affiliates, conservation agencies, and past and current participants in County conservation practices. Additionally, the LCCD conducted the following outreach activities to form the Work Group:

- H~~h~~osted two "VSP kick-off" meetings on March 22, 2016~~;~~
- R~~r~~an ads in local papers~~; and~~
- P~~p~~osted Work Group invitation announcements on social media, including the LCCD website and Facebook page, and the LCCD electronic monthly newsletter~~.~~

Throughout the Work Plan development process, meeting agenda and materials were available to the public via the LCCD's VSP webpage (https://www.lincolncd.com/voluntary-stewardship-program) and also emailed to the VSP interested parties/contact list for all Work Group meetings. Additional outreach was conducted to seek input from agencies and stakeholders through community meetings, outreach materials, newsletters, and press releases.

Prior to formal submittal to the State, the LCCD ~~conducted~~ hosted four outreach meetings throughout the County to provide opportunities for the public to learn more about the VSP, review the County's draft VSP Work Plan, and provide input on the Draft Work Plan. The four meetings were held ~~in late 2017 and early 2018 [**TO BE UPDATED FOLLOWING OUTREACH**].~~ on December 5 and 6, 2017, and a total of 41 members of the public, Work Group members, ~~and~~ LCCD, and ~~support~~ staff ~~and support~~ were in attendance at the four public meetings. See Appendix F for the Public Meetings Summary.

1.3.2 Roles and Responsibilities

RCW 36.70A.705 identifies roles and responsibilities for state agencies, counties, and VSP work groups. Table 1-1 provides a summary of these roles and responsibilities, adapted to the Work Plan development process. Administrative, technical, and collaborative roles and responsibilities are included in the Work Plan development process spanning state, county, and local levels.

Implementation roles and responsibilities for the Work Plan are further described in Section 6.

Table 1-1
VSP Roles and Responsibilities for Plan Development

State – Approval and Administration	
WSCC	Administers VSP statewide; approves/rejects locally developed work plans
VSP Technical Panel[1]	Provides technical guidance, reviews draft work plans, and makes recommendations on whether to approve or reject the work plan
VSP Statewide Advisory Committee[2]	Works with the WSCC to revise rejected draft work plans
Local – Administration and Work Plan Development	
Lincoln County	Designates administration of VSP funding and grant for work plan development
Lincoln County VSP Work Group	Develops and proposes a work plan for approval by WSCC
Lincoln County Conservation District	Administers VSP funding, manages and facilitates the VSP process, and provides technical information to support work plan development
Other Technical Providers	Provides technical input during work plan development
Agricultural Producers – Outreach Focus	
Landowners, Operators, and Others	Provides input to the draft work plan

Notes:

1. The VSP Technical Panel members include representatives from Washington State Department of Ecology, Washington Department of Fish and Wildlife, Washington State Department of Agriculture, and the WSCC.
2. The Committee includes two representatives each from environmental interests, agriculture, and counties; two tribal representatives are also invited to participate.

VSP: Voluntary Stewardship Program
WSCC: Washington State Conservation Commission

2 Lincoln County Regional Setting

2.1 Lincoln County Profile

Lincoln County is located in the semi-arid region of central eastern Washington. It encompasses a total area of 2,339 square miles, and agriculture is the predominant land use. This section provides a County profile description for the following items (Appendix A: VSP Map Folio for associated maps):

- Water resources and precipitation
- Soils and terrain
- Land use and landcover

2.1.1 Water Resources and Precipitation

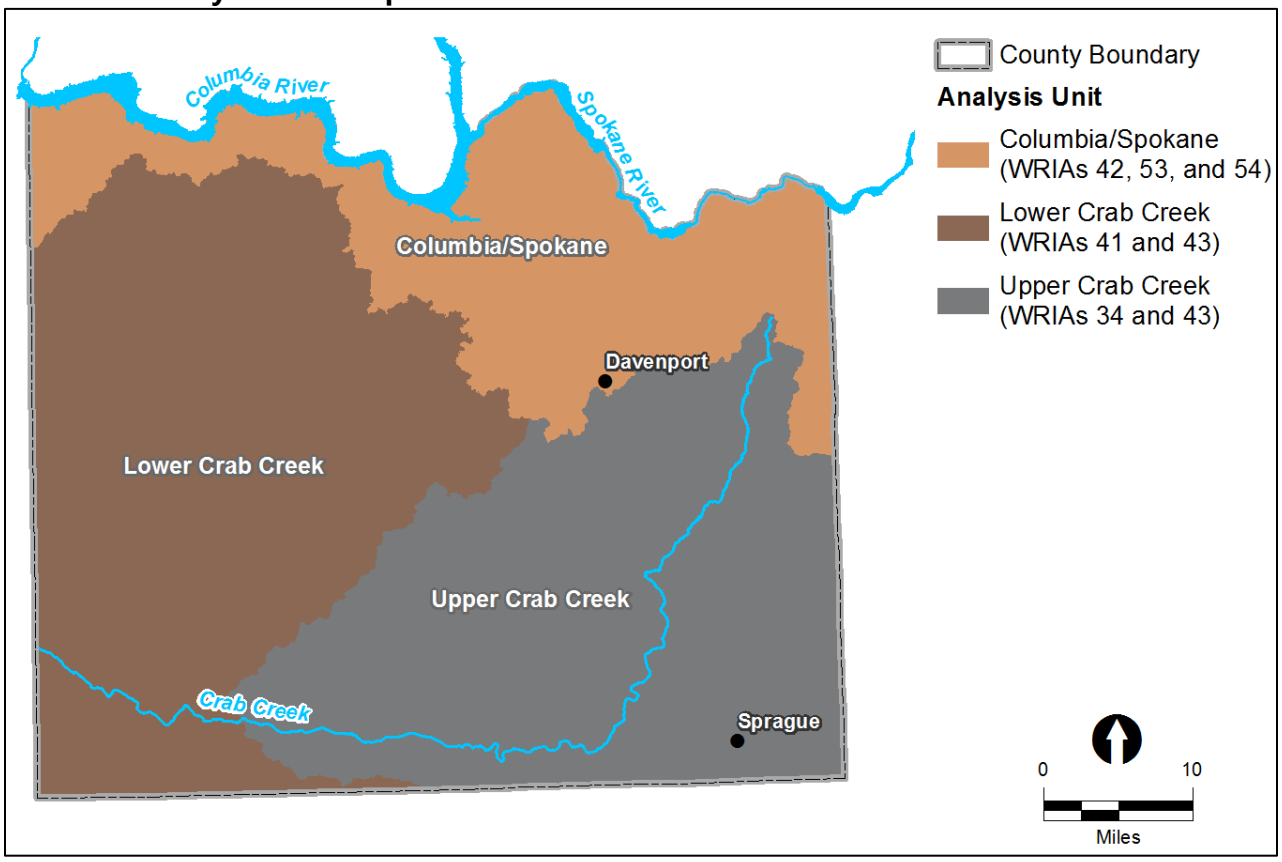
The County includes portions of six watersheds, which are known as Water Resource Inventory Areas (WRIAs). Most of the County is in the Upper Crab-Wilson (WRIA 43), which drains southwest toward the Columbia River. The northern portion of the County drains northward into the Columbia River (Lower Lake Roosevelt WRIA 53) and the Spokane River (Lower Spokane WRIA 54). Small portions of the Grand Coulee (WRIA 42), Lower Crab (WRIA 41), and Palouse (WRIA 34) watersheds are also present in the County (Appendix A, Figure 1).

Precipitation ranges from 8 inches of annual precipitation in the southwestern corner of the County to 16 inches on the eastern edge of the County (Appendix A, Figure 2).

For the purposes of the Work Plan, the Work Group identified the following three watershed analysis units to develop a more localized planning approach during implementation of the Work Plan (see Appendix B-2). Although the Work Plan and the goals and benchmarks discussed in Section 5 apply County-wide, the following watershed analysis units will help realize more localized watershed objectives during implementation:

- Columbia/Spokane (WRIAs 42, 53, and 54)
- Lower Crab Creek (WRIAs 41 and 43)
- Upper Crab Creek (WRIAs 34 and 43)[1]

Figure 2-1
Watershed Analysis Units Map



[1] Only a small portion of the County in the southeast corner drains into WRIA 34 as a part of the Palouse River watershed. This area has been included in the Upper Crab Creek analysis unit for planning purposes, recognizing that this small area drains to the southeast, towards Whitman County.

2.1.2 Soils and Terrain

The northern boundary of the County consists of a deep canyon, which contains the Columbia and Spokane rivers and their tributaries, that was enlarged by the channeled scabland floods. The central portion of the County is dominated by channeled scablands, and the eastern, western, and southern portions of the County are dominated by loess hill uplands that are dissected by channeled scablands in the drainages and draws (Appendix A, Figure 3). Elevation in the County increases from southwest to the northeast, with the highest point being Lilienthal Mountain, at 3,568 feet (USDA 1981).

Shrub Steppe and Scablands

Loess Hills with Dryland Wheat

2.1.3 Land Use and Landcover

The County is predominantly rural and dominated by agricultural and larger land tracts outside of cities and towns. The largest city in the County is Davenport, which is also the County seat. Agriculture on privately owned lands comprises approximately 87% of the County's landcover, which is generally associated with three categories: 1) dryland crops; 2) irrigated crops; and 3) rangelands (Appendix A, Figure 4).

Major Resource Concern

Soil erosion is a major management concern within the County, where 44% of the County's agricultural lands are classified as severe to very-severe water erosion potential areas and 16% are classified as wind erosion potential areas. Soil erosion largely occurs via runoff during late winter and early spring rainfall events or during natural snow-melt events on highly erodible frozen loess soils. The higher precipitation areas in the northern and eastern parts of the County are more at risk for water erosion.

Section 3 includes further discussion on where these areas intersect with agricultural lands.

Dust storm causing soil loss due to wind erosion

2.2 Agricultural Activities

Agriculture is the major land use in the County. The Work Plan's goals and measurable benchmarks for voluntary landowner participation apply to agricultural producers on privately owned land in unincorporated areas of the County, which comprise approximately 87% of the County's lands.

The County's dryland agriculture comprises most of the agricultural landcover within the County (52%). Additionally, rangelands account for 32% of County lands, and irrigated lands account for a very small amount (3%) of agricultural activity within the County.

Statewide, per the U.S. Department of Agriculture's (USDA's) Census of Agriculture (2012), Lincoln County:

- Market value of products sold were primarily from crops (95%) and livestock sales (5%).
  - Wheat is the top crop item in the County by acres and value.
  - Calves and cattle are the top livestock item.
- Economic value (net cash income) from agricultural products is approximately $88 million.
- Market value from agricultural products is approximately $183 million.

Dryland Agricultural Practices

Moisture management is a key concern within the County's dryland agricultural lands (primarily wheat) where the annual precipitation of 8 to 16 inches a year is relied on to support cropping systems. Lack of moisture in soils not only affects the land's ability to support wheat crops, but also results in loss of the region's highly erodible soils. In recent years, producers within the County have adopted practices to manage soil moisture retention and reduce water-borne soil erosion by implementing practices such as crop rotations, no- and reduced-till, mulch tillage, field borders, and direct-seed methods. See Section 4 for additional protection and enhancement strategies.

See Table 2-1 for summary of agricultural landcover and major agricultural products within the County.

Table 2-1
Agricultural Activity and Products (Private Lands)

Agricultural Type	% of County	Primary Crops/Livestock
Dryland	60%	• Wheat • Barley • Hay
Irrigated	4%	• Wheat • Alfalfa and Timothy grass • Potatoes and vegetables • Tree fruit (e.g., apples and cherries)
Rangeland	36%	• Cattle • Horses • Sheep
Total	**87%**	

Sources:
WSDA Agricultural Landcover Data 2011
USDA 2012

The 900 farms in the County vary in size ranging from relatively small, with agricultural product sales of less than $10,000, to large, with agricultural product sales of greater than $500,000 (Table 2-2).

Table 2-2
Size of Farms in Lincoln County Based on Agricultural Product Sales

Farm Agricultural Product Sales (Dollars)	% of Farms
Less than 10,000	53%
10,000 to 100,000	13%
100,000 to 250,000	9%
250,000 to 500,000	10%
Greater than 500,000	15%

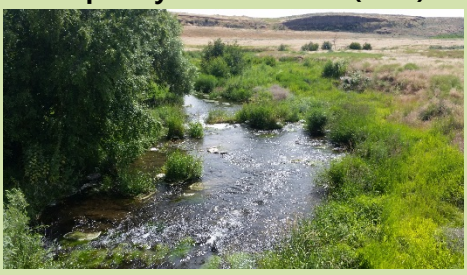
2.3 Critical Areas

The five critical areas that are specifically defined under the GMA (RCW 36.70A.030) include: 1) wetlands; 2) fish and wildlife habitat conservation areas (HCAs); 3) critical aquifer recharge areas (CARAs); 4) geologically hazardous areas (GHAs); and 5) frequently flooded areas (FFAs). Critical areas perform key environmental functions (e.g., water quality and fish and wildlife habitat) and provide protections from hazards (e.g., flood, erosion, or landslide hazards).

The County has identified five critical areas that will be managed under the Work Plan: wetlands, HCAs, CARAs, GHAs for erosion hazards, and FFAs. Critical areas that will continue to be reviewed under the County's CAO, include GHAs for landslide or seismic hazards, and any structures that are proposed within agricultural lands for any of the five critical areas, whether they support agricultural activities or not.

GHAs for Landslide or Seismic Hazards:
Structures in agricultural lands will continue to be permitted and regulated through the County's CAO for landslide and seismic hazard areas. Geologically hazardous areas for erosion hazards have primary applicability in the VSP context, and agricultural activities related to erosion hazards will be managed under VSP.

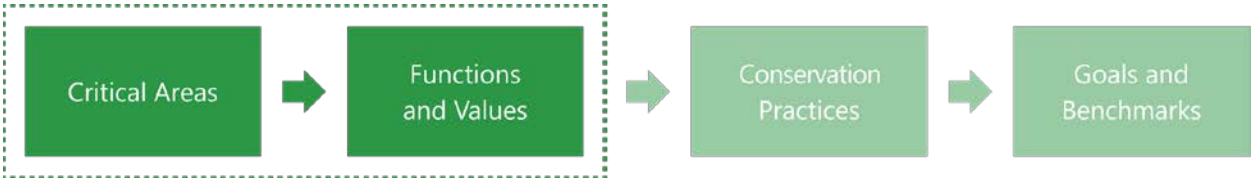
The County's CAO (Lincoln County Code Chapter 18.02), includes identification and designation criteria for the County's five critical areas, which are summarized below and ~~in which are~~ further defined in Appendix B-3.

Wetlands 	Wetlands are areas inundated or saturated by surface water or groundwater for at least part of the growing season and support vegetation adapted for life in saturated soil conditions. **Functions:** Water quality, hydrology, and habitat
Fish and Wildlife Habitat Conservation Areas (HCAs) 	HCAs are lands and waters that provide habitat to support fish and wildlife species throughout their life stages. These include ranges and habitat elements where endangered, threatened, and sensitive species may be found and areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. **Functions:** Water quality, hydrology, soil, and habitat
Critical Aquifer Recharge Areas (CARAs) 	CARAs are areas that have a critical recharging effect on aquifers used for drinking water, including aquifers vulnerable to contamination or that could reduce supply by reducing recharge rates and water availability. **Functions:** Water quality and hydrology
Geologically Hazardous Areas (GHAs) 	GHAs are areas susceptible to erosion, sliding, and other geological events. In Lincoln County, designated GHAs related to agricultural activities are primarily associated with erosion hazard areas, which include severe to very-severe water erosion hazards. Wind is another source of erosion in Lincoln County. Although wind erosion potential areas are not specifically designated as critical areas, they are discussed under GHA in this VSP. **Functions:** Water quality, hydrology, soil, and habitat
Frequently Flooded Areas (FFAs) 	FFAs include 100-year floodplains and floodways and often include the low-lying areas adjacent to rivers and lakes that are prone to flooding during heavy rains and snowmelt. These can include streams, rivers, lakes, wetlands, and areas where high groundwater forms ponds. **Functions:** Water quality, hydrology, soil, and habitat

2.3.1 Critical Areas Functions and Values

VSP legislation requires that work plans develop goals and benchmarks to protect and enhance critical area **functions and values** (RCW 36.70A.720(1)(e)). The key functions and values provided by the five critical areas in the County can be summarized into four major functions, which include: 1) water quality, 2) hydrology, 3) soil, and 4) habitat. The goals and benchmarks developed for this Work Plan, included in Section 5, are based on protection and enhancement for these four key functions.

Figure 2-2
VSP Crosswalk – Critical Areas Connection with Functions and Values



Each critical area provides one or more of these key functions and values, which are summarized in Table 2-3. The relationship between each critical area with key functions and values are discussed further in the following sections. See Section 3.1 for further discussion on the baseline conditions of critical areas within the County's agricultural lands. See Section 4 for key stewardship practices that provide functional benefits to these key functions.

Table 2-3
Critical Areas Functions

Critical Areas	Key Functions			
	Water Quality	Hydrology	Soil	Habitat
Wetlands	•	•		•
Fish and Wildlife Habitat Conservation Areas	•	•	•	•
Critical Aquifer Recharge Areas	•	•		
Geologically Hazardous Areas (Erosion)	•	•	•	•
Frequently Flooded Areas	•	•	•	•

Water Quality Function

Critical areas, such as stream channels, riparian areas, and wetlands, are a part of the aquatic ecosystem that filters and retains excess fine sediments and cycles out excessive nutrients (such as phosphorus and nitrogen) and other pollutants. These functions provide cleaner water, which is essential for supporting habitat for fish and other aquatic species. Critical areas also help moderate

water temperatures by providing vegetative shade and cooler water from recharged groundwater, which helps maintain cooler in-water temperatures and dissolved oxygen levels needed to support aquatic species.

In Lincoln County, some systems (including the Columbia River, Spokane River, and Crab Creek) exceed state standards for pollutants such as pH, dissolved oxygen, bacteria, and temperature (Ecology 2016a). Agriculture can affect surface and groundwater water quality through excess nutrients from fertilizers, bacteria from livestock (e.g., fecal coliform), toxins from chemical inputs, and sediment from soil erosion. However, fertilizer, sediment, and toxin inputs are also associated with paved or turfed landscapes, and septic systems also contribute to fecal coliform issues. Agriculture preserves lands from more intensive development and stewardship practices on agricultural lands can help protect or enhance water quality functions.

All five of the County's critical areas provide water quality functions, as summarized Table 2-4.

Table 2-4
Critical Areas Providing Water Quality Functions

Critical Area	Water Quality Functions
Wetland	• Reduces siltation by capturing sediment • Retains water to reduce erosion • Provides water filtration • Moderates water temperature by providing shade
HCA	• Reduces siltation by stabilization of streambanks from riparian vegetation • Provides water filtration • Moderates water temperature by providing shade
CARA	• Improves groundwater quality and protects public drinking water supplies through soil column and underlying geology infiltration
GHA	• Effects rate of soil erosion and associated movement of sediment deposited in surface waterbodies
FFA	• Vegetation in FFAs holds underlying soil in place and provides area for new sediment depositions to settle out • Moderates water temperature by shallow groundwater infiltration and releases from unconfined aquifers of cooler groundwater back to streams and by vegetation that can provide shade

Hydrology

Hydrology is the process of water delivery, movement, and storage. In an ecosystem, hydrology is affected by landform, geology, soil characteristics and moisture content, and climate (including precipitation). Water is delivered to streams primarily from surface and shallow subsurface runoff and, in some cases, from groundwater. Stream channels, riparian areas, and wetlands are also a part

of the aquatic ecosystem that stores and transports water and sediment, maintains base flows, and can support vegetation and microorganism communities.

In Lincoln County, stream flow is mainly driven by variations in precipitation and evapotranspiration from year to year. However, in much of the County, a drastic decline in stream flows and lake levels has occurred, including drying of Lake Creek and some tributaries to Crab Creek (Anchor QEA 2014).

Agricultural practices can affect the amount of moisture retained within soils and the amount of storage during rain events. Water retention is equally important for maximizing dryland crop yields. Farming practices can protect the land from loss of soil due to erosion and help retain moisture within the soils.

All five of the County's critical areas provide hydrology functions, as summarized in Table 2-5.

Table 2-5
Critical Areas Providing Hydrology Functions

Critical Area	Hydrology Functions
Wetland	• Stores water to reduce flooding and contributes to base flows
HCA	• Stores and retains water to reduce flooding and support base flows in streams
CARA	• Recharges groundwater resources
GHA	• Affects rate of groundwater infiltration and rate of surface water runoff
FFA	• Stores and retains surface water in floodplain, reducing velocities and modifying discharge rates • Recharges groundwater that can later be returned to the stream to help maintain base flow

Soil Function

Soil provides an underground living ecosystem, which is essential for preserving plants, animals, and human life. Soil conservation is essential in the County to support healthy soils that have the following characteristics:

- Reduce susceptibility to erosion
- Hold and slowly release water (see hydrology function section for more detail)
- Filter pollutants and, in many cases, detoxify them
- Store, transform, and cycle nutrients
- Physically support plants

In Lincoln County, agriculture preserves lands from more intensive development, and farmers can be the County's most effective soil managers by limiting tillage and pesticide and fertilizer applications to the lowest effective level. Intensive tillage can lead to loss of soil organic matter,

pesticides can impact beneficial soil organisms, and high concentrations of fertilizers inhibit nitrogen fixation and stimulate nitrification (increasing toxins in the environment).

Food Quality Protection:

Before a crop protection product can be sold or used in Washington, it must be registered by the Environmental Protection Agency (EPA) and the Washington State Department of Agriculture. The label EPA issues for each product is a legal document. Failure to follow label directions is a violation of law. The Washington State Department of Agriculture has an enforcement division to ensure users follow the label. More than 120 tests are required on each product to ensure safety for people and the environment.

Environmental tests determine how the product breaks down in soil, water, air, and plants to ensure protection of wildlife, birds, aquatic life and plants. Toxicology tests determine acute and chronic effects, effect on reproduction, and carcinogenic effects to ensure protection of human health. When Congress passed the Food Quality Protection Act (FQPA) in 1996, additional safety testing requirements were added to protect infants and children. EPA approves only label directions that meet the FQPA's "reasonable certainty of no harm" standard.

Three of County's critical areas provide soil functions, as summarized in Table 2-6.

Table 2-6
Critical Areas Providing Soil Functions

Critical Area	Soil Functions
HCA	• Reduces rate of erosion by providing vegetative cover
GHA	• Improves structure of soil to minimize some types of erosion
FFA	• Supports moisture content in soils, reduces rate of erosion, and supports plant growth that can increase organic inputs to soil

Fish and Wildlife Habitat

Habitats are the natural environment in which a particular species or population can live. The habitat requirements are unique for different species and can be unique for different life stages of a species. Habitat loss is the primary threat to the survival of native species.

In Lincoln County, agriculture practices have impacted habitats by replacing a historically diverse landscape with an intensely managed agricultural landscape. Although agriculture lands can provide vast tracts of semi-natural habitat, species biodiversity is typically higher in the remnant natural areas in the County. Farmers that provide greater landscape variability and high perimeter-to-area habitats on their land can provide meaningful benefit to many different species (Weibull et al. 2003).

There is a great deal of high-quality deer and bird habitat on land that is actively farmed. Farming practices provide a variety of habitat functions, including providing cover. Crops provide a food source for herbivores such as deer, and birds help control insect and rodent populations. Fish and other species use wetlands and streams in the County.

Four of County's critical areas provide habitat functions, as summarized in Table 2-7.

Habitats and Species in Lincoln County

In the County, habitats include wetlands, rivers, streams, riparian areas, shrub-steppe, and uplands that support aquatic and terrestrial species.

Common fish and wildlife species in Lincoln County:

- Mule Deer
- Elk
- Moose
- Coyote
- Cougars
- Grouse
- Waterfowl and shorebirds
- Bald eagles
- Trout
- Kokanee

Table 2-7
Critical Areas Providing Habitat Functions

Critical Area	Habitat Functions
Wetland	• Provides aquatic and woody vegetated habitat for fish and wildlife
HCA	• Provides in-stream spawning, rearing, and migratory habitat for fish • Provides upland and riparian migration corridors, refuge, forage, nesting, and rearing areas for wildlife • Provides aquatic habitat by supplying organic inputs (e.g., leaf fall, insects, and large wood) • Supports sensitive species lifecycles
GHA	• Affects rate of erosion as it relates to sediment inputs to stream and wetland aquatic habitat
FFA	• Provides aquatic and riparian habitats for wildlife, plants, and fish


Photo Credit: Ron Mielke

3 Baseline and Existing Conditions

The effective date of the VSP legislation is July 22, 2011. This is also the date chosen by the legislature as the applicable baseline for accomplishing the following items (RCW 36.70A.703):

- Protecting critical areas functions and values
- Providing incentive-based voluntary enhancements to critical areas functions and values
- Maintaining and enhancing the viability of agriculture in the County

Historic Conditions and Shrub-steppe Habitat

It is not the intent of VSP to restore natural resources to pre-development conditions, but to protect critical areas functions and values that existed in 2011. Prior to cultivation, most of the County was covered with shrub-steppe habitat. The typical vegetation in these communities consisted of open sagebrush and shrub plains with an understory of perennial grasses. These areas are important habitat for species such as sage-grouse, Washington ground squirrel, and burrowing owl.

Conversion to cropland, overgrazing, and invasion by exotic species has resulted in the loss and fragmentation of these habitats. Today, less than half of the historic shrub-steppe habitat in Washington remains (WDFW 2017). In Lincoln County, approximately 37,000 acres are mapped as priority shrub-steppe habitat by the Washington Department of Fish and Wildlife. VSP activities are focused on protecting shrub-steppe and other habitats existing in the County.

The 2011 baseline sets the conditions from which the County will measure progress in implementing the Work Plan and meeting measurable benchmarks (see Section 5). This section summarizes baseline conditions for:

- Critical areas within the County intersecting with agricultural lands; and
- Agricultural viability with the County (strengths, weaknesses, opportunities, and threats)

It's important to note that changes to baseline conditions outside of VSP are likely to occur due to effects from climate change, natural events (e.g., wild fires), changes in hydrology from the Columbia Basin Project, or other changes outside of the scope of VSP. These changes would be documented through the reporting and adaptive management process discussed in Sections 5 and 6.

3.1 Baseline (2011) Intersection of Critical Areas and Agricultural Land Uses

This section provides a baseline conditions summary of the intersections of critical areas on agricultural lands. The following appendices provide additional information and methods relied upon for the baseline conditions summary:

- Appendix A: VSP Map Folio
- Appendix B: Baseline Conditions Summary (includes methods, data sources, and critical areas data summary tables)

The overlap between agricultural land use and critical areas generally accounts for only a small percentage of the total agricultural land in the County (Table 3-1). Most agricultural lands do not contain critical areas other than soil erosion hazard areas. However, most of the CARAs and HCAs in the County are on agricultural lands. Although the fraction of agricultural lands that intersect with these critical areas is a relatively small fraction of the County's agricultural land base, these lands include many areas of high-functioning habitats, which provide important ecological functions.

Tables 3-1 and 3-2 summarize the potential presence of critical areas within the County that intersect with agricultural activities on private lands.

Table 3-1
Critical Areas Within Lincoln County Agricultural Lands

Critical Area Type		Acres Within Agricultural Lands[1]	% of Total Agricultural Lands[1]
Wetlands (all types)		15,097	1%
Habitat Conservation Areas[2] *(Also includes about 4,365 stream miles)*		53,454[2]	4%[2]
Critical Aquifer Recharge Area		5,778	<1%
Geologically Hazardous Areas[3]	Water Erosion	569,859	44%
	Wind Erosion[4]	213,333	16%
Frequently Flooded Areas		24,116	2%

Notes:

1. Agricultural areas included in this summary are limited to privately owned lands. Publicly owned land is not managed under VSPs.
2. These areas include sensitive, candidate, and threatened species and habitats mapped in Washington Department of Fish and Wildlife's Priority Habitat and Species (PHS) data and maps, consistent with the County's Critical Areas Ordinance definition of Fish and Wildlife Habitat Conservation Areas. See Appendix A, Figure 6 and Appendix B-4 for additional details on PHS species, including recreation and game species.
3. Geologically Hazardous Areas i~~dentifies~~ ~~I~~ncludes areas mapped with the higher potential to be susceptible to wind and water erosion (see Appendix B-3 for the County CAO definitions). Actual erosion occurrences depend on weather events, vegetation, and other conditions. Additionally, other soils and areas within the County are susceptible to more moderate erosion potential or erosion risks from other factors.
~~3.~~4. Acres are based on wind erodibility group (WEG) data obtained in 2015 (see Appendix B-1 for data sources). New WEG data was published in September 2017 at the end of the planning process for this Work Plan. The 2017 data does not affect the goals or benchmarks established in the Work Plan; however, future reporting on the Work Plan could incorporate the 2017 data.

Game species in Priority Habitat and Species (PHS):

PHS data and mapping are maintained by Washington Department of Fish and Wildlife in part to provide a reference to the potential existence of HCAs. Game species habitat are mapped in PHS within approximately 380,000 acres of the County's private agricultural lands, comprising primarily of mule deer and elk habitat. These habitats almost entirely overlap existing dryland agriculture and range lands. Agriculture is expected to continue providing a suitable habitat for these game species.

- **Protection goals:** Protection efforts under VSP are focused on the rare and undisturbed natural habitats that exist in the County, such as wetlands, cliffs and bluffs, riparian areas, and shrub-steppe. Game species areas that overlap with existing agricultural lands are not the primary protection focus of this Work Plan, except where there is overlap with other habitat types as referenced above. The protection goals included in the Work Plan (Section 5.1) for these habitats are also expected to benefit game species.
- **Enhancement goals:** Enhancement efforts under this Work Plan include conservation efforts that focus on improving habitat conditions for game (along with other species) on existing agricultural lands (e.g., Conservation Reserve Program, pivot irrigation corner, or field fringe habitat). These enhancement efforts will be counted towards meeting the Work Plan's enhancements goals and benchmarks.

See Appendix A, Figure 6, and Appendix B-4 for additional details on PHS species, including recreation and gaming species.

Lincoln County soils are mainly well-drained loess soils found on the loess hills, either in the uplands or overlying basalt flows in the channeled scablands or other basalt side slopes (USDA 1981). In the majority of the County, soils remain at risk of wind or water erosion and mobilization under certain conditions. This is a concern in terms of soil loss from farming areas and sedimentation in streams and lakes. The wetlands are generally associated with the approximately 2,500 miles of streams in the County, as well as channeled scablands in the central region. Streams range in size from the Columbia and Spokane rivers to intermittent streams adjacent to agricultural lands.

Table 3-2
Critical Area Streams Within Lincoln County Agricultural Lands

Stream Type	Miles in County	Miles Within Agricultural Lands	% Within Agricultural Lands
Streams Total	**2,732[1]**	**2,291**	**90%**
Shorelines of the State	232	53	
Potential Fish Use	953	805	
No Fish Use	1,546	1,433	

Note:
1. There are an additional 1,785 miles of streams which have been mapped as "Unknown" in Washington Department of Natural Resources' stream mapping on private agricultural lands, many of which are topographical lows that are currently in agricultural production or ephemeral streams. These mapped stream types would need to be verified on the ground as part of farm stewardship planning to identify appropriate protections for potential stream and riparian functions and associated fish or habitat use, as applicable. See Section 3.1.2 for further discussion.

3.1.1 Wetlands

Characteristics and functions overview: Wetlands can help reduce siltation; provide filtration and produce cleaner water; retain water to reduce flooding and erosion and support base flows; and provide wildlife, plant, and fisheries habitats.

Intersections on agricultural lands. Wetlands are found within 1.2% of the County's total agricultural lands (Appendix A, Figure 5), which represents a majority (approximately 84%) of the wetlands found within the County.

Wetlands on Agricultural Lands	
General locations/ distribution	Mostly present along: • The southwest corner of the County around Negro Creek and in the center of the County associated with channeled scablands • Others are mainly associated with larger streams such as Crab and Wilson creeks
Intersections with agricultural lands	• Most are within rangelands, with some on dryland agricultural lands • Very little intersection with irrigated agricultural land
Characteristics	• Most are freshwater emergent wetlands

3.1.2 Habitat Conservation Areas

Characteristics and functions overview: HCAs include streams, riparian vegetation, and upland habitats (e.g., prairies and shrub-steppe; see section 3.1.3) that provide water quality, hydrology, soil, and habitat functions. HCAs provide migration corridors; breeding and reproduction area; forage, cover, and refuge space; and wintering habitat for wildlife species. Streams provide key habitat and streamside vegetation functions as a source of organic materials, habitat structures and cover, slope and streambank stabilization, and shade to help regulate water temperatures. Habitats of local importance may support sensitive species throughout their lifecycle, or are areas that are of limited availability, or high vulnerability to alteration. HCAs help improve water quality, affect hydrology, contribute to soil function, and provide a variety of habitats.

3.1.2.1 Streams and Riparian Vegetation

Intersections on agricultural lands: About 86% of the total stream miles mapped within the County are within agricultural lands (Appendix A, Figure 5). This doesn't include streams associated with Washington State's Department of Natural Resources' (DNR's) "Unknown" stream type. Field reconnaissance has confirmed that most of these unknown type streams are ephemeral topographic lows lacking the characteristics of a stream and do not constitute HCAs. These stream types would need to be verified on the ground to identify appropriate protections for potential fish life or habitat use, if any. Of the total stream miles mapped within the County, 84% are within agricultural lands (Appendix A, Figure 5). Satellite-based landcover classification indicates that 36% of the County's streams with streambed and bank characteristics and riparian vegetation are within agricultural lands.[2]

Riparian Vegetation
Riparian vegetation includes the vegetated areas along water sources (wetlands and streams) characterized by plants accustomed to soils with higher water content than adjacent areas. In Lincoln County, riparian vegetation typically consists of grasses, shrubs, and some trees. Riparian vegetation provides habitat for fish and wildlife, reduces siltation by trapping sediments, provides slope and bank stability, and helps moderate in-water temperatures by providing vegetative shade.

[2] The estimates of riparian vegetation cover were determined using the DNR stream mapping (Appendix A, Figure 5) and National Landcover Data Set (USGS 2011). The comparison is coarse (30 meters) in resolution, but accurately distinguishes the low woody riparian vegetation type from the herbaceous crops and sparse, dry, shrub-steppe land covers.

Streams and Riparian Areas on Agricultural Lands	
General locations/ distribution	**Streams:** Streams with intermittent or perennial flow are distributed across the County, primarily in channeled scablands used as range. Smaller drainages exist in the north part of the County that drain into Lake Roosevelt and the Spokane River. **Riparian vegetation:** Located along water resources and mostly within a 20-foot "ribbon of green" from ordinary high water
Intersections with agricultural lands	**Streams:** Primarily located within rangelands and dryland agricultural lands **Riparian vegetation**: Primarily located within rangelands
Characteristics	**Streams:** • The hydropower management at the Grand Coulee Dam and upstream dams results in significant fluctuations in water levels of the Lake Roosevelt pool, which can impact the quality of the riparian vegetation along the shoreline. • No anadromous fish species are present in the County due to blockage by the Grand Coulee Dam. However, many resident fish species are found in the Columbia and Spokane rivers, including rainbow trout, kokanee, and bull trout. • Crab, Wilson, and Hawk creeks support rainbow trout. Crab Creek also supports brown trout. **Riparian Vegetation:** • Primarily consists of herbaceous shrublands comprising sedge and rush species • May have higher densities of trees in riparian areas, especially in the hilly forested areas

3.1.2.2 Priority Habitats and Species

Intersections on agricultural lands: Priority Habitats and Species (PHS) areas are mapped within approximately 4% of the County's agricultural lands for species and habitat that are state-listed, candidate species, or associated with vulnerable aggregations. PHS for game and recreation species are found within 30% of agricultural lands, primarily associated with mule deer, Northwest white-tailed deer, or dusky (or blue) grouse, and these areas largely overlap with other mapped PHS areas (Appendix A, Figure 6). Priority game species are highly prevalent throughout the County, particularly on and around agricultural lands and adjacent riparian and upland habitats. See Appendix A~~,~~ Figure 6 and Appendix B-4 for a comprehensive list of PHS, including game species habitat, Washington Department of Fish and Wildlife (WDFW) has identified in the County.

Priority Habitats and Species on Agricultural Lands	
General locations/ distribution	• Consists of mostly mammal species habitat along the Columbia and Spokane rivers, as well as in the areas surrounding Lake Creek, such as deer, moose, and cougars • Waterfowl concentrations are mainly found near lakes and in the southeast corner of the County. • A large area of sandhill crane habitat is located to the north of Sprague.
Intersections with agricultural lands	• Primarily occurs within rangelands • Smaller portion occurs within dryland agricultural lands
Characteristics	• Incudes ponds, riparian habitats, and upland habitats, including 30,000 acres of shrub-steppe habitat scattered throughout the County

3.1.3 Frequently Flooded Areas

Characteristics and functions overview: FFAs protect public health and safety by providing temporary flood water storage and conveyance. They also provide riparian habitat and other wildlife benefits and can improve water quality and recharge groundwater. FFAs can affect surface and groundwater quality and hydrology (timing and magnitude of flows and alluvial aquifer recharge), improve or degrade soil health based on vegetative conditions, and contribute to riparian habitat diversity.

Intersections on agricultural lands: FFAs are found within only 2% of the County's total agricultural lands (Appendix A, Figure 10). FFAs typically overlap or are adjacent to wetlands and some HCAs. The Federal Emergency Management Agency (FEMA) occasionally works with the County to update floodplain mapping. No updates to the mapping are currently underway; any changes to the FEMA maps in the future would be reflected in this Work Plan through the adaptive management process.

Frequently Flooded Areas on Agricultural Lands	
General locations/ distribution	• FFAs occur along waterways and drainages mainly on the Crab, Negro, and Wilson creeks • They also occur in channeled scablands in the central portion of the County
Intersections with agricultural lands	• The majority of these lands occur within rangelands and dryland agricultural lands
Characteristics	• Flooding throughout the County is mainly caused by either rain-on-snow events or spring runoff (Lincoln County 2011)

3.1.4 Critical Aquifer Recharge Areas

Characteristics and functions overview: CARAs provide protections to public drinking water supplies. CARAs affect groundwater quality and hydrology through groundwater infiltration.

Intersections on agricultural lands: CARAs are found within 0.5% of the County's total agricultural lands, and these are primarily associated with wellhead protection areas mapped for the public drinking water supply (Appendix A, Figure 7). Other CARAs in the County could include sole-source aquifers and areas with moderate to high potential for aquifer recharge, although specific areas meeting these criteria have not been designated.

Lincoln County is also within the Columbia Basin Ground Water Management Area whose main goal is to protect groundwater and address groundwater issues, including declining supply and groundwater quality. Many aquifers in the County used for public drinking water supply are also experiencing declining aquifer levels. Accordingly, conservation practices that can protect water quality and recharge aquifers are desirable. As new information becomes available on CARAs in the County, this part of the Work Plan can be updated through the adaptive management activities described in Section 6.

Critical Aquifer Recharge Areas on Agricultural Lands	
General locations/ distribution	• Most wellhead protection areas are within rangeland and dryland agricultural lands close to municipal water supplies; these are concentrated around cities and towns.
Intersections with agricultural lands	• Those wellhead protection areas within incorporated cities and towns are not generally subject to VSP, but any portions extending into agricultural lands of unincorporated Lincoln County are included. Recharge areas for the basalts can occur throughout Lincoln County and other surrounding counties.
Risks associated with agriculture	• Most are located in areas where potential contaminants on the land surface, such as fuel, ~~pesticide~~pesticide, or fertilizer, could potentially infiltrate into public drinking water supplies. Agriculture practices can also affect the rates of recharge to aquifers.

3.1.5 Geologically Hazardous Areas (Erosion)

Characteristics and functions overview: This Work Plan addresses only a narrow focus for geologic hazards, related to potential wind and water erosion areas, for maintaining agricultural viability by keeping productive soils in fields used to produce crops, improve water quality, and maintain habitat. This is different from protecting inherent functions and values of other types of critical areas. Rill and inter-rill erosion potential areas are designated within the County's critical areas code (severe to very-severe water erosion potential areas). These erosion potential areas, along with wind erosion hazards, are considered in this Work Plan for soil conservation and to reduce the risk of erosion effects on other functions such as surface water quality, water infiltration into soil to improve groundwater conditions, and soil health. In the developed areas (outside of VSP), GHAs can affect

areas where constructing structures may not be suitable due to landslide, earthquake, or other geologic risks.

Intersections on agricultural lands: Severe to very-severe water erosion potential areas are designated as erosion hazard areas within the County and are found within 44% of the County's total agricultural lands (Appendix A, Figure 8). High wind erosion potential areas are found within 16% of the County's agricultural lands (Appendix A, Figure 9). Although wind erosion potential areas are not officially designated as erosion hazard areas within the County's critical areas code, they are still considered within this Work Plan because they pertain to agricultural viability. Soil health and conservation is a key contributor to agricultural viability in the County.

Managing erosion with high residue summer fallow

Erosion Hazard Areas on Agricultural Lands	
General locations/ distribution	• Severe to very-severe water erosion potential areas are distributed throughout the County, but most are found in the upland areas to the north and east. • Little wind erosion is present in the County and is concentrated mainly along the Columbia and Spokane rivers.
Intersections with agricultural lands	• The majority of severe to very-severe water erosion areas are within rangelands, with some on dryland and irrigated agricultural lands. • Soil health is a key contributor to agricultural viability in the County.
Characteristics	• County soils are generally characterized by loess, which are very deep, fertile, and highly erodible soils deposited through lake settling or wind from the post-glacial outwash. • Major wind erosion potential typically occurs during August and September on the dryland summer fallow lands.

NRCS Erosion Potential

- **Water erosion potential** is identified based on long-term climate data (precipitation), inherent soils types, onsite characteristics (slopes and length of slopes), and cropping and management practices.
- **Wind erodibility soils groups** are based on qualities such as soil texture, organic matter, moisture, and wind velocity.

3.2 Agricultural Viability Baseline Conditions

Agriculture is widely recognized as a pillar of the Washington State's and Lincoln County's economies. The VSP law is explicit that critical areas are to be protected while, "maintaining and improving the long-term viability of agriculture" (RCW 36.70A.700). Both objectives, critical areas protection and maintaining agricultural viability, have to be met in this Work Plan.

Agricultural viability in the County includes regional and individual farm elements. These are defined, respectively, as the region's ability to sustain agricultural production over time and an individual farm's ability to meet financial obligations and make a profit. Tables 3-3 and 3-4 identify agricultural viability concepts for the regional and individual farm perspectives within the County.

At the regional level, agricultural viability is the support system that helps individual farms succeed. This system also helps mitigate potential threats and supports local producers in their operations and ability to take advantage of business opportunities.

Table 3-3
Agricultural Viability – Regional Elements

Regional Elements	
Concept	**Detail**
Stable and secure agricultural land base	Land conversions to non-agricultural uses and conservation easements
	Stable water rights
Infrastructure and services	Utilities/irrigation
	Market access/transportation
Support for best farm management practices	Economically-viable solutions
	Balanced approach
Education, training, and succession planning	Apprenticeships/training
	Interconnectivity with end users
Welcoming business environment	Stable regulatory environment
	Partnership-based environmental protection
Market trends/viability	Changing livestock and commodity prices can affect the number of producers that support economy
	Value added measures to make products more marketable

Table 3-4
Agricultural Viability – Farm Elements

Farm Elements	
Concept	**Detail**
Reduce inputs	Energy (power, fuels)
	Chemicals/fertilizers
	Labor
Maintain/enhance land production capacity	Soil health
	Water systems and moisture management
	Nutrient management
	New technologies
Flexibility to respond to market conditions	Changing land in production
	Individual schedule for implementing farming practices
	Cropping choices
Incentives	Payment for measures
	Tax breaks
Managed farmland conversion	Urban development (limited)
	Maintaining resource lands
"No surprises" regulatory environment	Federal – Clean Water Act, Clean Air Act, Endangered Species Act, and others
	State and County permitting (drainage and other requirements)
Protect private property rights	Recognizing and respecting rights
Environmental variation	Rainfall, temperature, and other environmental factors can affect agricultural production and activities

At the farm level, agricultural viability rests mostly on the productivity of the land and the ability of the operator to balance input costs with sales and market pressures (Table 3-4). In the County, one of the main farm-level agricultural viability concerns is land productivity. Land production capacity can be impacted by soil erosion and soil quality (moisture and nutrient management). Maintaining and enhancing land production capacity can be addressed through conservation and land-management practices. Many conservation practices also have the dual benefit of protecting and enhancing critical areas while enhancing land production capacity. Additionally, reduction of input costs (e.g., fuel and fertilizer) can also result from these practices, and technology improvements can also help enhance production capacity.

Dryland Wheat Farming in Lincoln County

Another important aspect of agricultural viability is the importance of operating and maintaining existing conservation practices/systems to achieve long-term benefits and minimize disenrollment or discontinuation practices over time. The continued operation and maintenance of conservation practices and systems is a key component of VSP implementation. As described in this Work Plan, conservation practices have the potential to benefit multiple resources, including agricultural viability and critical areas. Maintenance of the land base in agricultural production is another agricultural viability component. Agricultural lands coming out of production due to market conditions or other factors can affect the services that support agriculture less viably if the land base and associated productions/uses are declining. Additionally, while this Work Plan only addresses agricultural viability on private lands, it is important to note that public land management and agricultural leasing should complement what VSP is striving to achieve by balancing critical areas protection with agricultural viability.

To obtain a firsthand agricultural viability perspective, several producers in the County were interviewed. Figure 3-1 includes a summary of agricultural viability strengths, weaknesses, opportunities, and threats based on responses obtained from these interviews (Harder 2017, Meilke 2017, Harding 2017). See Appendix B-5 for a summary of these interviews.

Overall, the Work Plan has been designed to support and promote the regional and individual farm agricultural viability elements listed above. The program places emphasis on systems, practices, flexibility, incentives, and other opportunities mutually beneficial to agricultural viability and critical areas protections, supporting continued agricultural viability in the County. Agricultural viability is a component of conservation activities described in Section 4 and in each of the goals provided in Section 5. Protecting and enhancing agricultural viability will continue to be a key performance measure that must be met during plan implementation.

Figure 3-1
Agricultural Viability Strengths, Weaknesses, Opportunities, and Threats

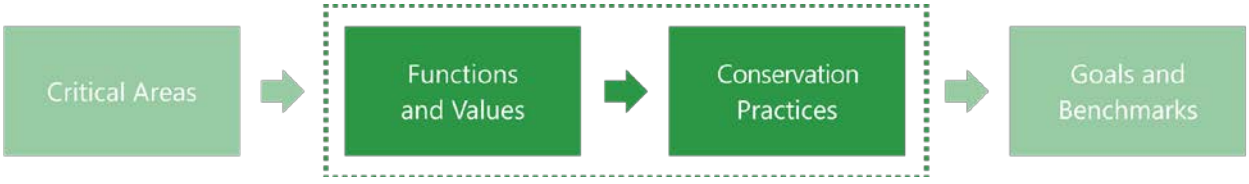
Strengths	Weaknesses
• Consistent high-quality production • Good shipping infrastructure for beef • Cost of production is relatively low • Adaptability to market conditions and regulations • Consistent weather patterns in Lincoln County	• Poor communication between agricultural community and regulators • Lack of alternative crop opportunities • Lack of young workers entering the workforce • Increased shipping costs (specifically grains) • Lack of diversity in farm enterprises
Opportunities	**Threats**
• Outreach opportunities for specialty products • New plant varieties (drought tolerance) • New technologies • New markets due to global population growth • Niche markets • Research on alternate crops/cover crops • Water availability through the Columbia Basin Project	• Water availability • Costs of weed management • Inadequate labor force • Lack of community infrastructure • Detrimental changes in government policy • International producers joining the market

4 Protection and Enhancement Strategies

Agricultural producers play a major role in the stewardship and management of private lands and resources within Washington State and Lincoln County. Agricultural producers are continually improving agricultural practices, applying new science and technology, and implementing conservation practices that reduce agricultural impacts on critical areas, as well as maintain or increase the viability of the agricultural economy. In Lincoln County, agricultural producers have adopted a variety of practices to address many of the major resource concerns within the County, including practices to reduce soil erosion, improve soil quality, and protect water quality.

This section introduces the connection between conservation practices and critical area functions and values (Figure 4-1). Additionally, this section discusses examples of conservation practices that have been implemented since 2011, highlighting the protections to critical areas and associated function and values these practices are already providing.

Figure 4-1
VSP Crosswalk – Functions and Values Connection with Conservation Practices



4.1 Examples of Conservation Practices that Protect Critical Areas

As discussed in Section 2.3.1, key critical areas functions include water quality, hydrology, soil, and habitat. Many conservation practices have been adopted within the County that provide a suite of benefits to these critical areas functions, in addition to maintaining the viability of agriculture.

Table 4-1 summarizes some examples of practices that have been applied by agricultural producers in the County under Natural Resources Conservation Service (NRCS) programs. This table helps illustrate the types of practices that have been or can be implemented to protect critical areas functions. As noted in the table, these examples also address the promotion of agricultural viability.

The LCCD is available to provide technical guidance in identifying farming practices that promote agricultural viability and further the goals of this Work Plan to protect critical area functions. Appendix C, Attachment 2 provides a more comprehensive "toolbox" of example practices that have been or could be implemented by agricultural producers within the County.

Self-Assessment Checklist
The Self-Assessment Checklist is a helpful tool to help assess how the VSP could support individual agricultural producers. It includes additional examples of conservation practices that protect and enhance critical areas and promote agricultural viability.

Residue and Tillage Management
A beneficial and cost-effective method of reducing soil erosion is through crop residue and tillage management practices such as mulch till, no-till/strip till/direct seed, and ridge till. Monitoring conducted as part of the Farmed Smart Partnership indicated the application of these practices can dramatically reduce erosion when compared to conventional practices (Pacific Northwest Direct Seed Association 2017).

Participation in Funded Programs
Federal, state, and local government and private-sector programs and opportunities are available to support producers in addressing agricultural and resource concerns. See Section 6 for additional resources and technical assistance available to agricultural producers on a voluntary basis. **Participation in a government-funded program is not required to be a VSP participant.**

Privacy Note: Self-Assessment Checklists can assist producers in developing an "individual stewardship plan" in coordination with the LCCD. "Individual stewardship plans" that a conservation district helps a producer develop are confidential and exempt from disclosure, similar to farm plans developed by conservation districts (WSCC 2017). Conservation practices information shared by producers with the LCCD will be reported for VSP at the watershed and County scales.

588 **Table 4-1**
589 **Examples of Critical Areas Conservation Practices in Lincoln County (Implemented Under NRCS)**

Example Conservation Practices	Applicability	Description	Critical Area Functions[1]		Agricultural Viability
Residue and Tillage Management	Dryland Rangeland Irrigated	Managing crop and plant residue and limiting soil disturbance (e.g., no-till or reduced-till)	Water Quality	• Reduces runoff and erosion • Reduces transport of nutrients and sediment	• Soil quality and conservation • Weed management • Yield and fertility
			Hydrology	• Increases infiltration and decreases evapotranspiration to increase water availability	
			Soil	• Reduces soil disturbance and increases cover to reduce wind and water erosion	
			Habitat	• Provides food and cover for wildlife • Increases water availability	
Pest Management	Dryland Rangeland Irrigated	Managing pesticide use to reduce runoff	Water Quality	• Decreases residual pesticides in surface and groundwater	• Soil quality • Weed management • Pollinator/beneficial organisms
			Soil	• Decreases wind and water erosion due to changes in pest management	
			Habitat	• Reduces the negative effects of pests on food quantity and quality	
Nutrient Management	Dryland Irrigated	Managing application of nutrients to minimize loss to runoff	Water Quality	• Reduces nutrients in surface and groundwater due to matching plant needs to the amount, timing, and placement of nutrients	• Soil quality • Yield and fertility • Reduced input costs
			Habitat	• Optimizes health and vigor of desired plant species • Increases food and cover for wildlife	
Prescribed Grazing	Rangeland	Managing grazing and vegetation harvest to improve plant communities and manage weeds	Water Quality	• Reduces runoff and erosion • Reduces transport of nutrients and sediment	• Soil quality and conservation • Weed management • Yield and fertility
			Hydrology	• Increases infiltration and water availability	
			Soil	• Decreases water and wind erosion due to increased vegetation cover • Reduces stream erosion through enhanced riparian vegetation	

Example Conservation Practices	Applicability	Description	Critical Area Functions[1]		Agricultural Viability
			Habitat	• Improves and maintains health and vigor of desired plant species • Restores desired habitats, such as shrub-steppe • Helps maintain adequate water availability	
Cover Crop	Dryland	Planting grasses, legumes, and forbs for seasonal cover	Water Quality	• Reduces runoff and erosion • Reduces transport of nutrients and sediment	• Soil quality and conservation • Weed management • Pollinator/beneficial organisms • Yield and fertility
			Hydrology	• Increases infiltration and decreases evapotranspiration to increase water availability	
			Soil	• Reduces soil disturbance and increases cover to reduce wind and water erosion • Maintains or increases soil health and organic matter content	
			Habitat	• Improves and maintains health and vigor of desired plant species • Provides food and cover for wildlife • Increases water availability	

Notes:

1. As defined by the Conservation Practices Physical Effects (CPPE) matrix for each practice. See Section 5.2 and Table 5-6 for additional discussion and details on how practices provide benefits to these critical area functions, based on the NRCS CPPE scores.

NRCS: Natural Resources Conservation Service

4.2 Changes Since 2011 Baseline

Since 2011, agricultural producers have implemented practices that provide protections and enhancements to critical areas and promote agricultural viability through private projects and projects funded by federal, state, and local governments. One of the key purposes of the VSP and this Work Plan is to leverage existing resources by relying on existing local planning efforts, existing private-sector activities, and government programs to achieve Work Plan goals (RCW 36.70A.700(2)(d).

The following subsections summarize documented conservation practices, implemented since 2011, that have likely protected or enhanced critical areas and improved agricultural viability over baseline conditions.

These documented practices likely represent only a subset of all the conservation practices implemented since 2011, because many agricultural producers in the County implement practices independent of government programs. Accounting for these improvements would require extensive self-reporting and documentation processes that are not yet in place. Additionally, it should be acknowledged that, during this same time, there are likely some practices that have been discontinued. For example, the re-establishment of agriculture on lands managed in conservation (in 2011) can impact habitat and other functions.

It is expected only a small percentage of lands put into conservation are removed in a given year, such as stock watering facilities and fencing, will see very little discontinuation, or relapse back to old practices. Less than 2% per year of these types of practices are anticipated to be removed or discontinued each year. There are other conservation practices (such as cover crops and prescribed grazing) where a higher rate of discontinuation (6%) is anticipated to be removed or discontinued; or more variability year

Crop Rotations

In the County, crop rotation has become a standard farming practice that addresses resource concerns and promotes agricultural viability. Crop rotation practices include managing land to grow a sequence of various crops on the same piece of land to help improve soil health, nutrients, and moisture, and reduce soils lost to erosion. For example, rotation crops such as legumes provide nitrogen-fixing services, and other crops, such as canola and brassicas, have deep roots that help channel water deeper into the soils.

Crop rotation practices vary throughout the County. In the southwest, characterized mostly by irrigated lands with low precipitation (8 to 9 inches a year), annual cropping and 2-year crop rotations are typical practices. In the central and eastern areas, which have deeper soils and higher annual precipitation (as much as 16 inches a year), 2- to 3-year crop rotation is typical.

to year in implementation is anticipated. See Table 4-2 for assumptions related to varying estimated disenrollment rates.

Table 4-2
Estimating Discontinuation of Stewardship Practices

Assumed Range of Disenrollment/ Discontinuation	Conservation Practice Category	Example Practices
None	**Easements and Infrastructure** • Permanent conservation practices	• Permanent easements • Major infrastructure

Lower
0 to 2%
	Conservation Investments
	• High barriers to entry/exit
	  - Conservation investments
	  - Maintenance cost
	  - Effectiveness
	• Increases land productivity
	• Lowers cost
		• Tillage management
		• Pest management
		• Nutrient management
		• Irrigation management
		• Stock watering facilities
		• Fencing

Higher
0 to 6%
	Conservation Actions
	• Low barriers to entry/exit
	  - Easily removed
	• Reduced land in production
	• Rotational use
	  - Market driven rotation
	• Reliance on unstable conservation funding or incentives (e.g., Conservation Reserve Program)
		• Habitat restoration
		• Prescribed grazing
		• Cover crop
		• Range planting

Programs may see a higher reduction in enrollment with the expiration of long-term government contracts, such as the Conservation Reserve Program (CRP), that temporarily enhance wildlife habitat but this will occur on agricultural lands historically cultivated and not part of designated critical areas. Measures and systems are typically put in place when lands are returned to production to conserve resources and protect potentially affected critical areas adjacent to lands no longer enrolled in CRP (see Section 4.2.3 for additional CRP information).

Direct Seed Equipment Investment

4.2.1 Natural Resources Conservation Service Conservation Practices

Since 2011, there have been 846 conservation projects implemented on approximately 740,000 acres within the County through the NRCS-funded programs on agricultural lands. The following top practices have been implemented:

- Residue and tillage management actions to protect soil health and conservation
- Stock watering practices that provide designated water sources for livestock that are located away from sensitive areas
- Nutrient and pesticide management systems to protect water quality and conserve resources

As summarized previously in Table 4-1, these practices also promote agricultural viability.

Figure 4-2 provides a summary of additional top NRCS practices implemented under the Environmental Quality Incentives Program (EQIP) and Wildlife Habitat Improvement Program (WHIP). Comprehensively, projects under the EQIP and WHIP programs totaled 623 projects applied to approximately 400,000 acres. As previously noted, these practices and programs only represent a portion of the practices being implemented, and many practices still remain unaccounted for in the County.

Figure 4-3 summarizes enhancement projects implemented under NRCS's Conservation Stewardship Program (CSP), which provides additional incentives for producers to enhance existing practices by providing funding to actively manage, maintain, and expand existing conservation practices. Project acres implemented under CSP projects are thus considered enhancements under VSP. Any reductions in CSP acres are considered reduction in enhancement acres and would not be accounted against baseline conditions. Since 2011, CSP practices have been applied to approximately 340,000 acres through 223 projects, primarily enhancing pest- and nutrient-management practices and enhancing efforts to protect water quality, soil, and habitat. Stewardship enhancements under CSP can be reviewed during implementation to assess the level of enhancements that could be accounted toward the Work Plan's goals and benchmarks.

NRCS Practices Related to Energy Management

A total of 108 energy-management projects have been administered through NRCS in Lincoln County from 2011 to 2016. These projects are intended to provide cost-effective conservation measures that reduce energy usage or increase energy efficiency in farm operations.

VSP definitions determine whether a conservation practice or project qualifies as a protection or an enhancement under the VSP. Under the VSP definitions "enhance…means to improve the processes, structure, and functions existing, as of July 22, 2011…" and "protect…means to prevent the degradation of functions and values existing as of July 22, 2011 (RCW 36.70A.703). Because most

conservation practices or projects installed since 2011 were designed to improve functions they should generally be counted as enhancement. See Section 5.2 for additional discussion on protection and enhancement benchmarks.

Figure 4-2
Top NRCS Conservation Practices Implemented from 2011 to 2016

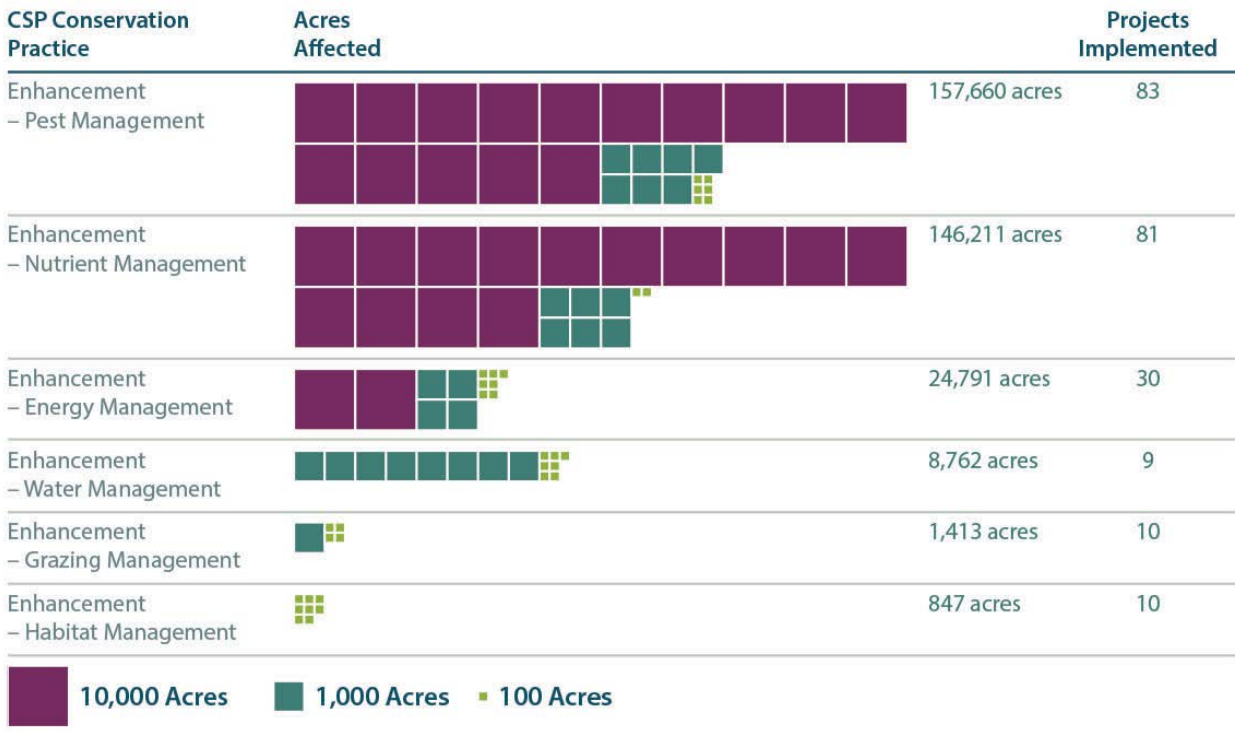
Conservation Practice[1]	Acres Affected		Projects Implemented	Applicability
Residue and Tillage Management (reduced- and no-till)		57,423 acres	100	D I R
Pest Management		36,540 acres	62	D I R
Nutrient Management		27,384 acres	49	D I
Irrigation Management[2]		20,274 acres	27	I
Prescribed Grazing		13,201 acres	15	R
Cover Crop		1,825 acres	13	D I
Access Control		1,516 acres	2	R
Habitat Management[3]		1,396 acres	59	D I R
Stock Watering[4]		N/A	44	R
Pumping Plant		N/A	37	I

1,000 Acres
100 Acres
D Dryland Crops
I Irrigated Crops
R Rangeland

Notes:
1. Includes projects implemented under the Environmental Quality Incentives Program and Wildlife Habitat Improvement Program.
2. Includes irrigation water management (18 projects) and sprinkler systems (9 projects).
3. Includes practices associated with critical area plantings (24 projects), forest stand improvement (22 projects), tree/shrub establishment (12 projects), and riparian forest buffers (1 project).
4. Includes pumping plants (37 projects), watering facilities (22 projects), livestock pipelines (15 projects), and water wells (7 projects).

NA: Not applicable
NRCS: Natural Resources Conservation Service
Source: NRCS data provided by Harold Crose with the Grant County Conservation District

Figure 4-3
NRCS Practices Implemented Under CSP from 2011 to 2016



Notes:
CSP: Conservation Stewardship Program
NRCS: Natural Resources Conservation Service

4.2.2 *Conservation District-led Projects*

Numerous other projects have also been implemented through the LCCD and are often funded directly by the LCCD or programs administered by other agencies. Major conservation practices implemented by the LCCD are identified in Table 4-3 and include practices such as grassed waterways and terracing, which can help reduce erosion and improve water quality. The LCCD also routinely works with producers through NRCS programs or other measures to develop farm conservation plans that are aimed at promoting agricultural viability and protecting and/or enhancing critical areas functions.

Grassed Waterway

Table 4-3
Conservation Practices Implemented by Local Conservation Districts from 2011 to 2016

Conservation Practice	Amount	Metric
Grass Waterway	28,140	feet
Terrace	9,000	feet
Livestock Fence	8,780	feet
Critical Area Planting	5,380	feet
Obstruction Removal	900	feet
Fuel Break	4	miles
Pasture & Hayland Seeding	376	acres
Fuels Reduction	280	acres
Tree Planting	890	number
Livestock Watering Facility	5	number
Spring Development	2	number

Critical Areas Planting

Stock Watering Facility

4.2.3 Conservation Reserve Program

Congress created the CRP in the 1985 Farm Bill as a land conservation program to address concerns over soil erosion and as a cropland retirement mechanism to help a struggling farm economy due to the large surplus of crops. The CRP is a federally funded program, managed by the Farm Service Agency (FSA), that pays a yearly rental payment in exchange for farmers removing cropland from agricultural production and establishing native plant species. Acres enrolled in CRP vary year to year, depending on the availability of federal funding.

Federal funding for land retirement programs (like CRP) has decreased in recent years, while spending on performance-based programs like the CSP, EQIP, and the Conservation Reserve Enhancement Program has increased. CRP acreage in Lincoln County decreased by approximately 5,000 acres between 2011 (164,488 acres) to 2015 (159,575 acres; USDA 2016). Much of the land coming out of CRP in the County is transitioned into other conservation practices (e.g., direct seeding and reduced tillage). Additionally, these lands are generally not designated as critical areas. Habitat benefits from CRP lands are thus considered enhancements under VSP and, if put back into production, are accounted for under baseline conditions. VSP reports will assess critical area effects (not acres enrolled) due to agricultural activities and implemented conservation practices on an aggregated watershed basis.

4.2.4 Changes in Agricultural Landcover Since 2011

Between 2011 and 2015, agricultural landcover decreased by approximately 6,300 acres based on Washington State Department of Agriculture (WSDA) agricultural landcover data (WSDA 2011, 2015). This amounts to a loss of approximately 0.5% during a 4-year period, and some of these acres could be attributed to market conditions, the natural variations that occur in the management of rangelands year to year, or variations in surveying methods applied to development landcover data.

Table 4-4 provides a summary of change analysis in agricultural landcover between 2011 and 2015. This summary table indicates that changes in agricultural landcover are occurring within rangelands and dryland, with most of the decreased agricultural landcover largely occurring in rangelands.

Table 4-4
Agricultural Landcover Change Analysis from 2011 to 2015

Year	Agricultural Landcover Acres (Private)				
	Non-agricultural	Dryland	Irrigated	Rangeland	Total in Agricultural Land
2011	19,195	778,436	47,743	477,707	1,303,866
2015	22,143	786,129	48,534	462,960	1,297,623
Change since 2011	2,948	7,693	791	-14,747	-6,263

Odessa Groundwater Replacement Project

The Odessa Groundwater Replacement Project has the potential to supply 164,000 acre-feet of surface water from Banks Lake to irrigate 70,000 acres of land currently irrigated with groundwater in the Odessa subarea, which includes portions of Lincoln, Grant, Adams, and Franklin counties. This project has the potential to affect agricultural land coverage within the County portions of the Odessa subarea, which include the area southwest of Odessa. The Office of the Columbia River and the U.S. Bureau of Reclamation are in the process of constructing the infrastructure needed to bring the water to the Columbia Basin irrigation districts (Ecology 2016b).

731

5 Goals, Benchmarks, and Adaptive Management

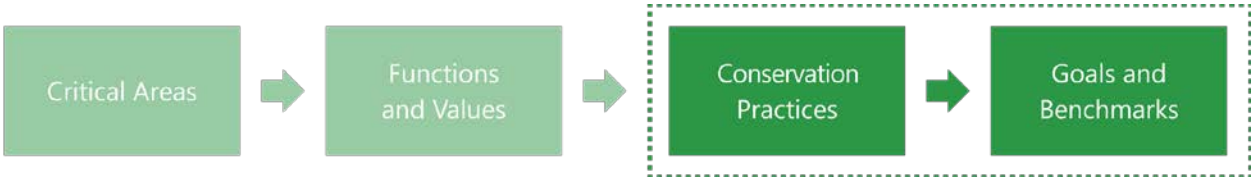
RCW 36.70A.720(1) requires this Work Plan include goals and benchmarks for the protection and enhancement of critical areas. The benchmarks must be measurable and designed to result in the protection of critical area functions and values existing on July 22, 2011. Benchmarks for enhancement of critical areas functions and values are designed to be accomplished through voluntary, incentive-based measures.

This section of the Work Plan identifies:

- **Goals** for protecting and enhancing the County's critical areas, and the four associated major critical areas functions and values: 1) water quality; 2) hydrology; 3) soil; and 4) habitat. See Section 2.3 for additional discussion on these four major functions and their relationship to the five types of critical areas.
- **Measurable benchmarks** for protection and enhancement of critical areas based on participation in key conservation practices. See Section 4 for additional discussion on the connection between conservation practices and critical areas functions. Section 5.2 further discusses the methods used to identify functional effects of conservation strategies and practices.

- **Indicators** for measurable metrics that can be analyzed over time to help assess whether anticipated protection and enhancement of critical area functions are occurring and focus technical assistance efforts where needed.
- **Monitoring and adaptive management plan** to adjust the Work Plan's benchmarks and activities based on performance results and review of indicators analyzed through monitoring efforts.

Figure 5-1
VSP Crosswalk – Stewardship Practices Connection with Goals and Benchmarks



5.1 Goals

The VSP law requires VSP Work Plans include measurable benchmarks for the protection and enhancement of critical area functions and values, along with goals for participation by agricultural operators (RCW 36.70A.720 (1)(c)) to meet these benchmarks. Additionally, Work Plans are required to incorporate applicable data and plans into development of Work Plan goals and benchmarks (RCW 36.70A.720 (1)(a)). This section identifies the following elements in support of RCW 36.70A.720 (1)(a) and (c) and Section 5.2 includes measurable benchmarks:

- **Goals:** Participation goals are defined for the protection and enhancement of the County's critical areas and key functions.
- **Agricultural viability:** The ancillary benefits to agricultural production, profitability, and sustainability are also noted for each goal, as well as when financial assistance may be necessary to offset costs associated with implementing conservation practices, including the purchase of associated equipment or other costs.
- **Objectives:** Objectives are identified for each goal to help define specific applications that further each goal. To accomplish these objectives, agricultural producers can implement the stewardship practices that are applicable to their land, agriculturally viable, and protect or enhance the critical area functions.
- **Key conservation practices:** Example conservation practices are tied to each objective; however, it is acknowledged other practices, including those administered outside of established government programs, can also help meet the objectives. Additionally, it is understood that new practices may emerge and existing practices may be phased out during implementation of this Work Plan. Selection of example stewardship practices for each

779 objective are based upon Conservation Practice Physical Effect (CPPE) scores for each practice
780 (Appendix C).
781 • **Existing plans:** Existing plans are also referenced where applicable to identified goals. See
782 Appendix D for additional discussion on review of applicable data and plans as a part of the
783 process for establishing measurable benchmarks and associated indicators. Due to the altered
784 hydrology within the County from the Columbia Basin Project, there are limited watershed or
785 subbasin management plans within Lincoln County.

786 **Table 5-1**
787 **Wetland Protection and Enhancement Goals**

Goal #1: Protect and/or enhance wetland functions

Protection and enhancement: Special emphasis on key functions provided by wetlands

Key Functions	Wetland Functions
Water Quality	• Reduces siltation by capturing sediment • Retains water to reduce erosion • Provides water filtration • Moderates water temperature
Hydrology	• Stores water to reduce flooding and contributes to base flows
Habitat	• Provides aquatic and woody vegetated habitat for fish and wildlife

Agricultural viability: This goal will be achieved while sustaining agriculture viability through:

- Ancillary benefits from implemented stewardship practices (improved soil function/soil preservation, weed management, increased pollinators/beneficial organisms, and increased fertility)
- Reducing regulation surprises associated with priority habitat degradation and species decline
- Reducing costs associated with lost ecosystem services (e.g., flood control and water filtration)
- Reducing input costs associated with nutrient, pest, and water management
- Financial incentives to offset start-up costs for new practices and infrastructure

Objectives	Key Stewardship Practices	Existing Plans
Protect and voluntarily enhance acres managed using strategies that provide direct protections to wetlands and wetland buffers	• Wetland Enhancement • Tree/Shrub Establishment • Grassed Waterway • Critical Area Planting • Stream Habitat Improvement and Management • Conservation Cover • Fencing	• WDFW's Management Recommendations for Washington's PHS: – Riparian • DNR Natural Heritage Program (rare plants and ecosystems) • LCCD Water Quality Committee best management practices

Goal #1: Protect and/or enhance wetland functions		
Protect and/or enhance acres managed using strategies that promote water quality and hydrology functions by reducing erosion and improving water storage and filtration	• Conservation Crop Rotation • Conservation Cover • Mulch Tillage • Direct Seed • Range Planting • Prescribed Grazing • Stock Watering Facilities	• Groundwater Management Area data and plans • LCCD Water Quality Committee best management practices • WRIA 43 – Watershed Plan – Detailed Implementation Plan • WRIA 53 Watershed Plan
Protect and/or enhance acres managed using strategies that promote water quality and aquatic habitat functions by reducing inputs from runoff	• Irrigation Water Management • Nutrient Management • Pest Management • Riparian Herbaceous Cover/Filter Strips • Grassed Waterways • Critical Area Planting	• -WRIA 43 – Watershed Plan – Detailed Implementation Plan

788

789 **Table 5-2**
790 **HCA Protection and Enhancement Goals**

Goal #2: Protect and/or enhance HCA functions	
Protection and enhancement: Special emphasis on key functions provided by HCAs	
Key Functions	**HCA Functions**
Water Quality	• Reduces siltation by stabilizing streambanks with riparian vegetation • Provides water filtration • Moderates water temperature by providing shade
Hydrology	• Stores and retains water to reduce flooding and support base flows in streams
Soil	• Reduces rate of erosion by providing vegetative cover
Habitat	• Provides spawning, rearing, and migratory habitat for fish, and riparian also provides refuge, nesting, and rearing areas for wildlife • Provides aquatic habitat by supplying organic inputs (e.g., leaf fall, insects, and large wood) • Supports sensitive species lifecycles
Agricultural viability: This goal will be achieved while sustaining agriculture viability through: • Reducing regulation surprises associated with priority habitat degradation and species decline • Ancillary agriculture benefits from implemented practices (soil conservation, weed management, and pollinator/beneficial organisms) • Reducing costs associated with lost ecosystem services (e.g., flood control and water filtration) • Financial incentives to offset start-up costs for new practices and infrastructure	

Goal #2: Protect and/or enhance HCA functions		
Objectives	**Key Stewardship Practices**	**Existing Plans**
Protect and/or enhance acres managed using strategies that promote habitat functions by restoring or creating new habitat structures	• Conservation Cover • Tree/shrub Establishment • Critical Area Planting • Restoration and Management of Rare and Declining Habitats • Fish and Wildlife Structure • Range Planting	• WDFW's Management Recommendations for Washington's PHS: – Greater sage-grouse – Shrub-steppe – Riparian • WRIA 43 – Watershed Plan – Detailed Implementation Plan • WRIA 53 Watershed Plan • DNR Natural Heritage Program (rare plants and ecosystems) • LCCD Water Quality Committee best management practices
Protect and/or enhance acres managed using strategies that promote habitat functions by limiting trampling of habitat	• Conservation Cover • Prescribed Grazing • Stock Watering Facilities • Access Control • Fencing	
Protect and/or enhance acres managed using strategies to promote habitat functions by preventing unintentional conversion of shrub-steppe habitat	• Irrigation Water Management • Prescribed Grazing • Watering Facilities • Fencing	
Protect and/or enhance acres managed using strategies that promote water quality, hydrology, and soil functions by reducing erosion and improving water storage and filtration	• Conservation Crop Rotation • Cover Crop • Mulch Tillage • Direct Seed • Range Planting • Prescribed Grazing	
Protect and/or enhance acres managed using strategies that promote water quality and aquatic habitat functions by reducing inputs from runoff (surface water quality)	• Irrigation Water Management • Nutrient Management • Pest Management • Grassed Waterways	• WRIA 43 – Watershed Plan – Detailed Implementation Plan
Protect and/or enhance acres managed using strategies to protect fish-bearing streams and limit shoreline and watercourse degradation and enhance shoreline areas and watercourses	• Conservation Cover • Livestock Watering Facilities • Critical Area Planting • Restoration and Management of Rare and Declining Habitats • Stream Habitat Improvement and Management • Channel Bed Stabilization • Fish and Wildlife Structure	• Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (Upper Columbia Salmon Recovery Board 2007) • Columbia River Basin Fish and Wildlife Program (Northwest Power and Conservation Council 2014) • WRIA 43 Watershed Plan

791

Table 5-3
FFA Protection and Enhancement Goals

Goal #3: Protect and/or enhance FFA functions	
Protection and enhancement: Special emphasis on key functions provided by FFAs for erosion hazards	
Key Functions	**FFA Functions**
Water Quality	• Vegetation in FFAs holds underlying soil in place and provides area for new sediment depositions to settle out • Moderates water temperature by shallow groundwater infiltration and releases from unconfined aquifers of cooler groundwater back to streams and by vegetation that can provide shade
Hydrology	• Stores and retains surface water in floodplain, reducing velocities and modifying discharge rates • Recharges groundwater that can later be returned to the stream to help maintain base flow
Soil	• Supports moisture content in soils, reduces rate of erosion, and supports plant growth that can increase organic inputs to soil
Habitat	• Provides aquatic and riparian habitats for wildlife, plants, and fish
Agricultural viability: This goal will be achieved while sustaining agriculture viability through: • Ancillary agriculture benefits from implemented practices (maximized availability of surface withdrawals for irrigation, flood control benefits/soil preservation, increased soil moisture, weed management, and pollinator/beneficial organisms) • Reducing costs associated with flood management and flood cleanup • Financial incentives to offset start-up costs for new practices and infrastructure	

Objectives	**Key Stewardship Practices**	**Existing Plans**
Protect and/or enhance FFAs directly	• Conservation Cover • Critical Area Planting • Wetland Enhancement • Riparian Forest Buffer • Stream Habitat Improvement and Management • Fencing	
Protect and/or enhance acres managed using techniques that limit soil compaction or trampling of habitat	• Mulch Tillage • Direct Seed • Prescribed Grazing • Stock Watering Facilities • Fencing	

Goal #3: Protect and/or enhance FFA functions		
Protect and/or enhance acres managed using strategies that promote water quality, hydrology, soil, and habitat functions by reducing erosion and improving water storage and filtration	• Conservation Crop Rotation • Conservation Cover • Mulch Tillage • Direct Seed • Grassed Waterway • Range Planting • Prescribed Grazing • Stock Watering Facilities	• LCCD Water Quality Committee best management practices • WRIA 43 – Watershed Plan – Detailed Implementation Plan • WRIA 53 Watershed Plan

794 **Table 5-4**
795 **CARA Protection and Enhancement Goals**

Goal #4: Protect and/or enhance CARA functions

Protection and enhancement: Special emphasis on key functions provided by CARAs

Key Functions	CARA Functions
Water Quality	• Infiltration through soil column and underlying geology improves groundwater quality
Hydrology	• Recharges groundwater resources

Agricultural viability: This goal will be achieved while sustaining agriculture viability through:

- Ancillary agriculture benefits from implemented practices (increased soil, increased soil moisture, weed management, pollinator/beneficial organisms, and increased fertility)
- Reducing input costs associated with chemicals
- Reducing costs associated with irrigation and livestock watering
- Financial incentives to offset start-up costs for new practices and infrastructure
- Hazardous materials spill containment and cleanup

Objectives	Key Stewardship Practices	Existing Plans
Protect and/or enhance acres managed to protect shallow groundwater wells by managing chemical and nutrient input controls	• Irrigation Water Management • Nutrient Management • Pest Management	• Groundwater Management Area Plans • WRIA 43 – Watershed Plan – Detailed Implementation Plan • WRIA 53 Watershed Plan
Protect and/or enhance acres managed to promote natural groundwater filtration functions	• Conservation Cover • Cover Crop • Mulch Tillage • Direct Seed • Range Planting • Prescribed Grazing	
Protect and/or enhance acres managed to promote hydrology functions by improving water conservation	• Irrigation Water Management	

796

Table 5-5
GHA (Erosion Hazard) Protection and Enhancement Goals

Goal #5: Protect and/or enhance GHA (erosion hazard) functions

Protection and enhancement: Special emphasis on key functions provided by GHAs for erosion hazards

Key Functions	GHA Functions
Water Quality	• Rate of soil erosion and associated movement of sediment deposited in surface waterbodies
Hydrology	• Rate of groundwater infiltration and rate of surface water runoff
Soil	• Rate of erosion as it relates to depth
Habitat	• Rate of erosion as it relates to sediment inputs to stream and wetland aquatic habitat

Agricultural viability: This goal will be achieved while sustaining agriculture viability through:

- Preserving land available for agriculture
- Ancillary agriculture benefits from implemented practices (increased soil moisture, weed management, and pollinator/beneficial organisms)
- Reducing costs associated with soil replenishment and flood cleanup
- Financial incentives to offset start-up costs for new practices and infrastructure

Objectives	Key Stewardship Practices	Existing Plans
Protect and/or enhance acres managed using strategies that promote water quality, hydrology, soil, and habitat functions by reducing erosion and improving water storage and filtration	• Conservation Crop Rotation • Cover Crop • Mulch Tillage • Direct Seed • Range Planting • Prescribed Grazing	• LCCD Water Quality Committee best management practices • WRIA 43 – Watershed Plan – Detailed Implementation Plan

5.2 Measurable Benchmarks

This section identifies the measurable benchmarks required by RCW 36.70A.720 (1)(e) for: 1) protection of critical area functions and value and 2) enhancement critical areas functions and values through voluntary, incentive-based measures. Protection and enhancement benchmarks are based on agricultural producer participation in key stewardship strategies and conservation practices that further the Work Plans goals identified in Section 5.1.

Establishing Baseline Monitoring per RCW 36.70A.720 (1)(i)

This section describes measurable benchmarks for participation in stewardship activities. Stewardship and conservation practices have been implemented since 2011 to improve agricultural productivity, reduce erosion, and improve soil quality.

Due to the lack of available data to establish baseline County-wide stewardship participation as of 2011, the Lincoln County Work Plan identifies average historic participation rates in stewardship and conservation practices and establishes a baseline monitoring approach to overcome estimated discontinuation of practices, as further described in this section.

5.2.1 Methods

Benchmarks are measured by tracking new and continued implementations of various conservation practices and associated stewardship on agricultural lands. Over time, the implementation of these stewardship activities will be used to demonstrate that VSP is meeting the protection goals and determine whether or not VSP is achieving the enhancement goals and benchmarks. ~~See Appendix C for initial results based on 2011 to 2016 participation data in key conservation practices.~~

The Work Plan includes two measurable benchmarks per RCW 36.70A.720 (1)(e):

- **Protection Benchmarks** (preventing the degradation of baseline functions existing July 22, 2011) – The protection benchmark must be met to continue the voluntary, non-regulatory approach under VSP. For each protection goal, participation benchmarks are also identified and are designed to provide quantifiable measures that will ensure protection of the County's critical area functions and values is being achieved.
- **Enhancement Benchmarks** (enhancements improve baseline critical area functions and values through voluntary and incentive based measures) – Meeting enhancement goals is encouraged, but not required, to continue the voluntary, non-regulatory program under VSP for protecting critical areas. At each 5-year benchmark reporting period, voluntary enhancements of critical area conditions on lands used for agricultural activities are promoted and accounted for. Benchmarks for enhancement are specific to the County and indicate voluntary measures are leading to desired improvements in critical area functions and values.

826 Enhancement also provides a measure of certainty that the VSP protection goal will be met if
827 some unforeseen, future loss of critical area function(s) and/or value(s) occurs.

828 Benchmark quantities for stewardship practice enrollment are provided in 5-year reporting
829 increments (2021 and 2026) and are based on maintaining yearly average participation rates in key
830 stewardship practices based on historic data (2011 to 2016). The methods used to establish
831 protection and enhancement benchmark values for stewardship practice participation included:

832 • **Measuring historical enrollment data** in key stewardship practices to develop an average
833 annual enrollment quantity for each practice (Table 5-7). Historical enrollment data include
834 NRCS and LCCD-led practices that were reported between 2011 and 2016.
835 • **Connecting stewardship practices with specific benchmark goals** based on the CPPE
836 scores for each practice developed by USDA (NRCS 2017). CPPE scores range between -5 and
837 +5, with positive scores denoting a beneficial effect and negative scores having an adverse
838 effect. USDA CPPE scores were averaged for the four key functions, adjusted to include
839 scoring criteria applicable to Lincoln County. See Appendix C for details on how averaged
840 CPPE scores were calculated for Lincoln County (applied national criteria and scores applicable
841 to County conditions). The CPPE scoring is an interim step in determining whether protection
842 and/or enhancement has occurred compared to the VSP 2011 baseline. Under VSP, the
843 relative changes in functions affected from a given conservation practice will be tracked, e.g.,
844 a +4 increase moving to from a -2 to +2, rather than the CPPE score of +2.

What is Conservation Practice Physical Effect (CPPE)?
The CPPE describes how Natural Resources Conservation Service practices affect human-economic environment (e.g., Agricultural Viability) and natural resources (e.g., Critical Functions). This planning tool provides a quantitative score detailing the magnitude of the practice's effect on the resource. Technical reports for each practice also include a qualitative statement on the impact of each practice on soil, water, air, plants, animals, energy and labor, capital, and risk. A summary of the practices with CPPE scores are provided in Appendix C. The implementation team will use discretion in determining which CPPE best represents the physical effects of stewardship practices on critical areas in the County based on local conditions and practices.

845

846 • **Setting anticipated discontinuation/disenrollment rate** of agriculture lands that may not
847 continue to maintain the stewardship practice past the required lifespan or following the end
848 of a contract, or for other disenrollment reasons. Disenrollment or abandonment of practices
849 can be monitored to reduce this rate further based on actual data.
850 • **Setting protection benchmarks and performance objectives** (see Table 5-7) by summing
851 the enrollment goal to maintain baseline practices for protection of critical area function by

replacing all lost functions associated with disenrollment or abandonment of practices (acres calculated by anticipated disenrollment rates; see Table 4-2).

- **Calculating change from baseline conditions** is the final step in determining the effect that stewardship practices have on critical areas functions and values. This is completed by converting the quantity of stewardship practices (based on CPPE scores) to a functions score. This acts to normalize the data and account for the differing amount of benefit provided by different practices. Initial results based on 2011 to 2016 participation data in key stewardship practices are provided in Appendix C.

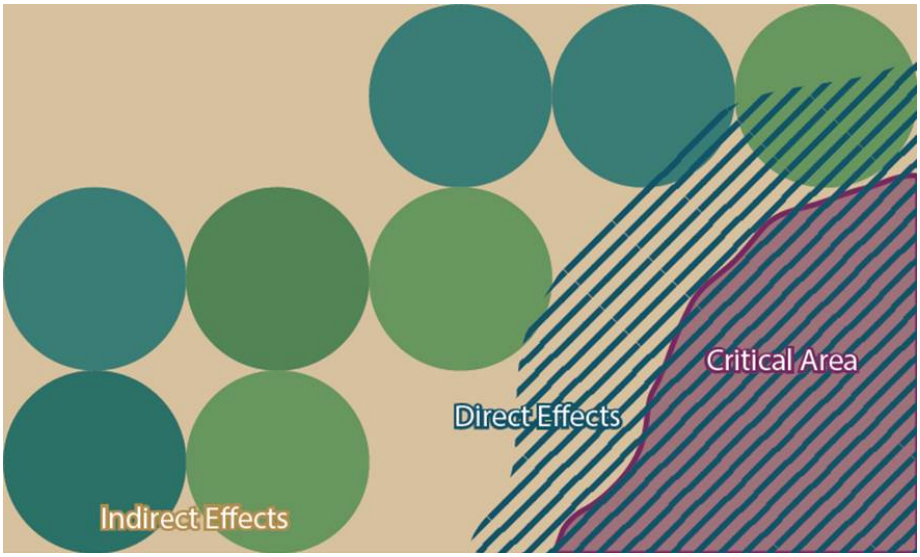
2011 Baseline Condition	=	**(Newly Enrolled Acres x Physical Effects Score)**	-	**(Disenrolled Acres x Physical Effect Score)**

- **Setting enhancement benchmarks and performance objectives** by:
  - Including project acres that have implemented between 2011 and 2016 above the protection performance objectives
  - Enhancement benchmarks and performance objectives are in addition to the protection benchmarks; therefore, estimated disenrollment acres (protection performance objectives value) have been incorporated into the enhancement performance objectives value (see Table 5-7)

Enhancement Performance Objective	=	**(Enrolled Acres x Physical Effect Score)** *based on 2011 to 2016 enrollment data*	-	**Protection Performance Objective**

Conservation practices can be implemented within or directly adjacent to a critical area (see Figure 5-2 for a conceptual representation). An example of a direct effect would include implementing wetland restoration practices within or adjacent to an existing wetland critical area. Indirect effects occur within agricultural areas that are not adjacent to or within critical areas, but still have indirect effects on resource functions.

Figure 5-2
Direct and Indirect Effects of Practices on Critical Area Functions



5.2.2 Benchmarks

Work Plan benchmarks are focused on measuring and tracking producer participation in implementing key conservation practices identified by the Work Group as having a clear benefit to one or more critical area functions and values.

Table 5-6 provides a crosswalk of the key stewardship practices identified for the Work Plan benchmarks to critical areas, function protections based on the overall averaged CPPE function effects score, and agricultural viability aims. The CPPE scoring shown in Table 5-6 indicates the most beneficial effects to functions in light blue boxes (+5), no effect (0), and the most detrimental effects to functions in dark blue (-5). As previously discussed, it's important to note that the relative changes in functions affected from a given conservation practice will be tracked in relation to baseline conditions, e.g., a +2 CPPE score for a practice will be captured as a +4 if practices are moving to from a -2 to +2. See Appendix C for additional information on methods applied for linking stewardship practices to function protections using CPPE function effects and a more comprehensive list of example conservation practices.

Table 5-7 provides a summary of protection and enhancement measurable participation benchmarks for the 5-year reporting increments (2021 and 2026). The protection performance standard for each conservation practice is based on historic records. New practices will often replace an existing practice. Trends in stewardship practices and updates to the protection performance standard that reflect the move to new stewardship practices will be included in the 2- and ~~5~~ 5-year reports.

Acreages may be adjusted as needed to reflect the higher or lower physical effect of the new practice.

Current performance based on 2011 to 2016 participation data:
As indicated in Table 5-7 (last column), total participation acres in key stewardship strategies since 2011 have overcome the anticipated reduction in acres (or other measure). Protection and enhancement performance objectives for 2021 and 2026 (participation acres) have been met based on reported acres in stewardship activities from 2011 to 2016. Additionally, the acres that have been reported in stewardship strategies and practices from 2011 to 2016 have overcome the estimated acres for discontinued practices through 2026.

The Work Plan will rely on adaptive management procedures (Section 5.4) to help assess whether protection and enhancement of critical area functions are occurring, which will be reported as described in Section 6.3.

Table 5-6
Key Conservation Practices Crosswalk to National Functions Scores, Critical Areas, and Agricultural Viability

Stewardship Strategies			Protection Metrics for Critical Area Functions (by averaged CPPE Function Effects Score)[2]				Critical Area Protections					Agricultural Viability Aims
Type		Key Conservation Practices[1]	Water Quality	Hydrology	Habitat	Soil	WET	HCA	CARA	GHA	FFA	
Indirect Intersects	Residue and Tillage Management	• Reduced Till • No Till/Direct Seed • Mulch Till	■	■	■	■ ■	●	●		●		- Protect against erosion risk - Protect soil health - Reduce invasive and nuisance species - Promote yield and fertility
	Pest Management	• Integrated Pest Management o Chemical, biological, or a combination o Monitoring and adaptive management • Till Management[5]	■ ■ ■	■	■	■ ■	●	●	●	●		- Protect soil health - Reduce invasive and nuisance species - Provide pollinator species/beneficial organisms habitat
	Nutrient Management	• Nutrient Management	■ ■	■	■	■ ■	●	●	●			- Protect soil health - Reduce invasive and nuisance species - Reduce input costs
	Water Management[3]	• Irrigation Water Management • Irrigation System Sprinkler • Residue Retention (dryland)[5] • Instream Water Storage[5]	■ ■ ■	■ ■ ■	■ ■	■ ■	●	●	●	●		- Protect against erosion risk - Protect soil health - Reduce input costs
	Livestock Management[4]	• Prescribed Grazing • Stock Watering Facilities • Range Planting	■	■	■	■	●	●		●	●	- Protect against erosion risk - Protect soil health - Reduce invasive and nuisance species - Promote yield and fertility
	Soil Management	• Cover Crop • Conservation Crop Rotation • Cross Wind Ridges • Mulching • Field Border • Low Disturbance Subsoil[5] • Eco Tillage[5]	■	■ ■	■	■ ■	●	●		●		- Protect against erosion risk - Protect soil health - Reduce invasive and nuisance species - Provide pollinator species/beneficial organisms habitat - Promote yield and fertility
Direct Intersects	Habitat Management	• Conservation Cover • Critical Area Planting • Grassed Waterway • Open Channel • Fencing • Riparian Forest Buffer • Tree/Shrub Establishment • Access Control • Hedgerow Planting • Wind Break	■	■ ■	■ ■	■ ■	●	●		●	●	- Protect against erosion risk - Protect soil health - Reduce invasive and nuisance species - Provide pollinator species/beneficial organisms habitat

Notes:
1. Key practices include those practices that address resource concerns and critical areas function protections and are widely implemented, anticipated for continued application, or identified as major practice trends anticipated in the future.
2. The Natural Resources Conservation Service (NRCS) CPPE matrix was relied upon to develop average function effects scores for the key practices. See Attachment 2 in Appendix C for full suite of stewardship practices' CPPE scores.
3. Water management stewardship focuses on key practices that address on-field resource concerns and management where irrigation activities are already occurring. Conveyance infrastructure, such as irrigation pipelines, are not considered in the group of key practices.
4. Livestock management stewardship focuses on key practices that address on-field resource concerns and management. Conveyance infrastructure, such as livestock pipelines, are not considered in the group of key practices.
5. This is a non-NRCS practice and has not been included when calculating the averaged CPPE function effect score. A functional effect score will be developed for non-NRCS practices during the implementation phase. Methods for development of equivalent function effect scores are described in Appendix C.

CPPE: Conservation Practice Physical Effect

Key						
Beneficial Effects			Neutral or No Effects	Adverse Effects		
High	Medium	Slight		Slight	Moderate	High
■ ■ ■	■ ■	■	■	■	■ ■	■ ■ ■

Table 5-7
Protection and/or Enhancement Benchmarks and Objectives

Key Stewardship Strategies[1]		Historic Participation Data (2011 – 2016)		Protection Benchmarks and Performance Objectives[1, 2]			Enhancement Benchmarks and Performance Objectives[1, 2]			2011 – 2016 Enrollment Data
		Average Annual Participation in Key Practices	Estimated Yearly Reduction of Stewardship Practices	Protection Benchmark	2021 Performance Objectives[3]	2026 Performance Objectives[3]	Enhancement Benchmark	2021 Performance Objectives[3]	2026 Performance Objectives[3]	Total Acres in NRCS and CD-led Programs
Indirect Intersects	Residue and Tillage Management	11,846 acres	711 acres (6%)	No net loss of acres managed under stewardship practices No net loss of feet or units managed for protection	7,107 acres	10,661 acres	Enrolled enhancement units (e.g., acres and feet) are sufficient to offset identified agricultural degradations and maintain baseline conditions, based on: • Implemented projects from 2011 – 2016 • Excluded protection benchmarks (estimated annual reduction or discontinuation of stewardship practices since 2011 at time of reporting	28,429 acres	60,412 acres	71,073 acres
	Pest Management	6,114 acres	61 acres (1%)		611 acres	9 acres		17,730 acres	35,766 acres	36,683 acres
	Nutrient Management	4,588 acres	46 acres (1%)		459 acres	688 acres		13,305 acres	26,839 acres	27,527 acres
	Water Management[4]	3,844 acres	38 acres (1%)		384 acres	577 acres		11,148 acres	22,488 acres	23,065 acres
	Livestock Management[5]	2,660 acres 11 stock watering facilities	53acres (2%) 0.1 watering facilities (1%)		532 acres 1 watering facilities	798 acres 2 watering facilities		7,448 acres 31watering facilities	15,162 acres 62 watering facilities	15,960 acres 64 watering facilities
	Soil Management[6]	797 acres 127 feet	16 acres (2%) 3 feet (2%)		159 acres 25 feet	239 acres 38 feet		2,232 acres 355 feet	4,544 acres 722 feet	4,784 acres 760 feet
Direct Intersects	Habitat Management[7]	4,919acres 5,187 feet	98 acres (2%) 52 feet (1%)		984 acres 519 feet	1,476 acres 778 feet		13,774 acres 15,041 feet	28,040 acres 30,342 feet	29,516 acres 31,120 feet

Notes:

1. See Table 5-6 for list of key conservation practices for each management strategy, which includes those practices that address resource concerns and critical areas function protections and are widely implemented, anticipated for continued application, or identified as major practice trends anticipated in the future.
2. Measurable benchmarks are based upon the reported historic NRCS and LCCD participation data (2011-2016) in key practices (see Note 1). No net loss and enhancements will be measured based on estimated annual disenrollment rates from key practices from the 2011 baseline.
3. Performance objectives are anticipated to be adapted as new technologies and practices are applied by producers and unanticipated changes in environmental and market conditions which would be addressed through the adaptive management process. Protection benchmarks are based on estimated disenrollment rates. A more accurate estimate and understanding of which practices are discontinued can be used to modify these benchmarks.
4. Water management stewardship focuses on key practices that address on-field resource concerns and management where irrigation activities are already occurring. Conveyance infrastructure, such as irrigation pipelines contracted under NRCS (approximately 13,000 feet in 2011 – 2016) are not included in measurable benchmarks.
5. Livestock management stewardship focuses on key practices that address on-field resource concerns and management. Conveyance infrastructure, such as livestock pipelines contracted under NRCS (approximately 14,500 feet in 2011 – 2016) are not included in measurable benchmarks.
6. Performance objectives for soil management stewardship strategies includes practices measured in acres (e.g., cover crop) and practices measured in feet (i.e., field borders and windbreaks).
7. Performance objectives for habitat management stewardship strategies includes practices measured in acres (e.g., conservation cover) and practices measured in feet (i.e., hedgerow planting and fencing).

NRCS: Natural Resources Conservation Service

5.3 Indicators

Indicators are measurable metrics associated with specific environmental variables, (e.g. nitrate concentrations in a well or stream flow at a particular location). Metrics can be analyzed over time to understand longer term trends related to specific critical area functions and values. Indicator data will be reviewed at least every 5 years to help focus technical assistance efforts and assess if the anticipated protection and/or enhancement of critical area functions is occurring.

If an indicator shows a loss or gain in the baseline condition for a critical area function, it can be compared to the performance objectives for conservation practices implemented. If this analysis does not account for the change, a more targeted evaluation and analysis of the specific effects of agricultural activities can be made for the applicable parameter(s). This analysis would be used to inform if the VSP is meeting the protection standard for critical area functions within agricultural areas and the degree to which non-agricultural factors are influencing one or more indicators.

Indicators affected by both agricultural and non-agricultural factors will generally not be used for purposes of informing whether protection of baseline conditions is being achieved or goals and benchmarks are being met due to the cost and difficulty involved in separating agricultural effects from non-agricultural effects. Such indicators may however be used to identify resource trends and focus enhancement efforts on high priority areas.

The following indicators relate to the four major critical area functions; monitoring of these indicators ~~are~~ is summarized in Table 5-8:

- **Water quality indicators**
  - **Surface water** quality indicators will include Category 4 and 5 303(d) listings, focused on parameters that potentially have an agricultural source. Category 4 includes polluted waters that do not require a Total Maximum Daily Load (TMDL), and Category 5 waters are polluted and require a TMDL or other water quality improvement project. Appendix B-6 provides a listing of these parameters found in the County in 2016, acknowledging these parameters may be updated in the future. 303(d) listings within the County can be monitored using Washington State Department of Ecology's (Ecology) Water Quality tools found online at: http://www.ecy.wa.gov/programs/wq/303d/index.html.
  - **Ground water** quality indicators will include data collected by public water drinking systems (Group A) and other well monitoring data led by the LCCD.
- **Hydrology indicators** will include tracking flow gauges through the U.S. Geological Survey (USGS) or other agencies. USGS has 3 streamflow gauges within the County on Coal, Crab, and Wilson creeks. USGS Water data is available here: https://www2.usgs.gov/water/.

- **Soil function indicators** will include USDA Natural Resources Inventory monitoring results related to erosion and soil functions and fertility. This monitoring should focus on locations within or adjacent to critical areas in relation to erosion issues, allowing for more natural erosion rates upland of critical areas. This monitoring should also help inform whether the Work Plan is achieving no increase in suitable agriculture soil loss trends overtime. Interactive data viewers at the State level are available here: https://www.nrcs.usda.gov/wps/portal/nrcs/rca/national/technical/nra/rca/ida/.
- **Habitat indicators** will include evaluation of publicly available aerial imagery available at the 5 and 10-year performance review periods, based upon adequate resources provided through the state for VSP program implementation to assess critical area resource protections (primarily HCAs and wetlands). Imagery evaluation will include a random sampling of areas[3] within the Work Plan's watershed analysis units. Analysis results will be summarized in the reporting at analysis unit and County scales. Individual parcels will not be identified, and producer privacy will be maintained in the evaluation process. PHS data available through WDFW will also be evaluated in addition to other related information that might or is expected to become available in the future, such as remote sensing through WDFW's High Resolution Change Detection program or other GIS approaches for habitat assessment, if this information is made available to Lincoln County. Additionally, ground-truthing will be needed to ensure that change detection data made available fits the scope and jurisdiction of the VSP, and that agricultural activities were actually the cause of any identified degradations. Review of PHS updates (recognizing the limitations of these information sources and the resources to update them) and other relevant information comparisons against the 2011 baseline conditions will be done in coordination with WDFW.

While not determinative of VSP success in maintaining 2011 baseline or better conditions as affected by agricultural activities and conservation practices, participation measures and monitoring indicators (Table 5-8) provide important information for evaluating the Lincoln County VSP performance and adaptive management actions described in Section 5.4.

[3] Random sample areas will include a representation of lands for VSP participants as well as other lands that may or may not have practices implemented on them, and these results will be extrapolated to the larger watershed analysis unit areas and the County, in an effort to more accurately characterize critical areas protections achieved.

Table 5-8
Critical Area Functions Monitoring Indicators

Critical Area Function	Monitoring Indicators
Water Quality	• Track turbidity relative to baseline 2011 levels • Track agriculture-related toxins or nutrients relative to baseline 2011 levels • Track dissolved oxygen/temperature relative to baseline 2011 levels • Track agriculture-related contaminants relative to baseline 2011 levels • Review data as collected by public drinking water systems (Group A) or other well monitoring data
Hydrology	• Track summer low flows of key springs and tributaries – Further evaluation of agricultural activities and potential effects on flows may be needed where non-drought flows are dropping below baseline levels at U.S. Geological Society or other gauges • Track flood damage of existing infrastructure
Soil	• Track suitable agriculture soil loss trends overtime (using long-term [10- to 15-year] soils inventory) through U.S. Department of Agriculture Natural Resources Inventory monitoring results • Track soil health measures (e.g., soil organic matter, physical, chemical, and biological parameters) beyond 2011 levels
Habitat	• Track mapped Priority Habitats and Species areas beyond 2011 areas • Track wetlands (using long-term [10 to 15 year] wetland inventory) through U.S. Department of Agriculture Natural Resources Inventory monitoring results and the National Wetland Inventory through U.S. Fish and Wildlife Service • Track habitat landcover based on publicly available aerial imagery, high resolution change detection mapping, or other GIS approaches for habitat mapping that are made available to the County

Guiding Principles for Aerial Imagery Interpretation

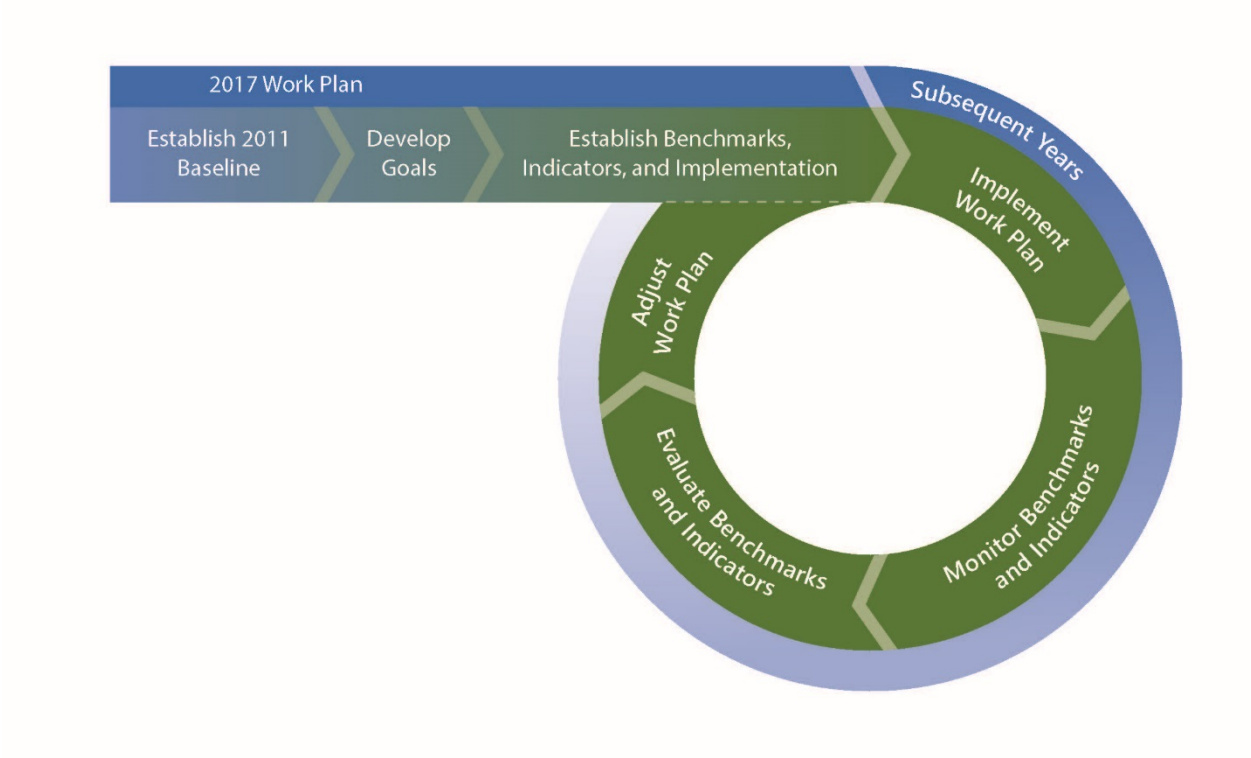
High resolution change detection or other public available aerial imagery is described as a potential monitoring tool for habitat indicators. This Work Plan includes the following Guiding Principles to ensure imagery interpretation would be reported at a watershed scale, recognize the voluntary nature of the VSP program, and the privacy concerns of volunteers and landowners:

- Monitoring activities that involve imagery should focus on publicly-available imagery.
- Monitoring should be reported at the watershed scale, not the parcel scale.
- Imagery evaluation should include a random sampling of areas within the Work Plan's watershed analysis units.
- The Work Group will determine what entities are suited to interpreting the imagery, such as Washington State University or other educational or professional bodies. The entity should not have other roles in enforcement given the voluntary, watershed-scale of the Work Plan.
- It's important to note that changes to baseline conditions outside of VSP are likely to occur due to effects from climate change, natural events (e.g., wild fires), changes in the Odessa aquifer and associated surface hydrology from future water supply improvements, or other changes outside of the scope of VSP. Regarding agricultural viability, national and international trends in the market for agricultural products are beyond the control of the Work Plan.

5.4 Adaptive Management

Adaptive management typically consists of a monitoring system to identify changes in the environment coupled with a response system to adjust the activities based on performance results and review of indicators information. The adaptive management system would be applied if the performance review in Year 5 of implementation suggests the VSP program may not be protective of critical areas functions existing in 2011. The adaptive management system for the Lincoln County VSP consists of the following five key sequential elements, as illustrated in Figure 5-3.

Figure 5-3
Adaptive Management System



1. **Assess** – Data on participation goals and the indicators previously described are compiled by LCCD. The compiled information is used to identify issues, refine objectives, and understand if benchmarks are effective in protecting or enhancing critical area functions and values.
2. **Update Benchmarks** – Based on the results of the assessment stage, updates to the protections and enhancement benchmarks could occur. These updates could represent changes to the level of participation necessary to meet a specific protection or enhancement standard. These updates could also reflect a change in the goals for a specific watershed or critical area function.
3. **Implement and Monitor** – The approved work plan is put into action, concurrently with monitoring focused on documenting the protection and enhancement of critical area functions and values. Monitoring data are collected on various indicators and used to determine if specific functions and values are being protected.
4. **Evaluate** – Participation data are evaluated relative to the protection and enhancement goals. Differences between targeted goals and results are identified and the causes for those differences are investigated, including consideration of participation measures and indicators. Goal adjustments are made as needed to maintain protection of critical area functions and values.

5. **Adjust** – Information learned in previous steps is used to adjust the participation benchmarks, conservation practices, or level of incentive for enhancement.

Changes to Baseline Conditions – Areas Outside of VSP Scope
It's important to note changes to baseline conditions outside of the scope of VSP are likely to occur due to effects from natural events such as those resulting from climate change, floods, and wild fires; the Columbia Basin Project; or other changes outside of the scope of VSP (e.g., land conversions). Additional changes to baseline may occur in the County that are the result of activities outside of the County, such as effects to watercourses that occur upstream and outside of the County limits, GMA-regulated conversions, forestry activities regulated by the Forest Practices Act, changes in eligibility for federal programs, changes in federal program funding contract conditions, technical mapping corrections, mapping errors, changes beyond a producer's control. These changes will not be counted against agriculture for VSP assessment purposes and will be documented through the reporting and adaptive management process.

The adaptive management process is iterative and would repeat cyclically at least every 5 years, as part of the implementation of the VSP. If an adjustment is identified, the Work Group would submit a written report identifying the results of the evaluation and a strategy to make the necessary adjustments to the Work Plan to the Washington State Conservation Commission (WSCC). If an adjustment is not necessary, then the report would simply state the results of the evaluation. In either case, the process of adaptive management would be applied at least every 5 years.

Monitoring and adaptive management is based on two strategies.

1. **Direct monitoring** of producer participation (Table 5-9)
    a. **Conservation acres monitoring**. Direct monitoring of stewardship participation in key conservation practices implemented is integral to the outreach strategy. Participation goals were developed based on agricultural activities, critical area functions, and the anticipated effects of implementing specific stewardship practices. During outreach and implementation, stewardship practices data will be frequently reviewed to determine if participation levels are adequate to meet the goals and benchmarks identified in Section 5.1 and 5.2.
    b. **Sample verification.** In addition to monitoring stewardship practices implemented, LCCD will also monitor a randomly selected sample of 10% of the reported projects, including those that are self-reported/funded, to verify the performance of the stewardship practices in terms of implementation/application and maintenance, relying on the CPPE framework. The relative changes in functions affected from a given stewardship practice will be tracked in relation to baseline conditions, e.g., a +2 CPPE score for a practice will be captured as a +4 if practices are moving to from a -2 to +2.

c. **Adaptive management trigger.** If at any point after the first year the annual producer participation rate drops below 120% of the annual projected level of stewardship practices implemented to meet the protection performance objectives, measures would be taken to address the situation. Participation goals and objectives with potential adaptive management actions are described in Table 5-9. Based on stewardship practices data from 2011 – 2016, the level of participation has been far exceeding those necessary to meet the protection performance objectives.

d. **Adaptive management process.** Table 5-10 includes a more detailed description of the adaptive management process for enrollment, including specific thresholds for each of the key practices.

2. **Indirect monitoring** of indicators of critical areas and their functions and values (Table 5-11)

a. **Indicators**. Indicators, identified in Section 5.3, will be used to assess whether the stewardship practices implemented under VSP is having the anticipated effect of protecting and/or enhancing critical area functions and values. If goals are met, but indicators show a negative trend in critical area functions and values, it will be important to analyze whether this is related to agriculture, and respond accordingly.

b. **VSP applicability.** Some indicators (e.g. stream temperature) may be responding to climactic changes rather than changes in agricultural practices since 2011. If any link to agriculture is determined, additional stewardship practices, higher participation goals, or increased outreach may be necessary. Because detection of long-term trends in environmental indicators is difficult, this review will be taken every 5 years as part of the VSP reporting.

c. **Process.** Table 5-11 includes a description of how environmental indicators discussed in Section 5.3 will be used to refine the goals and benchmarks of the VSP over time.

Table 5-9
Producer Participation Goal and Adaptive Management for Low Participation

Participation Goal: Promote producer participation in voluntary stewardship of agricultural lands and critical areas to meet the protection and/or enhancement benchmarks and protect critical areas functions and values at a County-wide watershed level.					
Objectives/Benchmarks	**Performance Metric/Monitoring Method**	**Identified Cause/Adaptive Management Threshold**	**Adaptive Management Action**	**Who Monitors**	**When**
Sufficient active participation by commercial and non-commercial agricultural operators (farmers and ranchers) over 10 years that achieves the protection of critical area functions and values at a County-wide watershed level[1]	• Number of acres reported in key stewardship practices • Number of VSP self-assessment checklists submitted • Sufficient producer participation necessary to meet protection and enhancement benchmarks	Key practice not consistent with agricultural viability	Identify alternative practice that provides similar function and is agriculturally viable	VSP Coordinator	Monitored every year Reported during the 2-year status reports and 5-year performance reports
		Incentives associated with key stewardship practice no longer available	Identify alternative funding or alternative practices that are more likely to be self-funded		
		Inadequate reporting of voluntary participation	Increase outreach to producers		
		Change in agricultural practices that make key practices less applicable	Develop applicable practices that provide similar functions		
		Changes in agricultural economy that make self-funded stewardship practice implementation difficult	Identify alternative funding or other incentives		
Passive participation by commercial and non-commercial agricultural operators in VSP stewardship practices is maintained or increased over 10 years on agricultural land (including but not limited to those listed in Table 5-6 and Appendix C, Attachment 2)[2]	• Mapping and aerial photo evaluation and/or rapid watershed assessment of practices in place • Random sampling of farmers and ranchers in the field by technical assistance providers with willing landowners	Decline below the annual average enrollment rate identified in Table 5-10 in key stewardship practices	Increase outreach to producers		
Technical assistance and outreach is provided to agricultural producers to encourage stewardship practices and VSP participation	• Number of outreach and education events • Number of event attendees	Decline below the baseline annual average enrollment rate identified in Table 5-10 in key stewardship practices	Increase outreach to producers		

Notes:

1. Active participation includes stewardship activities reported either through publicly-funded programs or self-reported through the VSP self-assessment checklist in coordination with the VSP Coordinator or technical assistance provider.
2. Passive participation includes un-reported stewardship activities.

Table 5-10
Adaptive Management Process for Stewardship Practices Participation

Type	Adaptive Management Objective	Protection Metric[1] (Annual)	Verification	Adaptive Management Trigger (120% of Protection Metric) (Annual)	Adaptive Management Action	Who Monitors	When
Residue and Tillage Management	Residue Management – Mulch Till	711 acres	10% verified through monitoring and visual recognition	853 acres	Outreach with producers/review approach	Conservation District	Every year
	Residue and Tillage Management – No-till/ Strip Till/ Direct Seed						
Nutrient Management	Nutrient Management	46 acres	10% verified through monitoring and visual recognition	55 acres	Outreach with producers/review approach	Conservation District	Every year
Pest Management	Pest Management	61 acres	10% verified through monitoring and visual recognition	73 acres	Outreach with producers/review approach	Conservation District	Every year
Water Management	Irrigation Water Management	38 acres	10% verified through monitoring and visual recognition	46 acres	Outreach with producers/review approach	Conservation District	Every year
	Sprinkler Systems						
Livestock Management	Prescribed Grazing	53 acres	10% verified through monitoring and visual recognition	64 acres	Outreach with producers/review approach	Conservation District	Every year
	Heavy Use Area Protection						
	Stock Watering Facilities	0 projects		0 projects			
Soil Management	Conservation Crop Rotation	16 acres	10% verified through monitoring and visual recognition	19 acres	Outreach with producers/review approach	Conservation District	Every year
	Cover Crop						
	Access Control						
	Cross Wind Ridges						
	Windbreak/Shelterbreak/Field Border	3 feet		3 feet			
Habitat Management	Conservation Cover	98 acres	10% verified through monitoring and visual recognition	118 acres	Outreach with producers/review approach	Conservation District	Every year
	Critical Area Planting						
	Upland and Wetland Wildlife Habitat Management						
	Herbaceous Weed Control						
	Tree/Shrub Establishment						
	Hedgerow Planting	52 feet		62 feet			
	Fence						

Note:
1. Metric is calculated based on annual enrollment to meet benchmark values.

Table 5-11
Adaptive Management Process for Critical Area Functions and Values Protection and Enhancement

Adaptive Management Objective	Indicator Data Source	Performance Metric	Monitoring Method	Adaptive Management Action Threshold	Adaptive Management Action	Who Monitors	When	Party Responsible for Action
Ensure stewardship strategies and practices employed with the goal of protecting or improving water quality are effective	Ecology water quality stations	Change in Category 4 and 5 303(d) listings, focused on parameters that potentially have an agricultural source	Tracking Category 4 and 5 listings through Ecology's 303(d) Water Quality tools	Significant trends indicating a decrease in baseline water quality due to agriculture	• Determine whether water quality parameters are from agriculture or non-agriculture contributors • Survey with outreach to agricultural producers owners along affected watercourse, waterbody and/or CARA to determine percentage of participation in stewardship • Identify if participation in stewardship strategies and practices is supporting goals • Identify stewardship strategies with Work Group to target for implementation to support goal	Conservation District	Every 5 years	Conservation District and participating land owners
Ensure stewardship strategies and practices employed with the goal of maintaining or improving storage capacity and groundwater recharge are effective	USGS flow gauges and public drinking water systems (Group A) or other well monitoring data	Changes in flows that are attributable to agricultural practices (as opposed to regional drought)	Tracking water level gauges through USGS flow gauges and well monitoring data	Significant trends indicating a decrease in baseline storage capacity and/or groundwater recharge due to agriculture	• Determine whether storage capacity and groundwater recharge issues are due to agriculture • Survey with outreach to agricultural producers along floodplains and within CARA to determine percentage of participation in stewardship • Identify if participation in stewardship strategies and practices is supporting goals • Identify stewardship strategies with Work Group to target for implementation to support goal			
Ensure stewardship strategies and practices employed with the goal of maintaining or improving soil functions are effective	USDA Natural Resources Inventory monitoring result	Changes in volume of soil and/or overall soil fertility relative to critical areas	Tracking soil data through USDA Natural Resources Inventory monitoring results, tracking sediment parameter within Ecology's 303(d) Water Quality tools	Significant trends indicating a decrease in baseline soil and/or soil fertility due to agriculture	• Determine whether soil issues are due to agriculture • Survey with outreach to agricultural producers to determine percentage of participation in stewardship • Identify if participation in stewardship strategies and practices is supporting goals • Identify stewardship strategies with Work Group to target for implementation to support goal			
Ensure stewardship strategies and practices employed with the goal of protecting or improving habitat are effective	WDFW Priority Habitats and Species data or other aerial and GIS based evaluation	Changes in amount of HCA and wetlands	Tracking priority habitats and species data through the WDFW Evaluating random sample areas (including a representation of lands with conservation practices documented and lands where practices are not documented) using aerial imagery and associated GIS methods	Significant trends indicating a decrease in baseline terrestrial and/or aquatic habitat due to agriculture	• Determine whether habitat issues are due to agriculture • Survey with outreach to agricultural producers property owners to determine percentage of participation in stewardship • Identify if participation in stewardship strategies and practices is supporting goals • Identify stewardship strategies with Work Group to target for implementation to support goal			

Note:
Ecology: Washington State Department of Ecology
USDA: U.S. Department of Agriculture
USGS: U.S. Geological Survey
WDFW: Washington Department of Fish and Wildlife

6 Implementation

6.1 Framework for Implementation

Work Plan implementation is expected to continue largely through established programs and organizations. As noted previously, many agricultural-based programs, activities, and efforts are already in place to protect and, in many cases, enhance critical areas and maintain agricultural viability. Significant progress has been made to these ends in recent years. This Work Plan has been designed to fit within this existing framework with supplemental efforts identified to meet state VSP requirements. These requirements include documenting 2011 critical areas baseline conditions, establishing goals and measurable benchmarks, identifying conservation activities, and establishing monitoring and adaptive management measures to track Work Plan performance in protecting critical areas and maintaining agricultural viability. The tracking timeframe for this Work Plan is the first 10 years of implementation.

Per RCW 36.70A.705, the Work Group is responsible for developing the Work Plan and overseeing its implementation. Work Plan implementation responsibilities include: agricultural producer participation and outreach; technical assistance; program performance tracking and reporting; and adaptive management. The LCCD and others can help in performing these responsibilities. The anticipated implementation budget for this Work Plan is summarized in Table 6-1, under the

assumption that State funding for VSP is continued at a level of $250,000 each biennium for the County.

Table 6-1
Implementation Budget

Task	Activities	Who	Biennium Budgets[1]
Education, Outreach, and Technical Assistance	• Conduct outreach and develop education materials • Assist producers in developing stewardship plans • Facilitate Self-Assessment Checklist reporting • Identify cost-share to leverage other conservation project funding	LCCD/ VSP Coordinator	$165,000
Monitoring, Reporting, and Adaptive Management	• Annual monitoring and tracking • Develop adaptive management as needed • Prepare 2-year status reports • Prepare 5-year progress reports	LCCD/ VSP Coordinator or contract services	$70,000[2]
Work Group Coordination	• Attend quarterly meetings • Coordinate report and adaptive management review and approvals	LCCD/ VSP Coordinator	$15,000
		Total State Budget	**$250,000**

Notes:
1. Assumes State funding for VSP is continued at a level of $250,000 each biennium for the County.
2. Costs will be less in non-reporting years to support annual monitoring and tracking efforts. The majority of budget item will support costs during the 2-year and 5-year reporting years: 2019, 2021, and 2026.

Ultimately, agricultural producers play the most integral role in VSP implementation. Success of the VSP relies on these producers to participate in the program and voluntarily implement conservation actions that help meet Work Plan goals and benchmarks for critical areas protection and agricultural viability.

6.2 Agricultural Producers Participation, and Technical Assistance and Outreach

Many producers are already implementing conservation practices that are protecting critical areas and supporting agricultural viability throughout the County, as described in Section 4. Two participation objectives have been established for Lincoln County VSP implementation:

1. Better identify and document the existing measures that have been put in place since 2011 through private-sector activity and outside of government programs.
2. Increase the level of participation among agricultural producers in implementing conservation practices.

Regarding the first objective, it is expected the measures summarized in Section 4 represent only a portion of the total measures implemented during this period. Outreach to individual landowners, as well as to private industry groups, is planned in Years 0 to 2 to better document existing practices and identify future practices that might be implemented outside of government programs. Additional outreach and coordination with the private sector, resulting from the initial outreach activities, is expected to continue through the remaining 8 years of the initial 10-year performance period.

The second participation objective is focused on increasing the number of conservation practices implemented by agricultural producers, helping to meet protection and/or enhancement performance goals outlined in Section 5. Achieving this objective includes offering technical assistance to producers with the development of individual farm stewardship plans and making them aware of available private- and public-sector financial incentives and programs. This technical assistance would also include helping estimate the expected benefits that can be realized from implementing the measures identified in individual stewardship plans, including agriculture viability benefits at the farm level. The VSP Overview and Checklist can also be used as an outreach tool, shared through a variety of methods including mailers, electronic survey, or one-on-one site visits. See Table 6-2 for additional outreach opportunities.

Results from these efforts will be tracked and documented, along with documenting any lands converted from conservation practices back to more conventional farming, so the overall net effect on protecting (and where applicable, enhancing) critical areas is characterized.

VSP success depends on producer participation, and producer participation depends on effective protection of producers' confidential business information from disclosure. According to guidance from the WSCC (WSCC 2017), statutory provisions on the confidentiality and disclosure of a farm plan also apply to a VSP "individual stewardship plan" that a conservation district helps a producer develop (unless the producer expressly permits disclosure). VSP technical assistance providers can provide more detail on applicable confidentiality and disclosure provisions for particular types of agricultural operations and conservation programs.

6.2.1 Organization Leads, Technical Assistance, and Outreach

The LCCD will lead the public-sector program participation efforts within its respective boundaries, supported by other agencies, such as WSDA, WDFW, Ecology, NRCS, and FSA, and others, with their respective programs and support from the private sector.

Technical assistance occurs in a variety of ways, including developing individual farm stewardship plans, providing advice on use of specific practices, and sharing information at forums, meetings, and other venues where conservation practices are highlighted for environmental and economic benefits.

LCCD will prepare biennial work plans that incorporate public-sector activities to be implemented to achieve VSP outreach and technical assistance objectives and identify plans for working with the private sector to capture information about practices put in place through its efforts.

Table 6-2 identifies potential VSP outreach strategies, opportunities, and forums. Table 6-3 includes a list of technical assistance providers and public-sector conservation programs that are currently available. Private-sector programs are available through existing agri-businesses and associations serving the County. Appendix D contains more detail for each program and links to the programs' webpages.

Table 6-2
VSP Outreach Opportunities

Venue	Description
Meetings	• Private-sector agricultural industry meetings • Agricultural associations • Local government (city and county)
Media	• LCCD and private-sector agricultural industry websites, newsletters, and social media sites • Lincoln County website • WSCC news and announcement webpage • FSA newsletter • Washington State University newsletter • Articles, announcements, and advertisements with local newspapers • E-mail distribution lists
Others	• Informational booths and displays at fairs and agricultural conventions • Individual outreach, consistent with LCCD policies • VSP Self-Assessment Checklist

Notes:
FSA: Farm Service Agency
LCCD: Lincoln County Conservation District
VSP: Voluntary Stewardship Program
WSCC: Washington State Conservation Commission

Table 6-3
Public Sector Conservation Programs Summary

Lead	Description	Technical Assistance	Financial Assistance	Partnership Agreement	Contractor Easement
Natural Resources Conservation Service	Provides technical and financial assistance to help agricultural producers make and maintain conservation improvements on their land. Conservation easement programs and partnerships to leverage existing conservation efforts on farm lands are also offered.	●	●	●	●
Farm Service Agency	Oversees several voluntary, conservation-related programs that work to address several agriculture-related conservation measures, including programs such as Conservation Reserve Program and Conservation Reserve Enhancement Program.		●		●
Washington State Conservation Commission	Works with conservation districts to provide voluntary, incentive-based programs for implementation of conservation practices and support through financial and technical assistance; administrative and operational oversight; program coordination; and promotion of conservation districts' activities and services.		●	●	
Washington State Department of Fish and Wildlife	Provides financial assistance for habitat projects that restore and/or preserve fish and wildlife habitat through funding opportunities such as the Aquatic Lands Enhancement Account Volunteer Cooperative Grant Program.		●		
Washington State Recreation and Conservation Office	Provides funding to protect aquatic lands and for projects aimed at achieving overall salmon recovery, including habitat projects and other activities that result in sustainable and measurable benefits for salmon and other fish species. Funding is provided through programs such as Aquatic Lands Enhancement Account and Salmon Recovery Funding Board Grant Program.		●		
Washington State Department of Ecology	Provides funding for water-quality improvement and protection projects, including programs such as the Water Quality Financial Assistance program and voluntary partnership programs such as the Farmed Smart Partnership.		●	●	
Conservation Districts	Work through voluntary, incentive-based programs to assist landowners and agricultural operators with the conservation of natural resources throughout the conservation districts, including cost-share and watershed-based partnership programs such as the Regional Conservation Partnership Program.	●	●	●	

6.3 Monitoring, Reporting, and Adaptive Management

Monitoring performance, reporting progress, and implementing adaptive management measures are part of this Work Plan. Tracking program performance and reporting includes the following tasks:

- **Two-year status reports.** Conducting a program evaluation and providing a written report on the status of the Work Plan, including accomplishments, to the County and to the WSCC within 60 days (by the end of September) after the end of each biennium. Based on a March 21, 2016, receipt of funding date, 2-year reports are due by end of December in 2018, 2020, 2022, 2024, and 2026.
- **Five-year performance reports.** Developing and providing to Washington State 5-year progress reports on Work Plan performance in meeting goals and benchmarks. Based on a March 2016 start date, 5-year progress reports would be due in 2021 and 2026.

The timelines for this implementation process are shown in Table 6-4.

Table 6-4
Timelines for Implementation Process

Category	Schedule	Roles and Responsibilities
Periodic Evaluations (2-Year Status Reports)	Finalize Work Plan in Spring 2018 (Latest due date is December 21, 2018 due date per WSCC[1])	Work Group
	2018, 2022, et seq.	Work Group
Report on Goals and Benchmarks (5-Year Performance Reports)	Funding receipt date in 2016	Work Group oversees; LCCD prepares report
	2021 and 2026	
Adaptive Management or Additional Voluntary Actions	Ongoing after 2021	Work Group oversees Work Plan adjustment recommendations to WSCC

Notes:

1. This is assuming Work Plan approval through the Technical Panel review process (December 21, 2018; 2 year and 9 months). The deadline for approval via the State Advisory Committee process is March 21, 2019 (3 years).

LCCD: Lincoln County Conservation District
Work Group: Lincoln County Voluntary Stewardship Program Work Group
Work Plan: Lincoln County Voluntary Stewardship Program Work Plan
WSCC: Washington State Conservation Commission

The 2-year status and 5-year performance reports would be developed by LCCD under the direction of the Work Group. Draft reports would be prepared and presented to the Work Group for review and comment. Comments would be addressed and edits made to the reports, which would then be approved by the Work Group, after they are satisfied that the reports are accurate and complete.

Reports would be distributed to the County, WSCC, and others by LCCD on behalf of the Work Group. The general timing for reporting will be as follows:

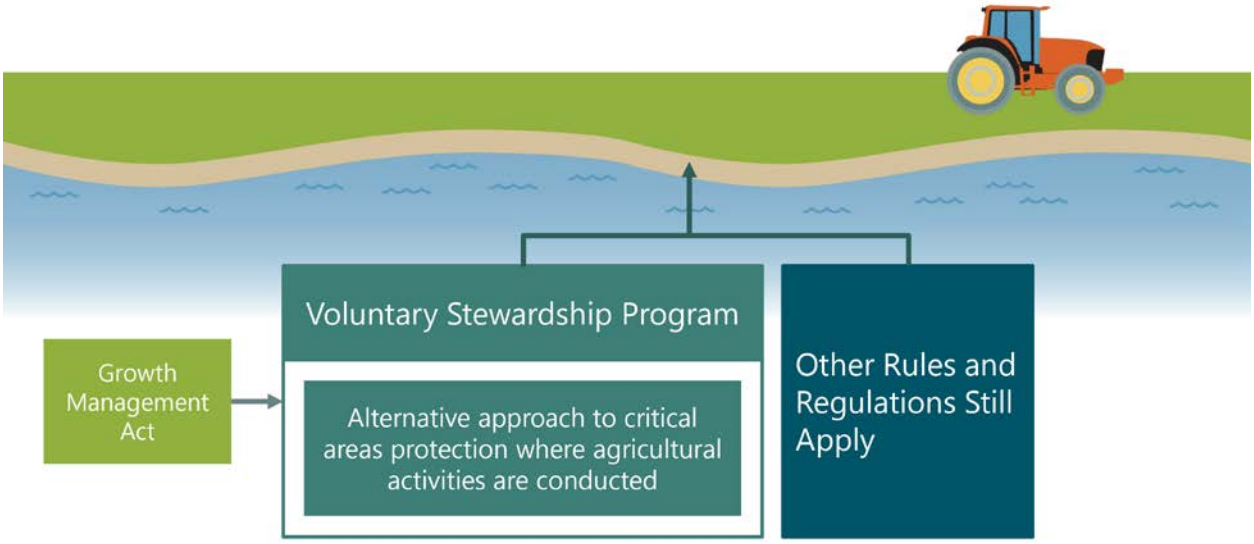
- Monitoring will focus on the measurable benchmarks described in Section 5 and will include periodic evaluations every 2 years.
- The Work Group must report no later than 5 years after receipt of funding on whether the protection and/or enhancement goals are being met or identify an adaptive management plan to meet VSP goals and benchmarks.
- The Work Group must report not later than 10 years after receipt of funding, and every 5 years thereafter, whether it has met the protection and enhancement goals and benchmarks of the Work Plan.

Work plans often need to adapt to changing conditions and observations of results that are not consistent with established goals. Adaptive management is the process for "continually improving management policies and practices by learning from the outcomes of the operational programs" (Nyberg 1999). If the Work Group determines goals have not been met, they must propose and submit an Adaptive Management Plan for achieving the goals and benchmarks. The adaptive management process is outlined in Section 5. Monitoring indicators will inform the long-term viability of the Adaptive Management Plan, based on goals for protecting critical area functions. Monitoring will focus on the measurable benchmarks and goals also described in Section 5.

6.4 Regulatory Backstop

The VSP is provided as an alternative to protecting critical areas used for agricultural activities through development regulations under the GMA. Despite its voluntary nature, it is still the intent of the VSP to improve, and not limit, "compliance with other laws designed to protect water quality and fish habitat," per RCW 36.70A.700 and 36.70A.702. Existing federal rules and regulations will still apply to agricultural activities that have the potential to affect the environment, including the federal Clean Air Act, Clean Water Act, and Endangered Species Act. State and local environmental regulations may also apply to agricultural activities with the potential to affect the environment (see Appendix D). Figure 6-1 is intended to show how the VSP relates to other rules and regulations that apply separately from critical areas protection under the GMA.

1231 **Figure 6-1**
1232 **Voluntary Stewardship Program Regulatory Underpinning**



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