RECLAMATION
Managing Water in the West

Pasco Pump Lateral 5.8 Wasteway Pipeline Project – South Columbia Basin Irrigation District

FINDING OF NO SIGNIFICANT IMPACT AND ENVIRONMENTAL ASSESSMENT

Columbia Basin Project, Washington
Pacific Northwest Region

PN FONSI 19-1

Bureau of Reclamation
Pacific Northwest Region
Columbia Cascades Area Office
Yakima, Washington

March 2019

Mission Statements

U.S. DEPARTMENT OF THE INTERIOR

PROTECTING AMERICA'S GREAT OUTDOORS AND POWERING OUR FUTURE

The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future.

MISSION OF THE BUREAU OF RECLAMATION

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Finding of No Significant Impact

Pasco Pump Lateral 5.8 Wasteway Pipeline Project – South Columbia Basin Irrigation District Columbia Basin Project, Washington

U.S. Department of the Interior
Bureau of Reclamation
Pacific Northwest Region
Columbia-Cascades Area Office
Yakima, Washington

PN-FONSI 19-1

PN-EA 19-1

Introduction

The U.S. Department of the Interior, Bureau of Reclamation has prepared the *Pasco Pump Lateral (PPL) 5.8 Wasteway Pipeline Project* (Project) *Environmental Assessment* (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA evaluated a proposal by Reclamation to construct the Project while the South Columbia Basin Irrigation District (SCBID) provides operation and maintenance of the Project as part of their transferred works.

Purpose and Need for Action

Reclamation proposes to construct a new wasteway from the PPL to the Columbia River to correct shortcomings of the existing 6.0 Wasteway and avoid adverse impacts on the environment. This new wasteway would route excess irrigation water from the PPL (at mile 5.8) to a discharge point into the Columbia River.

The purpose of the Project is to address a deficiency in the PPL 6.0 Wasteway facilities, while providing a point of protection for the canal between the 4.3 Wasteway and the 6.2 Pumping Plant to evacuate emergency flows to the Columbia River and ensure the long-term viability of the PPL and operational flexibility of the PPL system.

The Project is needed to evacuate excess water when other facilities on the lateral, namely pumping stations, shutdown operation. This causes a sudden buildup of excess water in the PPL that must be evacuated to decrease the chance of canal failure when pump stations shut down. When irrigation water is released into the existing 6.0 Wasteway under emergency canal evacuation conditions, it can be at a rate of 88 cubic feet per second (cfs), which is over and above the capabilities of the feature. Water releases of that volume can cause environmental impacts including flooding and rapid erosion on adjacent private property.

Alternatives considered must be technically feasible and involve willing sellers if additional real estate is necessary.

Components of the Proposed Action Alternative include the following:

- Private property acquisition by Reclamation
- A direct discharge point into the Columbia River
- Cessation of flow into the inadequate, present 6.0 Wasteway that impacts private property
- Construction of a wasteway and appurtenant structures
- Permit acquisition from the U.S. Army Corps of Engineers (Corps) Regulatory and Real Estate Programs, which include a 404 Nationwide Permit 12 – Utility Line Activities and a real estate instrument, respectively.

Alternatives

The EA analyzed the No Action Alternative and the Proposed Action Alternative. These alternatives are described below.

No Action Alternative: Utilize Existing Wasteway

Under the No Action Alternative, Reclamation would not construct a new wasteway from the PPL to the Columbia River to correct shortcomings of the existing drainage system. The current, unimproved wasteway would continue to be used resulting in ongoing unsatisfactory environmental conditions and operational shortcomings including the following:

- Inundation of private property
- Erosion of private property
- Continuation of the undesired "Adams Pond"
- Increased chance of PPL failure
- Decreased operational flexibility

Proposed Action Alternative: Construct the PPL 5.8 Wasteway Pipeline

Under this alternative, Reclamation proposes to construct the PPL 5.8 Wasteway Pipeline. The new wasteway would serve as the primary point of protection for the PPL in case the following occur:

- Outages at the PPL 6.2 Pumping Plant
- Large flood-back events during water-user outages
- Mechanical or automated system failures

Construction of the wasteway pipeline would also eliminate the ongoing unsatisfactory environmental conditions identified in the No Action Alternative including the following:

- Inundation of private property
- Erosion of private property
- Continuation of the undesired "Adams Pond"
- Increased chance of PPL failure

Decision and Finding of No Significant Impact

Based upon the EA, Reclamation has determined that implementing the Proposed Action Alternative will not significantly affect the quality of the human environment. No environmental effects meet the definition of significance in context or intensity as defined at 40 CFR 1508.27; therefore, an environmental impact statement is not required for the proposed action. This finding is based on the analysis in the EA and consideration of the context and intensity as summarized below from the EA.

Context

The Project is a site-specific action directly involving a narrow strip of land approximately 60 feet wide and 1.3 miles long. The study area extends from the PPL at canal mile 5.8, westerly to the Columbia River.

Intensity

The following discussion is organized around the 10 significance criteria described in 40 CFR 1508.27. These criteria were incorporated into the resource analysis and issues considered in the EA.

1. Impacts may be both beneficial and adverse.

   The proposed action will impact resources as described in the EA and summarized below in Table 1. Best Management Practices (BMP) will be used to reduce impacts on resources and are incorporated into the design of the Proposed Action Alternative.

Table 1. Resources impacted by the proposed action

Resources	EA Section	Overall Effects
Geology and Soils Resources	3.2	Minor (negligible) short-term, temporary impacts on site geology and soil resources will result from construction. BMPs would be used to minimize impacts on soil erosion as described in Appendix A of the EA. The flume and wingwalls of the outlet structure could be beneficial in stabilizing the Columbia River shoreline in the long term.
Vegetation	3.3	Short-term impacts on riparian and inland vegetation are expected due to construction activities. Native plants and seed, as appropriate, will be used to revegetate disturbed areas. Vegetation around “Adams Pond” is expected to decrease over time with the elimination of project water.

Resources	EA Section	Overall Effects
Wildlife	3.4	Negligible negative effects to wildlife are expected by loss of nonnative, minimally used vegetation.
Cultural Resources	3.5	The signing of the Memorandum of Agreement (MOA) on March 19, 2019, resolves the adverse effect finding to the pre-Contact village of Tamántawla.
Indian Trust Assets (ITAs)	3.6	No ITAs were identified within a 25-mile radius of the Project area; therefore, there would be no impacts on ITAs from Project implementation.
Visual Resources	3.7	Temporary short-term impacts would occur because of the presence of construction equipment. A long-term, minor visual impact would occur on the lower terrace because of the slight change in road-surface elevation and the presence of the outlet structure not fully obscured by vegetation growth.
Water Quality	3.8	Implementing the Project could cause a long-term impact on "Adams Pond," as it could disappear. SCBID would be required to comply with their Irrigation System Aquatic Weed Control National Pollution Discharge Elimination System Permit and State Waste Discharge (NPDES/SWD) General Permit WA0991000 for the operation of the PPL 5.8 Wasteway Pipeline. The maximum discharge of 88 cubic feet per second for a short period will be a negligible contribution to Columbia River flow and result in insignificant increases in temperature. The Project is not expected to affect turbidity within the Project area or in the Columbia River.

Resources	EA Section	Overall Effects
Threatened and Endangered Species	3.9	Reclamation received a letter of concurrence from the National Marine Fisheries Service (NMFS), dated November 28, 2018, stating the proposed action is *not likely to adversely affect* the following: Upper Columbia River (UCR) spring-run Chinook Salmon ESU (*Oncorhynchus tshawytscha*) UCR steelhead DPS (*O. mykiss*) Middle Columbia River (MCR) steelhead DPS (*O. mykiss*) • Snake River (SR) spring/summer Chinook salmon ESU (*O. tshawytscha*) • SR Fall Chinook salmon ESU (*O. tshawytscha*) • SR sockeye ESU (*O. nerka*) • SR steelhead DPS (*O. mykiss)* The proposed action *is not likely to adversely destroy or modify* designated critical habitat within the action area. There would be *no effect* to Bull Trout, Gray Wolf, or the Yellow-billed Cuckoo or their critical habitat.
Public Safety, Access, and Transportation	3.10	Implementation of the Project may have short-term effects during construction and no long-term effects on public safety, access, and transportation.
Environmental Justice and Socioeconomics	3.11	Implementation of the proposed action will not disproportionately (unequally) affect any low-income or minority communities within the Project area.
Wetlands	3.12	There will be no impacts on wetlands along the Columbia River because of constructing the outlet structure at the shoreline of Lake Wallula. "Adams Pond" will not be self-sustaining with the elimination of irrigation water. Disappearance of a wetland because of irrigation system improvement is not regulated under Section 404 of the Clean Water Act. This alternative does not run afoul of the requirements in Executive Order 11990.

2. The degree to which the selected alternative will affect public health or safety, or a minority or low-income population.

   The proposed action will have no significant impacts on public health or safety and action will not disproportionately (unequally) affect any low-income or minority communities within the Project area; therefore, the requirements of Executive Order 12898 do not apply.

3. Unique characteristics of the geographic area.

   No parklands, prime farmlands, wild and scenic rivers, or ecologically critical areas will be affected by the proposed action.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

   The effects of the Proposed action on the quality of the human environment are not likely to be highly controversial, as defined in 43 CFR 46.30[1]. Landowners near the Project area were sent a letter, dated September 18, 2018, inviting them to participate in the Section 106 and NEPA process. To date, Reclamation has not received responses to the letter

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

   There are no predicted effects on the human environment that are considered highly uncertain or involve unique or unknown risks. SCBID operates and maintains two other wasteways associated with the PPL. Construction of the PPL 5.8 Wasteway Pipeline will not result in significant operation or maintenance changes.

6. The action will not establish a precedent for future actions with significant effects, and it will not represent a decision in principle about a future consideration.

   The action is not precedent setting. SCBID operates and maintains two other wasteways associated with the PPL.

7. Whether the proposed action is related to other actions that are individually insignificant but cumulatively significant.

   Chapter 3 of the EA analyzed the impacts on resources and the degree to which cumulatively significant impacts could occur as a result of implementing the Proposed Action Alternative. Reclamation is not aware of any past, present, or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur on geology or soil resources; vegetation; wildlife; cultural resources; ITAs; water quality; threatened and endangered species; public safety, access, and transportation; environmental justice or socioeconomics; or wetlands.

8. The degree to which the action may adversely affect sites, districts, buildings, structures, and objects listed, or eligible for listing, in the National Register of Historic Places.

   Reclamation consulted with the State Historic Preservation Officer (SHPO) of the Washington Department of Archaeology and Historic Preservation, the Confederated

[1] Controversial refers to circumstances where a substantial dispute exists as to the environmental consequences of the proposed action and does not refer to the existence of opposition to a proposed action, the effect of which is relatively undisputed (43 CFR 46.30).

Tribes of the Colville Reservation (CTCR), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation) regarding effects of the Proposed Action Alternative on cultural resources including historic properties and Indian sacred sites.

Applying the criteria of *adverse effect* in 36 CFR 800.5 resulted in Reclamation reaching a *finding of adverse effects* for the proposed Project under National Historic Preservation Act (NHPA). Construction of the 5.8 Wasteway Pipeline would result in *adverse effects* to the pre-Contact village of Tamántawla, especially in consideration of its value as a *traditional cultural property* (TCP). Because of this, Reclamation resolved the adverse effects of the undertaking through the development and implementation of a MOA executed on March 19, 2019.

The signatories on the MOA include Reclamation and the Washington SHPO; invited signatories include the CTCR, the CTUIR, and the Yakama Nation; and the Corps as a concurring party.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

   Reclamation initiated Section 7 consultation with NMFS on October 9, 2018. Reclamation concluded that the proposed action *may affect but is not likely to adversely affect* listed fish species within the action area including UCR spring-run Chinook, UCR steelhead, MCR steelhead, SR spring and summer Chinook, SR fall Chinook, SR Sockeye, and SR steelhead. Reclamation concluded that the proposed action *is not likely to adversely destroy or modify* designated critical habitat within the action area. Reclamation received a letter of concurrence from NMFS on November 28, 2018, that agreed with Reclamation's conclusions. Reclamation determined there were no effects to listed species under the jurisdiction of the U.S. Fish and Wildlife Service.

10. Whether the action threatens a violation of Federal, State, local, or Tribal law, regulation or policy imposed for the protection of the environment.

    The Proposed Action Alternative will not violate any Federal, State, local, or Tribal law, regulation, or policy imposed for the protection of the environment.

Approved:

Dawn Wiedmeier 3/19/19

Dawn A. Wiedmeier
Columbia-Cascades Area Manager
Yakima, Washington

Date

RECLAMATION
Managing Water in the West

Pasco Pump Lateral 5.8 Wasteway Pipeline Project—South Columbia Basin Irrigation District

Final Environmental Assessment

Columbia Basin Project, Washington

Pacific Northwest Region

Bureau of Reclamation
Pacific Northwest Region
Columbia Cascades Area Office
Yakima, Washington

March 2019

Mission Statements

U.S. DEPARTMENT OF THE INTERIOR

PROTECTING AMERICA'S GREAT OUTDOORS AND POWERING OUR FUTURE

The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future.

MISSION OF THE BUREAU OF RECLAMATION

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

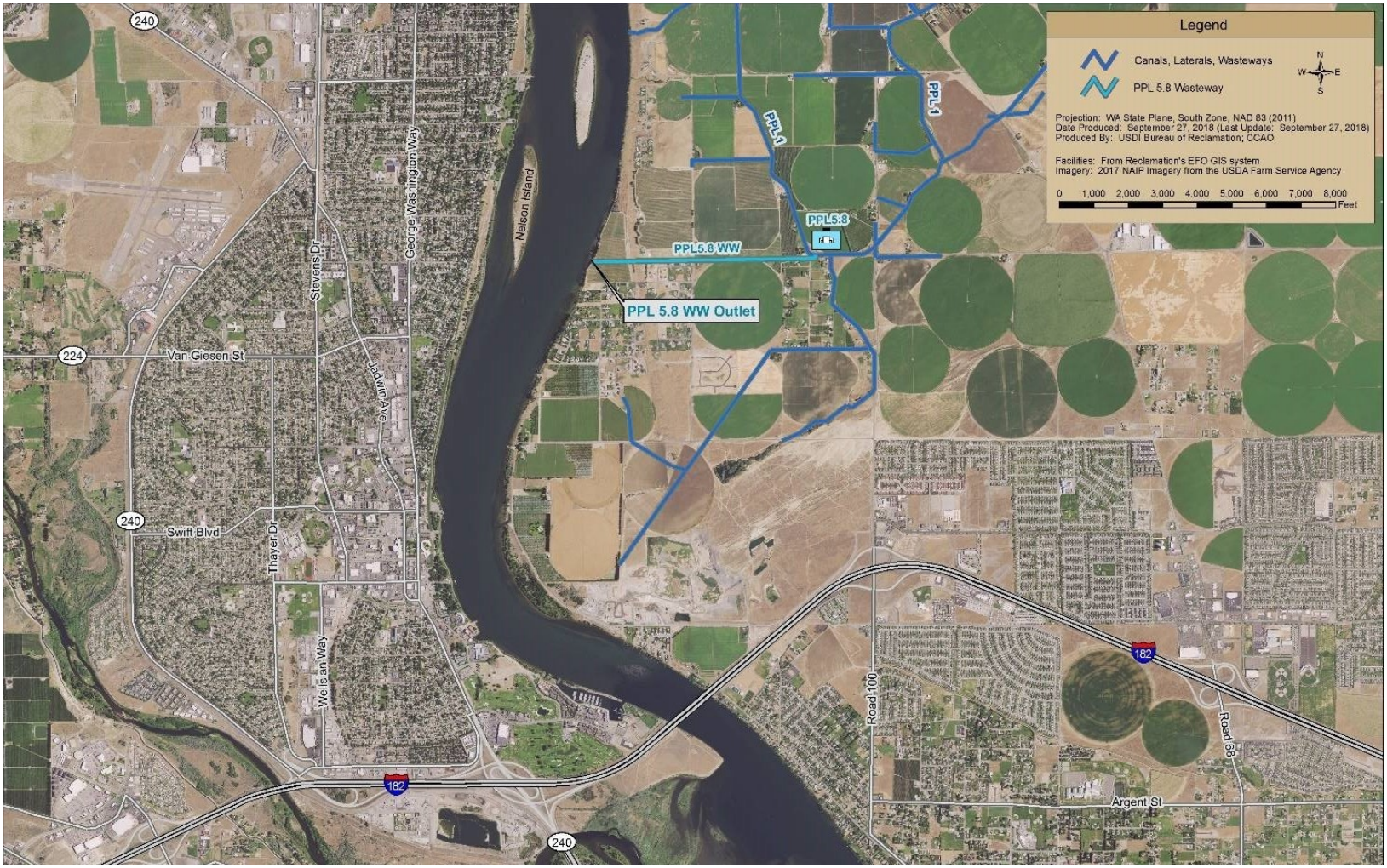

Figure 1. Overview of South Columbia Basin Irrigation District project facilities associated with the proposed Pasco Pump Lateral Wasteway Pipeline Project.

This page intentionally left blank.

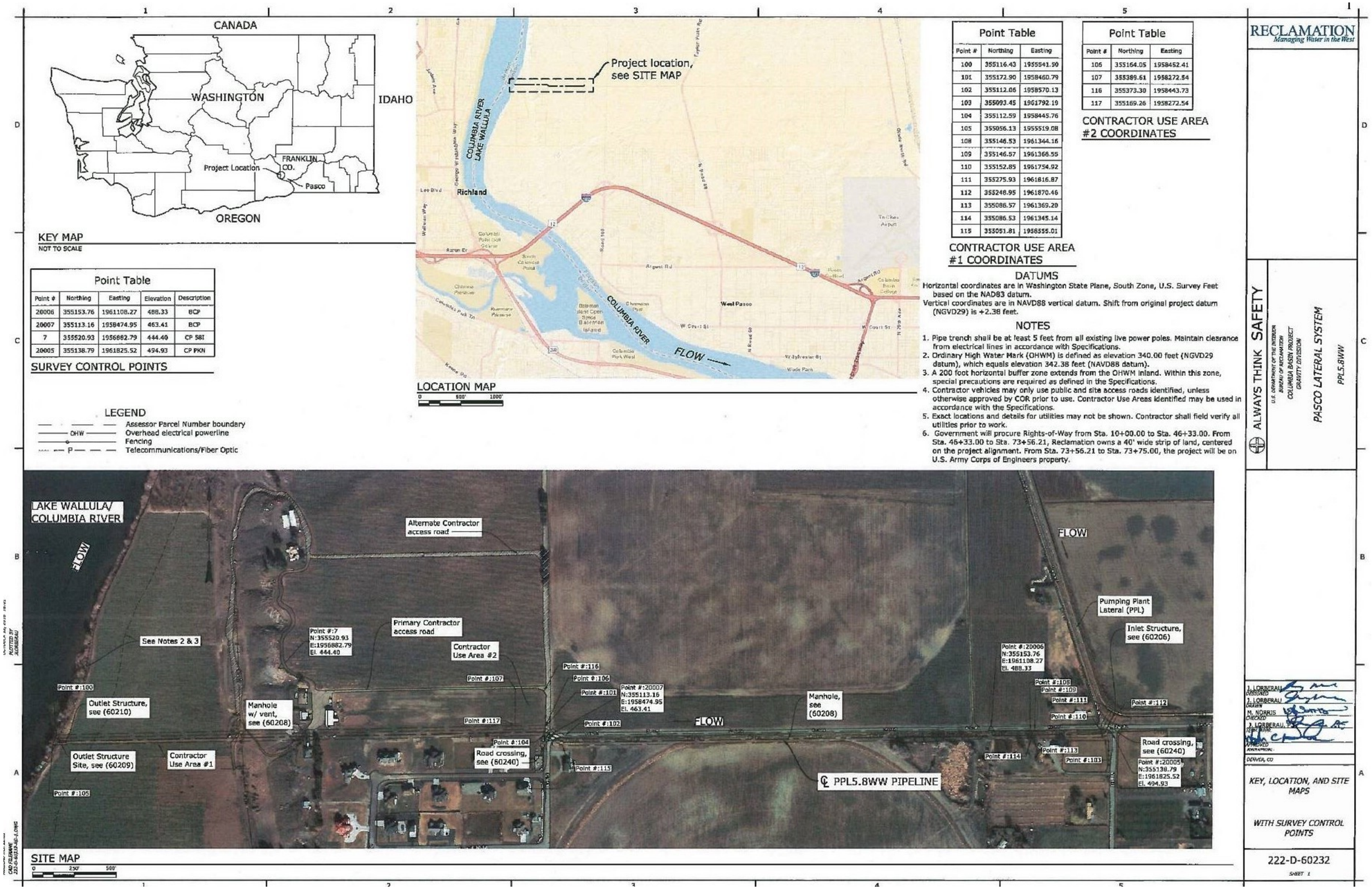

Figure 2. Overview of the proposed Pasco Pump Lateral 5.8 Wasteway Pipeline Project alignment, including construction access routes and contractor use areas

This page intentionally left blank.

Acronyms and Abbreviations

Acronym or Abbreviation	Description
ACHP	Advisory Council on Historic Preservation
APE	area of potential effect
BA	biological assessment
BMP	best management practices
cfs	cubic feet per second
CHU	critical habitat unit
CLSM	controlled low strength material
CTCR	Confederated Tribes of the Colville Reservation
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CWA	Clean Water Act
DAHP	Department of Archaeology and Historic Preservation
DCH	designated critical habitat
DO	dissolved oxygen
DOI	U.S. Department of the Interior
DPS	distinct population segments
EA	environmental assessment
Ecology	Washington State Department of Ecology
EIS	environmental impact report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESQ	Esquatzel Diversion
ESU	evolutionarily significant unit
FONSI	finding of no significant impact
GCPUD	Grant County Public Utility District
I-182	Interstate 182 Highway
ITA	Indian Trust Assets
MCR	Middle Columbia River
MOA	Memorandum of Agreement
NPDES	National Pollutant Discharge Elimination System
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRM	Northern Rocky Mountain

Acronym or Abbreviation	Description
NTU	nephelometric turbidity unit
O&M	operation and maintenance
OHWM	ordinary highwater mark
PEC	Potholes East Canal
PPL	Pasco Pump Lateral
RCW	Revised Code of Washington
Reclamation	Bureau of Reclamation
RM	river mile
SCBID	South Columbia Basin Irrigation District
SOP	Standard Operating Procedures
SHPO	State Historic Preservation Office
SR	Snake River
TCP	traditional cultural property
THPO	Tribal Historic Preservation Officer
UCR	Upper Columbia River
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
Yakama Nation	Confederated Tribes and Bands of the Yakama Nation

Table of Contents

List of Figures

List of Tables

Chapter 1 Purpose of and Need for Proposed Action

1.1 Introduction

The U.S. Department of the Interior, Bureau of Reclamation has prepared this environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the proposed Pasco Pump Lateral (PPL) 5.8[1] Wasteway[2] Pipeline Project (Project). NEPA requires an environmental analysis on any Federal action that may have a significant impact on the human environment. This EA analyzes the potential environmental effects of conducting various activities on the property. Reclamation will use this EA to finalize a decision on the proposed action alternative and determine whether to issue a finding of no significant impact (FONSI) or a notice of intent to prepare an environmental impact statement (EIS).

1.2 Purpose and Need for Action

Reclamation is proposing to construct a new wasteway from the PPL to the Columbia River to correct shortcomings of the existing 6.0 Wasteway and avoid adverse impacts on the environment. This new wasteway would route excess irrigation water from the PPL (at mile 5.8) to a discharge point into the Columbia River.

The purpose of the Project is to address a deficiency in the PPL 6.0 Wasteway facilities, while providing a point of protection for the canal between the 4.3 Wasteway and the 6.2 Pumping Plant to evacuate emergency flows to the Columbia River and ensure the long-term viability of the PPL and operational flexibility of the PPL system.

The Project is needed to evacuate excess water when other facilities on the lateral, namely pumping stations, shutdown operations. This causes a sudden buildup of excess water in the PPL that must be evacuated to decrease the chance of canal failure when pump stations shut down. When irrigation water is released into the existing 6.0 Wasteway under emergency canal evacuation conditions, it can be at a rate of 88 cubic feet per second (cfs), which is over and above the capabilities of the feature. Water releases of that volume can cause environmental impacts including flooding and rapid erosion on adjacent private property.

Alternatives considered must be technically feasible and involve willing sellers if additional real estate is necessary.

Components of the proposed action include:

- Private property acquisition by Reclamation

[1] Features on the PPL are identified by a numeric canal mile and the type of structure.

[2] A wasteway can carry excess irrigation water, often referred to as wastewater, needed to ensure water deliveries throughout the irrigation conveyance system or it can carry the excess water directly to the river. As additional clarification, irrigation wastewater is not the same as industrial wastewater.

- A direct discharge point into the Columbia River
- Cessation of flow into the inadequate, present 6.0 Wasteway that impacts private property
- Construction of a wasteway and appurtenant structures
- Permit acquisition from the U.S. Army Corps of Engineers (Corps) Regulatory and Real Estate Programs, which includes a 404 Nationwide Permit 12 – Utility Line Activities, and a real estate instrument, respectively.

1.3 Project History

The Columbia Basin Project (CBP) is one of the largest agricultural irrigation projects in the western United States, encompassing about 3,900 square miles of semiarid plateau in central Washington State and within portions of Grant, Lincoln, Adams, Franklin, and Walla Walla counties. The CBP begins at the Franklin D. Roosevelt Reservoir behind Grand Coulee Dam in the north (receiving water from Columbia River) and stretches south across the Columbia Plateau to Pasco, Washington, at the confluence of the Columbia and Snake rivers.

Reclamation operates and maintains all major CBP facilities, such as Grand Coulee Dam. The Quincy-Columbia Basin Irrigation District, East Columbia Basin Irrigation District, and South Columbia Basin Irrigation District (SCBID) operate and maintain irrigation distribution facilities within their geographic areas. The CBP is a complex irrigation project that intertwines municipal, industrial, and agricultural discharges into drainage returns that eventually flow into the Columbia River. Land use is predominantly irrigated agriculture, dryland agriculture, confined animal feeding, and rangeland operations.

Reclamation provides water to SCBID under a contract. SCBID then contracts with landowners to deliver irrigation water. SCBID operates and maintains the PPL and, in consultation with Reclamation, has the authority to make decisions on development, water delivery, payment for water, and distribution of water. Each irrigation district is a subdivision of the State government, self-governed by a board of directors.

The PPL was constructed as an open-channel water delivery system serving platted farm units in Block 1 of the SCBID in the 1940s and 1950s. The PPL is named for the Pasco Pumping Plant, where it originally received its water. The Pasco Pumping Plant was decommissioned after completion of the Potholes Canal, which then became the water source for the PPL. The main features of the PPL include the headworks, the PPL 4.3 Wasteway, the PPL 6.0 Wasteway, and the PPL 6.2 Pumping Plant.

The existing drainage system is unimproved and without facilities to direct flows. Currently, wastewater that exits the PPL 6.0 Wasteway follows the local topography and flows through private property causing various environmental impacts including flooding, erosion, and other threats to public property and irrigation facilities. In addition, current operation of the wasteway creates “Adams Pond” on private property. For decades, the landowner has made many requests for Reclamation to stop allowing wastewater to flow onto the property.

Reclamation does not have a flowage easement for using this property as an extension of the wasteway.

1.4 Project Location

The Project area is in Franklin County directly across the Columbia River from Richland, Washington, and north of Pasco in southcentral Washington State (Figure 2). The center of Pasco, Washington, is about 5 miles southeast of the Project area. The proposed 1.3-mile-long-pipeline would extend west from its point of origin near the intersection of Dent Road and Richview Drive (Figure 2). The route lies in the rights-of-way of existing roads, canals, or pipelines for most of its length along Dent Road. After about two-thirds mile, the route leaves the side of Dent Road and passes onto land that Reclamation proposes to acquire and then turns west toward the Columbia River. Before reaching the Columbia River about 1.25 miles from its start, the pipeline would pass through fee lands owned by the United States and managed by the U.S. Army Corps of Engineers (Corps), Walla Walla District, which would require a real estate instrument from the Corps' Real Estate Division.

The Corps must issue Reclamation a perpetual real estate instrument to use approximately 2,280 square feet of Corps-managed Federal land (40 feet wide by 57 feet long) located on Tract SS-3714, Section 1, Township 9 North and Range 28 East in Franklin County, Washington, McNary Lock and Dam Project, for the construction, operation and maintenance of facilities for the Project. Additionally, the Corps must issue Reclamation a 2-year temporary permit for use of adjacent Federal land (approximately 1,015 square feet) for the staging of equipment and materials, and other construction related activities.

1.5 Legal Authority

The CBP began with the allocation of funds for Grand Coulee Dam pursuant to the National Industrial Recovery Act of June 16, 1933. The CBP was specifically authorized for construction by the Rivers and Harbors Act approved August 30, 1935 (49 Stat. 1028, 1039-1040, Public Law 74-409). The Columbia Basin Project Act of March 10, 1943 (57 Stat. 14, Public Law 78-8) reauthorized the project, bringing it under the provisions of the Reclamation Project Act of 1939. The feasibility requirements of Section 9(a) of the Reclamation Project Act of 1939 for irrigation development of the CBP were met in 1945 upon the transmittal of House Document No. 172 (Joint Report on Allocation and Repayment of the Costs of the Columbia Basin Project, 79th Congress, 1st Session) to the President and Congress. Units 7, 8, and 9 of the Right Powerhouse were authorized by a finding of feasibility approved by the Secretary of the Interior on January 5, 1949. Construction of the Third Powerplant was authorized June 14, 1966 (80 Stat. 200, Public Law 89-448), as amended by the Act of September 7, 1966 (80 Stat. 714, Public Law 89-561).

Under the Revised Code of Washington (RCW) 90.40.020, "The United States shall have the right to turn into any natural or artificial water course, any water that it may have acquired the right to store, divert, or store and divert, and may again divert and reclaim said waters from said water course for irrigation purposes subject to existing rights" (RCW, 1905);

however, Reclamation never reached an agreement with the landowner to secure a flowage easement. Under the RCW, SCBID delivers water to Block 1 Unit 84 out of "Adams Pond;" however, infrastructure is in place to make water delivery without using the pond. The 6.0-0.5 pipeline was originally installed to service Unit 84; this changed as a point of convenience for the Unit 84 landowner after the "Adams Pond" formed (Kildall, 2018).

1.6 Regulatory Compliance

The following section lists the major laws, executive orders, and secretarial orders that apply to the proposed action.

1.6.1 Endangered Species Act

The Endangered Species Act (ESA) requires Federal agencies to ensure their actions do not jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat. As part of the ESA's Section 7 process, an agency must request information from the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) regarding any threatened and endangered species occurring within or near the action area. The agency must evaluate impacts on these species. If the action may affect any listed species, the agency must consult with the USFWS and/or NMFS to ensure that the Project would not jeopardize listed species or destroy or adversely modify their critical habitat.

Reclamation initiated Section 7 consultation with NMFS on October 9, 2018. Reclamation concluded that the proposed action *may affect but is not likely to adversely affect* listed fish species within the action area including upper Columbia River (UCR) spring-run Chinook, UCR steelhead, Middle Columbia River (MCR) steelhead, Snake River (SR) spring and summer Chinook, SR fall Chinook, SR Sockeye, and SR steelhead. Reclamation concluded that the proposed action *is not likely to adversely destroy or modify* designated critical habitat within the action area. Reclamation received a letter of concurrence from NMFS on November 28, 2018, that agreed with Reclamation's conclusions. Reclamation determined there were *no effects* to listed species under the USFWS' jurisdiction.

1.6.2 National Historic Preservation Act

The National Historic Preservation Act (NHPA) was enacted in 1966 and requires Federal agencies to consider project-related impacts on historic properties, which includes prehistoric and historic-period archeological sites, traditional cultural properties (TCPs), and elements of the built environment. The process for implementing the NHPA is defined in Federal regulations (36 CFR 800) and includes consultation with the State Historic Preservation Office (SHPO), Tribal Historic Preservation Office (THPO), and the Advisory Council on Historic Preservation (ACHP) about Federal findings regarding project effects.

Applying the criteria of *adverse effect* in 36 CFR 800.5 resulted in Reclamation reaching a *finding of adverse effects* for the proposed Project under NHPA. Construction of the 5.8 Wasteway Pipeline would result in *adverse effects* to the pre-Contact village of Tamántawla, especially in consideration of its value as a TCP. Because of this, Reclamation resolved the

adverse effects of the undertaking through the development and implementation of a Memorandum of Agreement (MOA), which is further explained in Section 3.5.2.2.

The signatories on the MOA include Reclamation and the Washington SHPO; invited signatories include the Confederated Tribes of the Colville Reservation (CTCR), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation); and the Corps as a concurring party.

1.6.3 Executive Order 13007: Indian Sacred Sites

Executive Order 13007, dated May 24, 1996, instructs Federal agencies to accommodate access to Indian sacred sites and to protect the physical integrity of such sites. A sacred site is a specific, discrete, and narrowly delineated location on Federal land that is identified by an Indian Tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the Tribe or authoritative representative has informed the agency of the existence of such a site. The Tribes have not identified any religious or ceremonial sites in the Project area.

1.6.4 Clean Water Act

The Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States. Activities in waters of the United States regulated under this program include water resource projects such as dams, levees, and irrigation outlets; therefore, Reclamation would need a permit from the Corps' Regulatory Division prior to implementing the proposed action.

Additionally, it is anticipated that the Corps would use this EA for actions related to their Real Estate and Regulatory programs. Reclamation would need a real estate instrument from the Corps' Walla Walla District Real Estate Division to place the proposed outlet structure within their managed lands.

1.7 Public Involvement

Landowners near the Project area were sent a letter dated September 18, 2018, inviting them to participate in the Section 106 and NEPA process. To date, Reclamation has not received responses to the letter.

The final EA and FONSI will be posted to Reclamation's website at https://www.usbr.gov/pn/programs/ea/wash/pasco/index.html.

Chapter 2 Alternatives Including the Proposed Action

2.1 Introduction

This chapter describes in detail the alternatives analyzed in this EA including alternatives considered but eliminated from further analysis along with a no action alternative. This chapter includes a description of the alternatives being considered and identifies their differences especially regarding environmental impacts.

2.2 Alternatives Considered but Eliminated

2.2.1 Alternative Development

Reclamation, SCBID, and Bratslavsky Consulting Engineers conducted a value engineering study in December 2016 (RHA, 2016). The goal of this study was to eliminate the need for the pond on the Adams' property ("Adams Pond"). The objective of the study was to identify and recommend a solution and identify liability if the Project is not constructed.

From this study, Reclamation developed the Proposed Action Alternative: Construct the Pasco Pump Lateral 5.8 Wasteway Pipeline (see Section 2.4). Other alternatives (listed in Table 1) were eliminated from further consideration as a result of the value engineering study. Reclamation determined that some of the alternatives did not meet the purpose and need; in addition, the high costs associated with some alternatives were inconsistent with our mission, "…to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public."

Table 1. Alternatives considered but eliminated and reason for their removal

Alternatives Considered	Reason for Removal
Purchasing "Adams Pond"	Would require crossing multiple private land parcels, likely requiring use of eminent domain to construct a pipeline to the Columbia River.
Construct retention reservoir	Would require use of eminent domain to acquire reservoir location and crossing multiple land parcels to construct a pipeline to the Columbia River.
Creating a new pond in a City of Pasco proposed park	Technically infeasible to accommodate a suitably sized reservoir and would require crossing multiple land parcels, likely requiring use of eminent domain, to construct a pipeline to the Columbia River.
Construct a retention reservoir within existing Reclamation-owned property.	Technically infeasible due to insufficient size of in fee land holdings.
Eliminate the wasteway	Technically infeasible due to design of existing wasteways.
Alternate pipeline route	Technically infeasible and would require crossing multiple private land parcels, likely requiring use of eminent domain.

2.3 No Action Alternative: Use Existing Wasteway

Under the No Action Alternative, Reclamation would not construct a new wasteway from the PPL to the Columbia River to correct shortcomings of the existing drainage system. The current, unimproved wasteway would continue to be used resulting in ongoing unsatisfactory environmental conditions and operational shortcomings including the following:

- Inundation of private property
- Erosion of private property
- Continuation of the undesired "Adams Pond"
- Increased chance of PPL failure
- Decreased operational flexibility

2.4 Proposed Action Alternative: Construct the Pasco Pump Lateral 5.8 Wasteway Pipeline

Under this alternative, Reclamation proposes to construct the Pasco Pump Lateral 5.8 Wasteway Pipeline. The new wasteway would serve as the primary point of protection for the PPL in case the following occur:

- Outages at the PPL 6.2 Pumping Plant
- Large flood-back events during water-user outages
- Mechanical or automated system failures

Construction of the wasteway pipeline would also eliminate the ongoing unsatisfactory environmental conditions identified in the No Action Alternative including the following:

- Inundation of private property
- Erosion of private property
- Continuation of the undesired "Adams Pond"
- Increased chance of canal failure
- Decreased operational flexibility

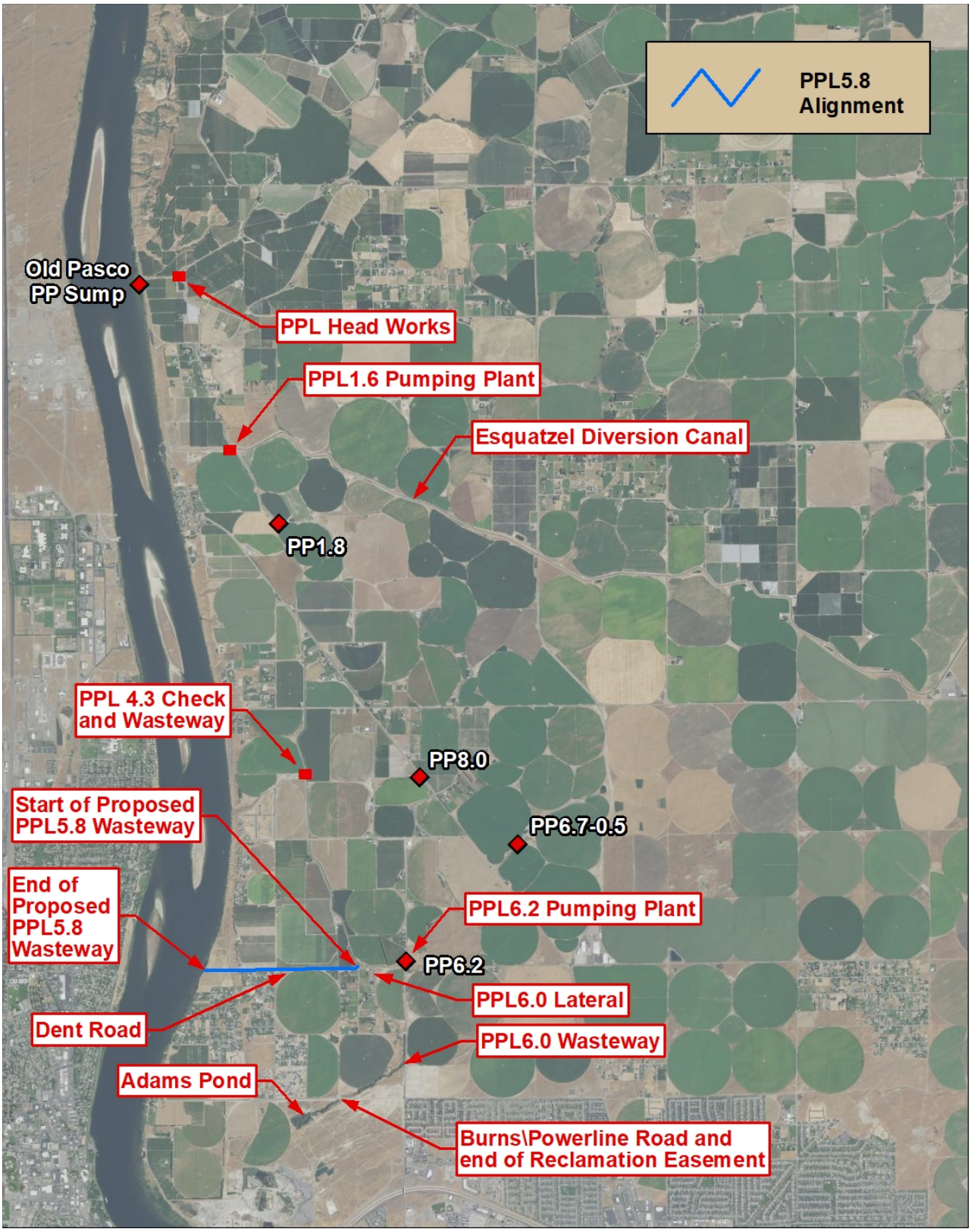

Figure 3. Key features on site map

2.4.1 Components of the 5.8 Wasteway Pipeline Project

The Project consists of the following components discussed in detail below:

- Real estate actions
- Construction activities
- Construction timing
- Operations and maintenance (O&M)
- Mitigation

Real Estate Actions

Prior to construction, Reclamation would acquire land interests from impacted landowners, which include private landowners, Franklin County, and the Corps. Land acquisitions may include the following: (1) fee land, (2) easements, and (3) temporary construction easements. Prior to acquisition, Reclamation would conduct a Phase I Environmental Site Assessment on each property to evaluate the property's environmental conditions and assess the potential liability for any contamination. All Appropriate Inquiries (AAI) must be conducted to obtain certain protections from liability under the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the Superfund Law. A Phase I Environmental Site Assessment report that follows the American Society for Testing and Materials standard, ATSM E 1527-13, provides Reclamation with this protection. If any hazardous substances are found within the in-fee or temporary land holdings proposed for acquisition, they would be removed using proper procedures prior to construction. After construction, Reclamation would conduct a Low-Intensity Rural, Residential, Crop/Agricultural Real Property Phase I Survey prior to releasing the temporary construction easements back to the underlying landowner; this process ensures the land is uncontaminated by petroleum products or other hazardous materials from the construction process.

The Corps must issue Reclamation a perpetual real estate instrument to use approximately 2,280 square feet of Corps-managed Federal land (40 feet wide and 57 feet long) on Tract SS-3714, Section 1, Township 9 North and Range 28 East in Franklin County, Washington, McNary Lock and Dam Project, for construction and O&M of Project facilities. Additionally, the Corps must issue Reclamation a 2-year temporary permit for use of adjacent Federal land (approximately 1,015 square feet) for the staging equipment and materials, and other construction related activities. Reclamation has submitted the real estate application Standard Form 299—Application for Transportation and Utility Systems and Facilities on Federal Lands—for the Corps' real estate instrument to build the 5.8 Wasteway Pipeline outlet within the Lake Wallula shoreline, which is managed by the Corps' Walla Walla District.

Construction Activities

Major construction features of the 5.8 Wasteway Pipeline Project are described below (see Figure 3).

Gated inlet structure: A reinforced concrete gated inlet structure (Figure 4) would be built through the existing PPL embankment during the non-irrigation season (November 1–February 28). Work would begin by removing the canal lining at the site. The invert of the excavation would be compacted to facilitate concrete placement. The slab, headwall, and sidewalls of the gated structure would be formed, and then concrete would be placed and allowed to cure to strength. Following structural concrete placement, the metal grating, high-density polyethylene (HDPE) pipe, gate, and controls would be installed. During this time, the PPL embankment backfill would be placed and compacted against the new structure. Finally, a 3-inch-thick unreinforced-concrete canal lining would be placed over the embankment in the PPL to replace the previously removed asphalt lining. Asphalt would be disposed of at an appropriate waste facility.

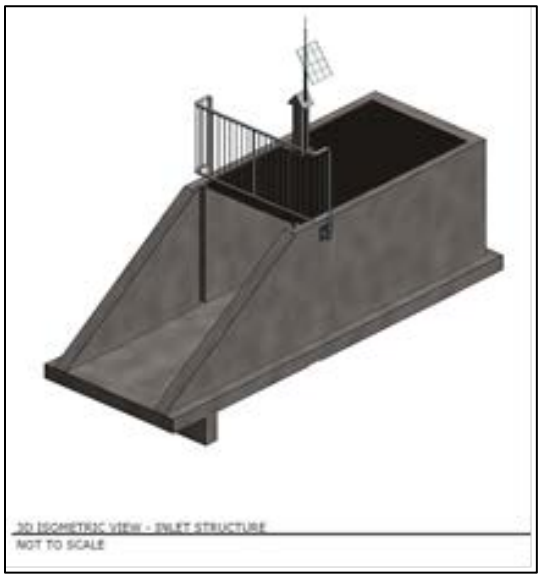

Figure 4. Design for the reinforced gated inlet structure for the Pasco Pump Lateral 5.8 Wasteway.

Baffled outlet structure: A 1.3-mile-long, 42-inch-diameter, buried HDPE pipeline would extend from the inlet structure through two road-crossings and two manholes to the baffled outlet structure and flume (Figure 5), collectively known as the outlet. The pipeline is a 42-inch-diameter HDPE pipe designed to convey up to 88 cfs from the PPL to the Columbia River.

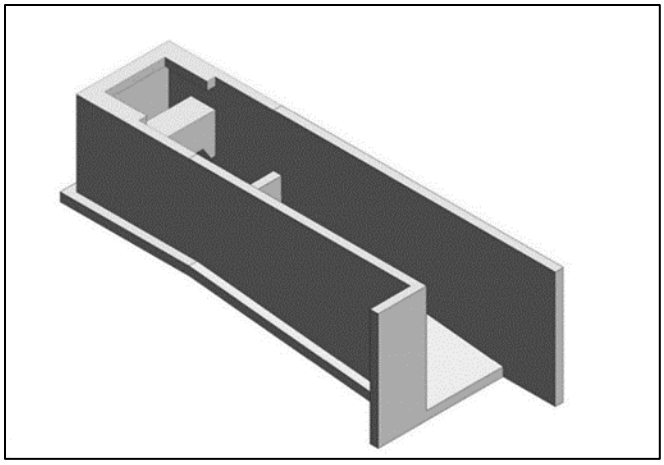

Figure 5. Pasco Pump Lateral baffled outlet and flume design.

O&M Access Road: An SCBID O&M access road is proposed north of the pipeline alignment on the upper terrace. O&M access on the lower terrace would be established in the same location as the existing farm road. These sections may be graveled; if graveled, the rock would be imported to the Project site from an established commercial quarry.

Two Paved Road Crossings: Two, paved road-crossings would be sawcut perpendicular to the travel direction per the request of Franklin County. The roads and a segment of asphalt would be removed and disposed of offsite at an appropriate waste facility. The pipe would cross the roads at an angle and buried in a standard pipe trench. A soil backfill would be placed over the trench. Finally, a roadway-base course and an asphalt-overlay course would be placed to restore the road-crossings to the original lines and grades present. Markings, signs, and other traffic control devices would be replaced upon completion of the earthwork and paving operations.

Two Concrete Manholes: Two concrete manholes would be installed along the length of the pipeline to provide O&M access. These manholes would be approximately 8 feet in diameter and installed flush with the ground surface. The downstream manhole would have an air vent installed in the tee flange, venting to the manhole airspace. A small pipe (approximately 8 inches) would connect the manhole to a nearby inground cleanout vault to provide O&M staff access to remove debris and gravel. This air vent is critical to facilitate filling and draining operations and the air movement anticipated during these flow regimes. The upstream manhole would have a tee-and-blind flange but no air vent to facilitate O&M needs. A permanent-locking manhole cover would be installed to prevent public access to the pipeline. The manholes would be backfilled like the remainder of the pipeline trench, using native soil to restore the surface to existing lines and grades.

Worksite Isolation: Construction of the outlet structure along the riverbank *would* include the following:

- Installing either a debris boom and turbidity curtain or a secured straw bale/silt fence erosion-control system

- Clearing and grubbing the river embankment within the permanent and temporary construction easement
- Placing a gravel shore-fill construction platform
- **Possible Worksite Isolation:** Construction of the outlet structure along the riverbank *may* include the following:
- Construction of a cofferdam into Lake Wallula
- A dewatering operation

Gravel and Riprap Placement. A gravel shore-fill construction platform would be placed within the isolated work area and be approximately 5 feet wide by 25 feet long to facilitate construction of the concrete outlet. Once construction of the outlet is complete, the gravel would serve as bedding material for placement of riprap. This riprap would be placed along river's edge around the outlet structure.

Reinforced Concrete Outlet: A reinforced concrete outlet structure would be built at the end of the pipeline, approximately 42.5 feet away from the riverbank to dissipate the flow energy of irrigation water evacuated down the wasteway. The structure would be perpendicular to the shoreline of the Columbia River/Lake Wallula. A metal grating would be installed atop the outlet structure to prevent fall hazards and public access.

Revegetation: Reclamation would revegetate the area with native species and return disturbed areas to preconstruction conditions or better.

Culvert Under Powerline Road: The culvert under Powerline Road (also known as Burns Road) that transports wastewater from the 6.0 Wasteway to "Adams Pond" would be plugged. The culvert south of the existing PPL 6.0 Wasteway would be plugged with an impermeable barrier to prevent water from reaching private property; therefore, project water would stop at the end of Reclamation's 6.0 Wasteway easement or at the end of the 6.0 Lateral. The culvert is north of Powerline Road about a one-half mile west of the Powerline Road and Broadmoor Boulevard intersection (Figure 6). The SCBID would plug the culvert after completion of the 5.8 Wasteway. Plugging the culvert would not require trenching or excavation

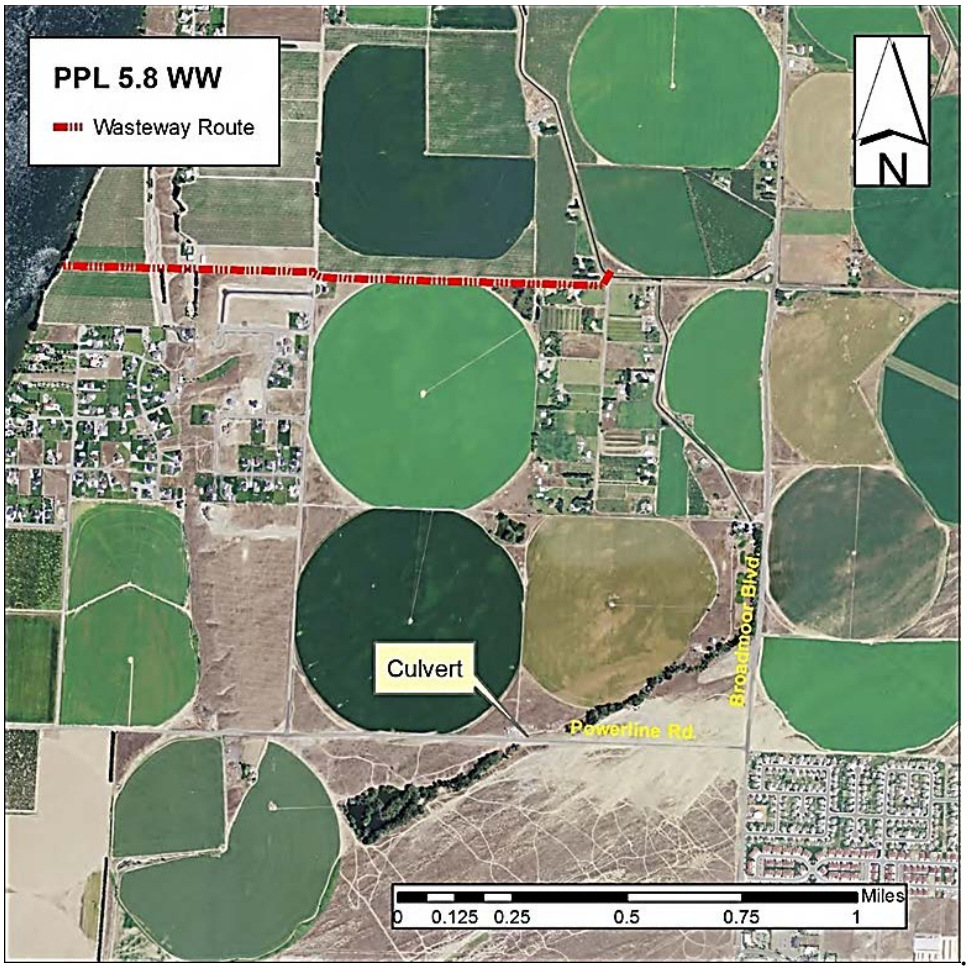

Figure 6. The culvert that transports wastewater from the 6.0 Wasteway to "Adams Pond" would be plugged. It is located under Powerline Road at the intersection of Broadmoor Boulevard.

Construction Timing

The overall construction window is fall 2019 through February 2021; however, specific construction activities are restricted to certain timeframes within the larger construction window. Tie-in of the 5.8 Wasteway inlet to the PPL is restricted to the non-irrigation season, November 1–February 28. Construction of the 5.8 Wasteway outlet structure is restricted to the established inwater work-window of the Washington State Department of Fish and Wildlife (WDFW), which is November 1–February 28. Construction of the pipeline connecting the inlet to the outlet is not restricted to a specific timeframe within the overall construction window. The contractor would comply with the Project specifications and all permits, laws, rules, and regulations in place at the time of construction.

Operations and Maintenance

SCBID would operate and maintain the PPL 5.8 Wasteway Pipeline after construction. O&M would vary daily and would be dictated by the needs of SCBID and their patrons. The flow range would differ between normal operations and emergency situations.

During normal operations, the PPL 5.8 Wasteway would be used for transporting excess water (return water/wastewater) from the PPL to the Columbia River. These situations may arise when on-farm demand suddenly decreases, leaving a surplus of water in the PPL. Typical return flows to the Columbia River would run between 1 and 5 cfs. Emergency situations such as a power outage would result in up to 88 cfs of return flow until remedied (usually a few hours).

During the irrigation season (March–October), the following maintenance activities would occur[3]:

- Inspect surface of pipeline alignment
- Monitor vegetation growth and survival
- Mow vegetation and treat weeds within the 40-foot-wide right-of-way

During the non-irrigation season (November–February), the following maintenance would occur[4]:

- Inspect pipeline and repair as needed
- Exercise the inlet gate, from fully-closed and open, to ensure proper operation
- Remove debris in front of inlet gate and within the baffled outlet and flume
- Monitor vegetation growth and survival

Mitigation

Reclamation seeks to resolve the adverse effect of the proposed Project on the pre-Contact village of Tamántawla, through implementation of a MOA. The signatories on the MOA include Reclamation and the Washington SHPO; invited signatories include the CTCR, the CTUIR, and the Yakama Nation; and the Corps as a concurring party. Reclamation will undertake the following activities to avoid or minimize adverse effects to historic properties:

Archaeological Construction Monitoring: Archaeological monitoring will be arranged for construction activities as specified in the MOA. Special excavation procedures will be used on the last 500-foot waterward portion of the Project. The construction schedule will be communicated to the MOA signatories. Signatory parties' archaeological construction salary, per diem, and transportation expenses will be covered, within reason. Within six months after construction is completed, a draft report detailing the results of the archaeological construction monitoring will be prepared for review and comment, and a final report will be prepared that responds to consulting parties' comments.

Post-Review Discoveries: If previously unknown cultural resources are discovered that may be historically significant or have unanticipated effects to historic properties, Reclamation will implement the post-review discovery plan.

[3] This is not a complete listing of maintenance actions, but a general compilation of maintenance activities conducted by SCBID

[4] This is not a complete listing of maintenance actions, but a general compilation of maintenance activities conducted by SCBID

Inadvertent Discoveries: If human remains, funerary objects, sacred objects, objects of cultural patrimony or other cultural items are found, Reclamation will initiate appropriate notification and consultation depending on the location of the find. If the inadvertent discovery takes place on Federal lands, Reclamation will follow the regulations specified in 43 CFR § 10. If the inadvertent discovery takes place on State or private lands, Reclamation will follow the requirements of RCW 27.44.

Postconstruction Planting and Seeding: Reclamation will replant the area around the concrete outlet and reseed along the pipeline trench following construction. The selected vegetation will emphasize native species that grow well in the habitat and have traditional cultural value to affected Tribes. Seed mix will include bluebunch wheatgrass, bottlebrush squirreltail, Indian ricegrass, needle-and-thread grass, sandberg bluegrass, Thickspike wheatgrass, and great sage. Chokecherry and coyote willow will be planted in the riparian but not in the exact location where trees were removed to facilitate construction.

Off-site Mitigation: In addition to steps taken to avoid or minimize adverse effects resulting from construction, Reclamation will also conduct the following activities to mitigate adverse effects.

- *Development of a Traditional Plant Foods Identification Application* (app): Reclamation will collaborate with the consulting parties on the development of a statement of work (SOW) or a similar requirements-document for a contractor to develop a first-foods plant identification app. Reclamation will provide the app structure to each of the consulting Tribes for their use and distribution as they see fit. Reclamation will provide a copy of the app structure and data schema to the SHPO to verify this task was completed.
- *Traditional Plant Foods Inventory Fieldwork:* Reclamation will collaborate with the consulting parties on the development of a SOW or a similar requirement-document, so a contractor could identify the location and abundance of native plant foods valued by the consulting Tribes on the 500 acres of Reclamation land in Franklin County. Reclamation will provide the SHPO with a copy of the data schema used. The SOW will also require the contractor to provide a draft and final report on the project. The report will be broken into two parts: (1) an overview of the project that summarizes the work done that does not provide the location of the identified stands of first foods, and (2) a confidential appendix that will be provided only to the Tribes.
- *Atlas of Traditional Plant Foods:* The final step to assist Tribal members in accessing traditional resources will be for Reclamation to develop a traditional foods atlas in a web-based geographical information system (GIS) format. Each Tribe will receive a personalized copy and manage their atlas.
- *Presentation at a Professional Meeting:* To inform the broader community about the steps taken to address historic properties as a part of this project, Reclamation will present a paper at a professional meeting regarding lessons learned from the development and implementation of this agreement. The consulting parties will be given the opportunity to review and comment on the content of the presentation in advance of its delivery.

2.4.2 Environmental Commitments

Environmental commitments represent mitigation measures and best management practices (BMPs) to avoid, minimize, rectify, reduce, eliminate or compensate for impacts caused by implementation of the Project. Most of the Project's impacts are short term and generally occur during the construction period. Project design and implementation of site-specific or selectively recommended BMPs would minimize the effect of the Project where the potential for long-term adverse impacts could occur without them. The Project specifications outline the requirements the contractor must follow to reduce environmental impacts. These requirements become environmental commitments. Appendix A includes Project specification requirements and BMPs that form Reclamation's environmental commitments, which are incorporated into the proposed action. Chapter 3 presents the impact analysis for resources after applying impact minimization measures, such as BMPs, since these would be required during construction; therefore, they are considered part of the proposed action.

2.5 Related Actions

The City of Pasco has started the master planning process for the West Pasco/Broadmoor Area. This master planning effort involves analysis of a variety of land-use designations, roadway alignments, and other pertinent issues. The City of Pasco intends to prepare an EIS for the area generally bound by the Columbia River on the west, Broadmoor Boulevard on the east, and Interstate 182 (I-182) on the south. A portion of the study area is located east of Broadmoor Boulevard, and a portion is located south of I-182. The "Adams Pond" area is within the boundaries of the City of Pasco's master plan (https://www.pasco-wa.gov/466/Broadmoor-Master-Plan-2017). Development of the area at this point is conceptual. However, continued use of the PPL 6.0 Wasteway as an emergency water evacuation route and the resultant overflow into "Adams Pond" could result in flooding any future development.

Private landowners adjacent to the proposed Project have planned to subdivide their land on the lower bench and construct a housing development. Currently, development is conceptual, and nothing is yet proposed. Reclamation's proposed 5.8 Wasteway Pipeline Project would not facilitate or encourage any housing development.

Chapter 3 Affected Environment and Environmental Consequences

3.1 Introduction

This chapter describes the affected environment including existing conditions and future anticipated conditions if the No Action Alternative is selected. It also describes the anticipated effects and the cumulative impacts on the environment if the Proposed Action Alternative is implemented. Resources likely to be affected by the proposed action—geology, cultural resources, water quality, vegetation, threatened and endangered species, and wetlands—are analyzed. In addition, this document evaluates affects to Indian Trust Assets (ITAs) and environmental justice as required by current Reclamation and Department of the Interior (DOI) policies. Where applicable, mitigation measures are recommended to reduce adverse environmental effects.

3.1.1 Resources Considered and Eliminated from Further Analysis

The resources in Table 2 were considered but eliminated from further analysis because they did not occur in the Project area, and their affect to the environment is minor (negligible) when implementing the environmental commitments and BMPs described in Appendix A.

Table 2. Resources eliminated from analysis

Resource	Rationale for Elimination from Further Analysis
Air Quality	Best management practices, such as applying water to control dust would be used to reduce airborne dust and ensure compliance with local air quality standards. Implementation of the proposed action would not result in an alteration of air movement, moisture, or temperature patterns, or creation of objectionable odors on a local or regional level.
Noise	Implementation of the proposed action may result in a minor increase in noise in the local area during construction. This increase is not significant compared to background noise.
Health	The Project has been designed to current safety standards to ensure there would be no effects to health and safety if implemented. Implementation of the proposed action would not result in the release of hazardous substances.
Public Services, Taxes, Utilities	Implementation of the proposed action would not require new or altered government services (e.g., fire, police, schools, parks and recreation, roads, water supply). There would be no effect on local or State tax-base or revenues. New facilities or substantial alteration of utilities (e.g., electric power, natural gas, or communications) would not be needed.

Resource	Rationale for Elimination from Further Analysis
Recreation	If the proposed action is implemented, there would be no alteration to the quality or quantity of recreation or tourism opportunities within the local area. Implementation of the proposed action would have negligible impacts on boaters in Lake Wallula and near the flume construction area between November 1 and February 28. Direct shoreline access is already severely restricted by overhanging tree growth, and the debris curtain would extend approximately 25-feet from the shoreline. There are no boat docks in the Project area. Visual impacts on boaters are discussed in the Visual Resources section.
Wilderness and Wild and Scenic Rivers	There are no designated wilderness areas or wild and scenic rivers within the Project area; therefore, there would be no impact on these resources if the proposed action is implemented.
Water Rights	Water rights would not be impacted by the proposed Project. There would be no changes to the beneficial use of existing water rights. The proposed Project would transport excess irrigation water as return flows to the Columbia River.
Fish	It is not likely that fish would be significantly affected by implementing the proposed action. The water level is likely to be at low pool with no fish present in the action area. In the low likelihood that fish are present, they would be seined out and not handled or harmed because of this Project. Since salmonids are not likely to be adversely affected by implementation of the Project, Reclamation has concluded that other fish would not be significantly affected (see Threatened and Endangered Species section). There are no long-term effects to habitat because of this Project.

3.2 Geology and Soil Resources

3.2.1 Affected Environment

The geology of Washington's Tri-Cities (Pasco, Richland, and Kennewick) area consists of a unique basalt landscape carved by the Spokane Flood (also known as the Missoula Flood). During this flood, the Tri-Cities lay under 900 feet of floodwater (i.e., Lake Lewis) that backed up behind the hydraulic constriction at Wallula Gap (Reclamation, 2017). The Project site is a narrow strip of land 60 feet wide and 1.3 miles long within the above described geology. The site-specific geology contains flood deposits of sand and loess, a loamy deposit formed by wind. At the eastern end of the proposed 5.8 Wasteway, the loess is about 4 feet thick. Underlying the loess is a clean, black sand derived from basaltic origin deposited during the Spokane Flood. About 2 miles west from the start of the proposed wasteway, the land drops off to a floodplain terrace of the Columbia River. This terrace is composed of about 5 feet of silt and sand underlain by coarser gravels and cobbles deposited by the Columbia River. The soil around "Adams Pond" is mostly sand and has been disturbed by both wind, water, and recreational vehicle use.

3.2.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Under No Action, land would not be acquired, and the Project would not be undertaken; therefore, there would be no effects on geology and soils along the proposed PPL 5.8 Wasteway Pipeline alignment.

Under No Action Alternative and during irrigation season, an emergency evacuation of irrigation water at the 6.0 Wasteway would result in soil erosion within Reclamation's 6.0 Wasteway easement and adjoining private property north of Powerline Road and soil around "Adams Pond." A portion of Powerline Road could be damaged or washed out if the culvert under the road cannot handle 88 cfs of sustained flow until the canal below the 4.3 Wasteway or backed up from the 6.2 Pumping Plant has been emptied.

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: No long-term impacts are expected on regional or local geology from construction. No long-term impact on soil profiles is expected, as topsoil stripping (top 6 to 12 inches) would occur prior to excavation; topsoil would be stockpiled separately from excavation spoils, replaced after backfilling, and anchored by seeding or planting vegetation.

Minor (negligible) short-term impacts on site geology caused by excavation and fill activities would occur within the right-of-way. Impacts on geology outside excavation areas would be minimized by stabilizing the vertical trench walls (trenches would be between 9 and 16 feet deep) using a variety of methods (e.g., trench boxes, pile and lagging, sheet piling, soldier piles walls), which may be combined with sloped embankments. Material removed during excavation would serve as source material for both pipe and structural backfill. Material would be removed using mechanized equipment (e.g., excavator or Gradall) and handheld equipment. Material would be stored onsite temporarily during pipe and structure installation/construction in designated areas. The pipe would be embedded in *controlled low-strength material* (CLSM) from a local ready-mixed concrete plant using standard concrete mixer/transport trucks, and then it would be vibrated into place using handheld equipment. The soil material would be dumped and compacted over the pipeline and around the structures using haul trucks, excavators, and front loaders. Mechanical and handheld equipment would be used to compact the soil. Topsoil would be hauled from stockpiles using standard haul trucks, and excavators would be used to spread it. The topsoil would not be compacted in order to facilitate seeding and vegetation growth.

Minor impacts from soil disturbances within the right-of-way, the 1-acre staging area, and the transportation routes in the Project area would be short-term and temporary. The temporary impacts on soils within the 1-acre staging area would be reduced by placing geotextile material over the soil and covering it with imported gravel; all materials would be removed postconstruction. The use of a water truck would reduce the potential for soil displacement on the dirt-road ingress and egress routes (Appendix A). Temporary, short-term soil disturbance from pumping water out of the flume location and over land is expected to be minimized through BMPs, such as using straw wattles to provide temporary sediment

and erosion control (Appendix A). The flume and wingwalls could be beneficial in stabilizing the shoreline in the long term. Since the topsoil would be separated from the rest of the soil during construction and then used again as topsoil after the pipeline is placed, no nutrient characteristics would be lost. The disturbed area would be seeded or otherwise vegetated to reduce postconstruction erosion.

Some local dewatering may be required in the outlet area to remove groundwater at the invert of the excavation. Based on geotechnical exploration, the groundwater near the outlet structure appears reflective of the river/lake level. It is expected that groundwater would occur below the bottom of the foundation of the flume structure. Some water could enter the excavation or rise into it via capillary migration. The inflow would be managed with a sump-pit and small pump. A 2-inch-diameter trash-pump is likely suitable for this work. Fish are not expected in the Project area; if present, they would be removed prior to using a trash-pump to dewater the outlet location. The trash-pump would be fitted with a NMFS-approved intake screen per Nationwide permit requirements. A 20-gallons-per-minute pump would likely be used, but the contractor would be responsible for proper sizing to maintain a dry worksite. The water would be routed uphill along the alignment to flow over land before returning to the river; BMPs such as using straw wattles would be used to prevent localized soil erosion. If unexpected high lake levels occur during the winter work-window, low volumes of water may seep under the cofferdam. In this case, a NMFS-approved screened sump-pump would be used to remove the water and discharge it into the overland worksite as described above. Once constructed and the concrete has reached strength, the metal grating would be installed, the structure perimeter would be backfilled with soil, topsoil would be placed, and reseeding and planting would occur.

Construction Timing: A debris boom and turbidity curtain or a secured straw-bale or silt fence erosion-control-system would be installed in the Columbia River during the WDFW inwater work-window, November 1–February 28. Outlet construction activities (excavation, concrete placement, backfill, and revegetation) would occur during this work-window. These activities include removing the erosion-control-system to minimize impacts on aquatic resources caused by the movement of soils during construction. Construction of the outlet would conform with designs and Project permits including the Nationwide permit issued by the Corps' Regulatory Division; the hydraulic project approval (HPA) permit from WDFW; and, the Construction General Stormwater National Pollutant Discharge Elimination System (NPDES) permit from the Washington State Department of Ecology (Ecology). Reclamation anticipates receiving a Nationwide Permit 12, Utility Line Activities, from the Corps for work below the *ordinary high-water mark* (OHWM) of the Columbia River. This work includes possible cofferdam placement, excavation, concrete placement for the flume and wingwall footings, and backfill for the outlet structure. Reclamation would receive an HPA permit from WDFW to perform work associated with the outlet structure and its operation. The contractor would apply for the Construction General Stormwater NPDES permit from Ecology; however, the contractor would not begin construction until the permit is received and submitted to Reclamation.

O&M: There would be negligible impacts on soil from driving on dirt roads to conduct O&M activities. There may be negligible impacts on a localized area if weeds were to be removed manually (e.g., pulling). There would be no impact on geology from O&M.

Mitigation: It is unlikely that mitigation measures identified in the MOA would cause additional impacts outside those identified above in the Construction Activities section. If additional investigations are needed to determine the extent of a cultural resource site, the effects would be identical to those discussed and would be confined to the rights-of-way acquired for Project implementation.

3.2.3 Cumulative Impacts

Reclamation is not aware of any past, present, or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur on geology or soils.

3.3 Vegetation

3.3.1 Affected Environment

The analysis area for vegetation includes the riparian and inland areas of the permanent and temporary rights-of-way, and the area immediately surrounding "Adams Pond."

Riparian Vegetation

Riparian areas are the vegetated areas immediately adjacent to waterbodies including rivers, streams, lakes, ponds, reservoirs, marshes, and wet meadows that provide bank stability. The vegetation and microclimate conditions in riparian areas depend on the presence and influence of the water source, local water tables, and soil moisture content. Riparian areas are variable in width, do not conform to a specific distance from the waterbody, and vary widely in shape. Plants adapt to natural, river flow patterns and habitat conditions.

The shoreline of Lake Wallula is owned by the United States and managed by the Corps, Walla Walla District. The vegetation along the shoreline and within the permanent and temporary construction areas is primarily above an approximate 12-foot-high cut-bank, compressed into a narrow corridor, and contains mostly a dense row of Russian olive and locust trees. The trees within the 60-foot construction area grow primarily out and over the cut-bank, shoreline, and lakebed. The understory consists of weedy forbs, grasses, and scattered shrubs such as mulberry.

The lower shoreline is covered in a twisted mass of tree roots and trunks as well as dead vegetation that has been thrown over the edge. Ample evidence of ad hoc shoreline stabilization efforts conducted by the adjacent private property owner (Kohler, 2017) is visible in the form of concrete rubble (Figure 7).

Figure 7. *Left*: Lower shoreline covered with a twisted mass of trees at the proposed outlet site. *Right:* Concrete rubble south of the proposed outlet site is evidence of ad hoc shoreline stabilization by neighboring landowners.

Inland Vegetation

For this EA, the inland vegetation is anything outside the riparian zone and within the right-of-way. This includes most of the lower terrace, the slope, and the upper terrace. The 60-foot-wide construction area on the lower terrace includes a dirt, two-track farm road with little vegetation. North of the road is a fallow agricultural field.

The transitional slope from the lower to upper terrace is covered primarily with native grasses and a few forbs. The dirt road winds through the slope and is clear of vegetation. The upper terrace area, west from the corner of Dent Road, is a fallow agriculture field framed by farm access roads. The only distinct vegetation noted was a few weeds and bunches of native grasses. The landowner on the northside of Dent Road has well-established grapevines. Most of the construction area along Dent Road is under the road. The remainder of the rights-of-way is sparsely vegetated with a weeds or agricultural fields and residential lawns.

"Adams Pond Vegetation

Vegetation around "Adams Pond" was observed from the road and on Google Earth images. Vegetation includes mature cottonwood trees and minimal understory of grasses and shrubs and is limited to a narrow margin around the pond. A few noxious weeds were observed.

3.3.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Under the No Action Alternative, change in vegetation would not occur along the alignment of the proposed PPL 5.8 Wasteway Pipeline or around "Adams Pond" unless undertaken by landowners.

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: An erosion control plan, a clearing and grading plan, and a revegetation and seeding plan would be developed for the Project site and other areas affected by construction, as part of the submittal process. These plans are required as part of the specifications in the environmental commitments outlined in Appendix A. Spot and broadcast weed treatments would be conducted in areas disturbed by construction, as needed, and subject to mixing and application instructions on approved herbicides.

Riparian Vegetation. While riparian vegetation would be affected by construction activities, it would be preserved to the extent practical (see Appendix A) resulting in short-term impacts; postconstruction planting of native plants would further initiate the riparian-zone recovery in the intermediate term. The chokecherry and Coyote Willow, which are shrubs or small trees, could take longer to establish than grasses and forbs but grow relatively quickly. Over time, canopy cover is expected to obscure the visual impact of the flume by filling in the shoreline and minimizing the gap in the tree line (Figure 8).

Riparian vegetation would be removed, as needed, within the 60-foot-wide construction area under supervision of an archeological monitor and subject to environmental commitments, and BMPs listed in Appendix A. The contractor would use hand tools (e.g., chain saws, shears) and an excavator with a grappling attachment to remove vegetation and clear-and-grub the site. This would involve removing large trees and brush along the riverbank. To facilitate easy removal, the vegetation growing toward the land-side would be targeted.

The orientation and position of some vegetation may cause it to fall into the river or onto the shoreline during clearing and grubbing. This vegetation would be captured within the erosion control system and removed using the excavator with a grapple attachment. Following removal of surface vegetation, any protruding tree roots or vegetation at or near the water surface would be removed within the footprint of the planned excavation and structure.

All other vegetation would be left in place to stabilize the riverbed and minimize erosion and disturbance. Once clearing and grubbing are complete, placement of a rapidly deployable cofferdam would begin.

After the structures near or at the waters' edge are completed, the area around them would be backfilled and graded, and topsoil would be distributed. The area around the outlet and flume would be seeded or planted with vegetation to stabilize the soil. In coordination with the Tribes, NMFS, and the Corps' Regulatory and Real Estate Divisions, chokecherry and Coyote Willow were chosen because the root systems of these tree species are compact and

less aggressive. Trees would be planted on a 1-to-1 ratio to replace trees removed during construction. The trees would not be planted in the exact location from where they were removed, as the concrete structures may occupy some locations. Trees cannot be planted too close to the concrete structures because, over time, the roots can crack or push the structure. SCBID would monitor any irrigation necessary for plant establishment.

Figure 8. *Top:* Close-up location of outlet before construction. *Bottom:* Close-up location of the outlet about 2 to 5 years after construction.

Inland Vegetation. Short-term temporary impacts are expected to inland vegetation. The 60-foot-wide construction and staging areas may be prepared by lightly grubbing vegetation

(mostly grasses). The grapevines along one section of the construction area would be preserved to the extent practical.

In areas where Reclamation would hold temporary construction easements, land would be returned to the same or better condition than it was prior to construction. This work would be coordinated with the landowner. On Reclamation's in-fee land holding, native species that grow well in this habitat and offer traditional cultural value to the affected Tribes would be emphasized, as discussed in the proposed action section under Mitigation.

"Adams Pond." Vegetation around the pond is expected to decrease over time with the elimination of project water from the 6.0 Wasteway after the culvert under Powerline Road is plugged, but the extent of the change is undeterminable without access to private land to further evaluate baseline conditions. "Adams Pond" now experiences annual variations in water supply depending on whether there is water delivered to it during the irrigation season; whether there is an emergency evacuation of the canal; or whether there is no direct water supply during the non-irrigation season. Vegetation has adapted to the pond's natural draining during the non-irrigation season. These factors demonstrate that vegetation has established resiliency to water supply variations.

Construction Timing: Installing a debris boom and turbidity curtain or a secured straw-bale or silt fence erosion-control-system would occur during the WDFW inwater work window, November 1–February 28. This would reduce the amount of vegetation falling into Lake Wallula, as it would be contained and not free-floating. To build the outlet structure safely, all riparian vegetation must be removed in accordance with BMPs listed in Appendix A, so the erosion-control-system can also be removed within the inwater work window. Work would comply with all other permits received for the Project.

O&M: O&M would have beneficial, long-term benefits to vegetation. SCBID and Reclamation would monitor chokecherry and Coyote Willow growth to ensure survivability. They would be monitored for 100 percent survivability for the first 5 years after planting, and 80 percent survivability thereafter. Replanting would occur as necessary to meet standards. Inland vegetation would be replanted according to mitigation requirements or in coordination with the private landowner for temporary construction easements. Vegetation within the permanent, right-of-way land holding would be subject to mowing, which helps suppress the growth and spread of noxious weeds. The permanent right-of-way would be subject to approved chemical weed-suppression treatments, which would have a negligible impact on native vegetation, yet reduce broadleaf weeds.

Mitigation: Revegetation would provide long-term beneficial effects of reintroducing native plants important to Tribes on a strip of land owned by Reclamation; the effects are captured in the Construction section above. The offsite mitigation would have beneficial long-term effects for Tribes, as Reclamation would develop via contract a traditional plant food identification app, an inventory of plants of Tribal importance, and a GIS atlas for accessing traditional foods. There would be no additional impacts on vegetation as a result of offsite mitigation.

3.3.3 Cumulative Impacts

Reclamation is not aware of any past, present, or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur on riparian or inland vegetation within the permanent and temporary rights-of-way for the PPL 5.8 Wasteway Pipeline or around "Adams Pond."

3.4 Wildlife

3.4.1 Affected Environment

Wildlife resources within the Lake Wallula area may include upland birds, songbirds, waterfowl, shorebirds, raptors, mammals, amphibians and reptiles. During site visits, Reclamation observed a few migratory songbirds in the shrubs within the Project area; waterfowl in flight over the Project area; one ring-necked pheasant crossing through the lower, fallow field adjacent to Project area; and evidence that deer had moved through the Project area, but no browsing effects were noted.

The nonnative and sparse vegetation in the Project area is concentrated in the riparian area along Lake Wallula. Overstory trees, tall shrubs, and cheatgrass in the narrow riparian corridor on the perched bank above Lake Wallula and within the 60-foot-wide easement has limited value to wildlife. Riparian vegetation on either side of the Project area has sparse trees and some shrubs.

The lower terrace and parts of the upper terrace are fallow farmland; they provide no habitat or food source for wildlife. Other Project areas next to or in Dent Road have little vegetation.

3.4.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Construction of the Project would not occur with the No Action Alternative; therefore, there would be no impact on wildlife along the proposed PPL 5.8 Wasteway Pipeline alignment or at "Adams Pond."

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: Negligible negative effects to wildlife are expected by loss of nonnative, minimally used vegetation. There are many miles of similar trees along the shoreline of Lake Wallula and on either side of the Project, so most birds and animals in the area could easily find alternative forage and cover during construction. Up to five trees may be removed within the 60 feet of shoreline encompassed by the temporary and permanent land holdings. Any temporary habitat loss would be mitigated by plantings of native vegetation; trees would be planted 1-to-1 for each tree removed, and native seed mix would be used for seeding in Reclamation's permanent land holding (see Appendix A). Therefore, most adverse impact on wildlife would be alleviated. It is highly likely that temporarily disturbed wildlife would return after construction activities have concluded.

An antibird coil would be installed during construction to prevent birds from perching or roosting on the handrail at water's edge. The antibird coil would encourage local birds to rest in the nearby trees (approximately 15 to 30 feet away) instead of on the structure where they could be exposed to public harassment.

Construction Timing: There would be negligible negative effects to birds, as trees and shrubs along the shoreline would be removed between November 1 and February 28, which is outside the nesting season.

O&M: Wildlife could temporarily disperse while SCBID is conducting O&M activities but are expected to return.

Mitigation: Impacts from mitigation actions described in the MOA would not impact wildlife.

3.4.3 Cumulative Impacts

Reclamation is not aware of any past, present, or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur to wildlife.

3.5 Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 (16 USC 470, Public Law 95-515) requires Federal agencies to complete inventories and site evaluations to identify historic resources that may be eligible for listing on the National Register of Historic Places (National Register), and then ensure those resources, "are not inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly." Regulations titled, Protection of Historic Properties (36 CFR 800), define the processes for implementing NHPA requirements including consultation with the appropriate SHPO and the ACHP.

Section 106 of NHPA (54 USC 306108) requires Federal agencies to evaluate their impact on historic properties within the human environment. "Historic property" means any prehistoric or historic district, site, building, structure, TCP, or object included in or eligible for inclusion in the National Register and includes any material, artifacts, or records related to and located within such historic properties. They may include aspects of the built environment more than 50-years-old and associated with events or processes important in the history of the area. "Cultural resources" covers a wider range of resources than "historic properties" such as sacred sites, isolated artifacts, and archaeological collections.

Information in Section 3.5 is extracted from the, *Revised - Pasco Pump Lateral 5.8 Wasteway Project: Finding of Effects under Section 106 of the National Historic Preservation Act.* (Hess, Doncaster, Hurley, 2018). Specific references mentioned below are incorporated by references in the above stated document.

3.5.1 Affected Environment

Reclamation, in consultation with the Washington SHPO, the CTUIR, the CTCR, and the Yakama Nation determined the area of potential effect (APE), which is considered the spatial scope of the area analyzed under NEPA. The APE consists of the 60-foot construction easement centered on the wasteway, the 1-acre staging area, the access routes on gravel roads, and the gravel quarry (the quarry was included initially; however, after a design change, the gravel quarry is no longer used as a source of fill material but remains part of the section 106 consultation process).

Starting in August 2017, Reclamation began to identify historic properties that would be affected by the construction of a proposed PPL 5.8 Wasteway in Franklin County, Washington. Reclamation personnel used a variety of methods to identify archaeological resources; ethnographic resources that may be of religious or cultural importance to Indian Tribes; and elements of the built environment that may be historic properties.

Identification of these resources depended on a review of published literature, some confidential information prepared by the Tribes for the Corps, and an onsite archaeological survey and excavation. The survey and excavation included 31 shovel test-pits and two test-excavation-units measuring 1 meter wide by 1 meter long by 1.2 meters deep. Six cultural resources were identified in or near the APE including four archaeological resources, a TCP, and a historically significant element of the built environment.

Two of the six cultural resources have been determined as eligible for inclusion in the National Register: (1) Tamántawla, which is both an archaeological site and TCP and (2) the PPL, which is the oldest functioning canal in the CBP. Two resources were archaeological sites on the parcel where the quarry is located and would not be impacted by the current Project proposal; the design team determined it would be better to reinforce the base of the trench with CLSM, which is a weak, runny concrete mix that would be poured into the base of the trench instead of gravel pipe-bedding material. A fourth archaeological site was found during an archaeological survey of the revised access route in May 2018.

Archaeological Overview

Based on a review of GIS data provided by the Washington State Department of Archaeology and Historic Preservation (DAHP), five archaeological sites have been recorded within 1 mile of the wasteway along the Columbia River. One of the sites, 45FR19, is the archaeological expression of a pre-Contact Native American village known as Tamántawla and is within the defined APE. Four of these five sites have been determined eligible for listing on the National Register, including the site in the APE.

Ethnographic Overview

At least three present-day Tribes—the Yakama Nation, the CTUIR, and the CTCR— regard the Project vicinity as within their traditional territory. At the time of Contact with Europeans, all Native American Tribes living in this vicinity (the Yakama, Palouse, and Walla Walla) spoke dialects of a single language that modern linguists commonly call

Sahaptin. Sahaptin, together with its sister language spoken by the Nez Perce peoples make up the Sahaptian language family.

The Yakama Nation ceded the area around present-day Pasco, including the APE, in their treaty dated June 9, 1855. Part of the boundary of the ceded lands as described in the treaty includes the area bounded by, "…the Snake River to its junction with the Columbia River: thence up the Columbia River to the 'White Banks' below the Priest's Rapids…" (12 Stat. 951; Article 1).

The APE is directly across the river from present-day Richland, Washington. Hunn shows this area opposite Richland named, Tamántawla, which means "water pulls down" (Hunn et al., 2015). Relander (1956) identified the Columbia River in this same general area as Tomowtowee, which he also rendered into English as "water pulls down." This location was used as a winter village, a place for gathering materials and medicines, and a place to fish by the Walla Walla and other Tribes.

In addition to named locations spread throughout the Project vicinity, another aspect Tribes have emphasized about their use of the Pasco area has been their traditional travel system (Hunn et al., 2015). Examination of this trail in a broader context shows it was part of a larger transportation system linking pre-Contact sites at the mouths of the Yakima and Snake rivers to other locations. Trails along banks of the Columbia, Snake, and Yakima rivers formed the arteries of this system. People sometimes took advantage of topography to create shortcuts from one place to the next. One of these shortcuts is present to the south of the APE as a trail along the left bank in Franklin County. Another shortcut goes directly from about Columbia River Mile (RM) 336 to RM 339 (i.e., from the Franklin County side of the I-182 bridge to the north end of Kohler Road, just south of the APE.) The shortcut and the riverside trail come together just south of the proposed wasteway outlet.

Historical Overview

McNary Dam was built on the Columbia River from 1947 to 1957 by the Corps. It was built near the town of Umatilla, Oregon, which is approximately 37 miles downstream from Pasco, Washington. The dam is 7,365 feet long and rises 183 feet above the streambed of the Columbia River. The water impounded by the dam forms Lake Wallula and stretches 64 miles upriver to the Hanford Engineer Works (Corps, 2017).

The arid lands north of Pasco were transformed by Reclamation's CBP from 1946 to 1959. The CBP is the largest Reclamation project in Washington, and it radically transformed the Columbia River Basin with the construction and development of this massive irrigation project. At 680,000 acres under irrigation today, the CBP remains unfinished; it was originally planned to irrigate more than 1 million acres in Adams, Douglas, Franklin, Lincoln Grant, and Walla Walla counties. Water is pumped from behind Grand Coulee Dam and impounded in Banks Lake behind Dry Falls Dam, then makes its way south through the system in a series of six main canals and three reservoirs to reach irrigable acreage in the Columbia River Basin. The system alone consists of more than 300 miles of main canals,

approximately 2,000 miles of laterals, and 3,500 miles of drains and wasteways (Doncaster, 2014).

From 1941 to 1945, Reclamation designed and planned the PPL system, which was not constructed until 1946–1947 for the canals and 1946–1949 for the Pasco Pumping Plant (Doncaster, 2014). The PPL is like many other 1940s Reclamation canals in its design, except most of the main canal portion was lined in asphalt. This was something new, as Reclamation canals in Washington prior to this had been earth-lined or concrete-lined. Reclamation chose the 27.25-mile-long PPL to serve as an experimental area for various types of canal-lining studies and as a testbed for solving problems connected with eventual farming and settlement of the entire Columbia River Basin. When completed, the PPL system had 11.33 miles in asphaltic concrete lining, 6.56 miles of concrete lining, 4.44 miles of earthen wastewater ditches, and 4.91 miles of piped laterals. Additionally, the 6.56 miles of concrete-lined sections included different types of placing, with seven sublaterals lined with pneumatically applied mortar (also known as gunite) as an experiment, instead of the traditional poured-in-place concrete panels (Doncaster, 2014).

3.5.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Cultural Resources. No impacts on historical or cultural resources would occur, since there would be no construction.

TCPs. No impacts on TCPs would occur, since there would be no construction.

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: Applying the criteria of *adverse effect* in 36 CFR 800.5 resulted in Reclamation reaching *a finding of adverse effects* for the proposed Project under NHPA. Construction of the 5.8 Wasteway would result in *adverse effects* to the pre-Contact village, especially in consideration of its value as a TCP. Because of this, Reclamation sought to resolve the adverse effects of the undertaking through additional consultation with the consulting parties that would culminate in the signing of a MOA described in 36 CFR 800.6. Landowners near the APE were sent a letter dated September 18, 2018, inviting them to participate in the Section 106 and NEPA process. To date, Reclamation has not received responses to the letter.

The signing of the MOA on March 19, 2019, resolves the adverse effect finding, and Reclamation could proceed with implementation of the proposed action if the signing official determines a FONSI could be reached for the Project. The Corps has been included as a concurring party on the MOA to ensure it fulfills their requirements under Section 106. Construction activities would result in an *adverse effect* to historical properties; however, the adverse effect would be resolved through the completion of mitigation actions identified in the MOA and included in the proposed action under Mitigation.

Cultural Resources. As a part of the Section 106 process, Federal agencies are directed to consider whether their undertakings would result in adverse effects to historic properties.

The implementing regulations specified at 36 CFR 800.5(a)(1) provide the following criteria for evaluating whether an undertaking would have an adverse effect:

"An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative [36 CFR 800.5(a)(1)]."

Reclamation would designate a lead archaeological monitor and attempt to schedule the monitor onsite at all times during excavations or ground-disturbing activities listed below, as the monitor would facilitate rapid evaluation of possible finds. If not feasible, Reclamation would designate another experienced archaeological monitor, subject to approval by the consulting parties.

Archaeological monitoring of construction would take place during excavations or ground-disturbing activities as follows:

- Placement of survey markers that involves removal of vegetation, especially in the strip of riparian vegetation along the river
- Placement of erosion protective systems, excavation shoring, cofferdams, or other structures along the river's edge
- Clearing and grubbing, especially of the vegetation along the river's edge
- Excavation to install the manhole and trench for the buried wasteway pipe west of the manhole.
- Placement of forms for the concrete outlet structure at the discharge end of the wasteway
- Placement of riprap along river's edge around the outlet structure
- Other minor ground-disturbing activities that may be necessary for Project completion on the low terrace

Tamántawla. The proposed 5.8 Wasteway APE measures 60 feet (about 20 meters) wide as it passes across the lower terrace. Reclamation determined the Project would affect only 0.8 percent of the overall length of the archaeological component of the site; therefore, the Project would leave more than 99 percent of the site intact and available for future study. It would not affect the ability of the site to provide important information.

The Project would result in an adverse effect to the site as a TCP, and part of the impact is related to the setting and feeling of the area where the village site was located. The topography is one of the most salient features of the Tamántawla site. The low terrace is a

continuous landform from the cut-bank at the edge of the river to the toe of the slope leading to the upper bench to-and-from the north end and near an orchard located on the south end, which is now marked by a housing development. There is no remnant tread of the aboriginal trail that passed through this area, as it has been destroyed by decades of farming and other recent activities.

The bulk of the Project would be hidden from view. The Project pipeline would be buried about 10 feet underground, and the surface would be returned to its original condition following construction. Even if most of the 5.8 Wasteway is buried, the concrete outlet would represent a significant intrusion. This intrusion would diminish the setting and feeling of Tamántawla resulting in an adverse effect. Furthermore, with the finding of pre-Contact materials, the Tribes believe that the original occupants did not haphazardly discard items. It is believed that the original occupants placed items in locations with ceremonial and religious intent, and disturbance of these items affects the integrity of the site (J. Shellenberger, 2018; C. Dickson 2018). This Project would result in an adverse effect to the characteristics that make Tamántawla eligible for listing on the National Register.

Pasco Pump Lateral. In using the criteria in 36 CFR 800.5(a)(1), the installation of a 5.8. Wasteway inlet structure would not destroy any character-defining features of the PPL, as it only impacts 5 feet 10 inches of the asphalt lining in this section, and the PPL is approximately 18 miles long. In 2014, most of original screw-lift turnouts or constant-head orifice turnouts were missing, so adding a new turnout for a proposed 5.8 Wasteway would not impact the integrity of the canal (Doncaster, 2014). Therefore, the undertaking has no adverse effect upon the integrity of the PPL.

"Adams Pond." There are no cultural resources associated with "Adams Pond."

Construction Timing: There would be no impacts on cultural resources because of construction timing.

O&M: There would be no impacts on cultural resources because of O&M activities.

Mitigation: The resultant construction mitigation measures developed and recorded in the MOA are intended to resolve the adverse effects of construction by facilitating data recovery about the historical resources within the Project area. Any cultural resources found within the PPL 5.8 Wasteway alignment would be protected by Federal ownership of the land and managed in accord with Federal regulations. While the Archeological Construction Monitoring, Post-review Discoveries Plan, and the Inadvertent Discoveries Plan are designed to limit and mitigate for construction impacts, the MOA includes other actions to resolve the adverse impact of the Project. Offsite mitigation measures would result in beneficial effects to Tribes as they would have resources available regarding traditional food sources.

3.5.3 Cumulative Impacts

Reclamation's records search did not reveal any publicly available information to facilitate a cumulative impacts analysis of planned residential development, and all information obtained was from conversations. Because of limited sources, Reclamation was unable to determine

how much development would occur in the reasonably foreseeable future of the next few years. Many previous archaeological investigations at Tamántawla have noted the impinging residential developments. No residential developments are visible in the 1950 aerial photographs but by the 1990s, the houses on the upper bench above the north end of Tamántawla were in place. More recent aerial photographs show the bulk of the development south of 45FR19 has occurred since 2000, with a marked acceleration since 2010.

A new phase of building throughout the area is currently underway, but this development is not in the immediate vicinity of the proposed Project. The proposed Project would not facilitate any residential development, as its purpose is to correct a drainage problem, not to provide water for residences. Furthermore, Reclamation does not exercise authority over residential developments in this area. Residential developments are under the authority of Franklin County, which recently approved a shoreline master program (Franklin County, 2016). This program contains provisions related to protection of archaeological and historic resources (Article 18.16.220) in the shoreline management zone and carries out the requirements of the Washington State Shoreline Management Act (RCW, 1971). This is a local-level process independent of this Federal undertaking.

3.6 Indian Trust Assets

Indian Trust Assets (ITAs) under Secretarial Order 3175 are legal interests in property held in trust by the United States for federally recognized Tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITAs include land, minerals, federally reserved hunting and fishing rights, federally reserved water rights, and instream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally recognized Tribes with trust land; the United States is the trustee. ITAs cannot be sold, leased, or otherwise encumbered without approval of the United States. The characterization and application of the United States trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

The Federal government, through treaty, statute or regulation, may take on specific, enforceable fiduciary obligations that give rise to a trust responsibility to federally recognized Tribes and individual Indians possessing trust assets. Courts have recognized an enforceable Federal fiduciary duty with respect to Federal supervision of Indian money or natural resources held in trust by the Federal government, where specific treaties, statutes or regulations create such a fiduciary duty.

Reclamation assesses the effect of its programs on Tribal trust resources and federally recognized Tribes, which is consistent with President William J. Clinton's 1994 memorandum, *Government-to-Government Relations with Native American Tribal Governments* (FR, 1994). Reclamation is tasked to actively engage federally recognized Tribes and consult with them on a Government-to-Government level when its actions affect ITAs. The *DOI Departmental Manual*, Part 512.2 (DOI, 1995) ascribes the responsibility for

ensuring protection of ITAs to the heads of bureaus and offices. The DOI is required to, "protect and preserve ITAs from loss, damage, unlawful alienation, waste, and depletion" (DOI, 2000).

The general policy of the DOI is to perform its activities and programs in a way that protects ITAs and avoids adverse effects whenever possible. Reclamation complies with procedures contained in the *DOI Departmental Manual*, Part 512.2 guidelines that protects ITAs. Reclamation carries out its activities in a manner that protects trust assets and avoids adverse impacts when possible. When Reclamation cannot avoid adverse impacts, it would provide appropriate mitigation or compensation. Reclamation is responsible for assessing whether the proposed action has the potential to affect ITAs.

3.6.1 Affected Environment

The Yakama Nation, the CTUIR, and the CTCR have treaty, and cultural and historical rights or interests in the area. These may include, but are not limited to, hunting, fishing, gathering, and other traditional activities; however, the Project does not lie within these Tribe's reservation boundaries.

3.6.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

There would be no effect to ITAs under No Action Alternative since construction would not occur.

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

No ITAs were identified within a 25-mile radius of the Project area; therefore, there would be no impacts on ITAs because of realty actions, construction activities, construction timing, O&M, or mitigation. Reclamation used its Tessel mapping database to determine the presence of ITAs in the Project area. This database includes known instances of trust land, reservation land, and village and community sites. The database is updated frequently by the Bureau of Indian Affairs. Some Tribes may include other aspects of the environment in their definition of trust assets. These may include water rights, water quality, fishing, hunting, and gathering activities. Please see the following sections of the EA that discuss effects of the Project on these resources (see sections 3.4-Wildlife; 3.8-Water Quality; and 3.9-Threatened and Endangered Species in this EA).

3.6.3 Cumulative Impacts

The Project area does not lie within the Tribe's reservation boundaries and no ITAs were identified within a 25-mile radius; therefore, there would be no cumulative impact of future development and implementation of the 5.8 Wasteway Pipeline.

3.7 Visual Resources

3.7.1 Affected Environment

The primary affected environment is from a bend in the PPL at Richview Drive and Dent Road; along Dent Road; along a farm road behind a housing development and adjacent to a fallow farm field; down a slope to the outlet on the Columbia River; and the Columbia River itself. The PPL at Richview Drive and Dent Road is elevated on a berm. Dent Road covers most of the easement Reclamation currently holds, and within this easement lies the buried 5.9 lateral. Property along Dent Road is a mix of residences and agricultural fields. Where Dent Road bends to the south, the primary affected environment continues west and ends at the river. This area is mostly adjacent to non-productive agricultural land but crosses a driveway that provides access to the homeowner. From the west side of the driveway, the primary affected environment traverses a slope with a weaving farm road to a lower-terrace farm road. The westerly extent of the farm road ends at the riparian vegetation. Other affected environment is the existing farm roads north of the primary Project area. These roads are a mix of heavily compacted soil and gravel. The outlet would also be visible to individuals recreating on the Columbia River. "Adams Pond" is on private land, but vegetation is visible from Powerline Road.

3.7.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Under No Action, Reclamation would not implement the Project. Existing conditions along Dent Road are likely to persist, including the appearance of the PPL at the corner of Richview Drive and Dent Road. However, the area would experience changes from the corner where Dent Road turns south. The proposed Project area continues westerly on the upper and lower terraces. The landowner is proposing residential development, which would occur regardless of Reclamation's implementation of the Project. Boaters would not see a change in the shoreline from Lake Wallula.

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: Temporary short-term impacts would occur because construction equipment would be used in varying locations and durations along the Project alignment. When the contractor is working along Dent Road, it is anticipated the equipment would be parked overnight in the 1-acre staging area near the corner where Dent Road turns south. Once Project construction is west of Dent Road, it is expected that equipment would travel with the construction crews and may be parked overnight near the next day's worksite, if appropriate.

Postconstruction, the view along Dent Road would be as it is today. The 5.8 pipeline would be buried in the same easement as the 5.9 pipeline. Any visual impacts from new road repairs would diminish as traffic crosses over these sections.

Likewise, the pipeline would not be visible from Dent Road to the outlet structure. The pipeline would be buried; however, two manhole covers and an air vent near one of the

manhole structures would be visible primarily to adjacent landowners as they drive by, since they are proximal to the driveways and farm-road access down the slope.

A long-term, minor visual impact would occur on the lower terrace because of the slight change in road-surface elevation and the presence of the outlet structure not fully obscured by vegetation growth. Along the lower terrace, the pipeline would also be buried. The spoils from excavations on the lower terrace would remain and distributed over Reclamation's in-fee landholding. This would increase the surface elevation by approximately 1-foot with tapered edges from the west side of the farm road that runs east and west on the lower bench. The road would be identical to what it is now but elevated 1-foot and may be topped with gravel. The road would terminate at the outlet structure.

The outlet structure would be surrounded by a "curb" approximately 6-inches higher than the surrounding terrain. The outlet structure would have an inset metal grating and a handrail at water's edge.

Native seed mix would be planted and eventually mowed in the remaining portion of the 40-feet not covered by the road. The temporary construction easements would be returned to as-good-as or better conditions than prior to construction and at the discretion of the underlying landowner.

With the road being slightly raised and the permanent outlet structure visible, the lower terrace would slightly alter the view from the residences along the top terrace adjacent to the Project area.

As mentioned in section 3.5.2, even though the pipeline would be buried, the outlet would represent a significant intrusion to the viewshed's setting and feeling from a Tribal perspective. This intrusion would diminish the setting and feeling of Tamántawla and cause an adverse effect to the characteristics that make Tamántawla eligible for listing on the National Register. The MOA would resolve the adverse effect finding of Reclamation's actions.

The concrete structure and tree-gap would be noticeable by boaters in Lake Wallula, especially for the first 2 to 5 years after construction. Over time, the canopy cover is expected to obscure the visual impact of the flume by filling in the shoreline and minimizing the gap in the tree line. Reclamation is required to maintain access to their facilities for O&M purposes and to restrict aggressive root systems from penetrating the concrete; therefore, the outlet area would never be fully obscured by vegetation.

Construction Timing: There would be no impacts on visual resources.

O&M: There would be no impacts on visual resources.

Mitigation: The MOA requires planting of native vegetation which is a long-term benefit to visual resources, as it would reduce the visual impact of the gap in the tree line over time, both from land and the Columbia River.

3.7.3 Cumulative Impacts

Reclamation is not aware of any past, present or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur to visual resources.

3.8 Water Quality

The Clean Water Act employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways; finance municipal wastewater treatment facilities; and manage polluted runoff. These tools are used to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters that support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.

Water quality is defined by its capability to support beneficial water uses. These include domestic water supply, livestock watering, irrigation, aquatic life, recreation, navigation, and aesthetics. A water quality problem occurs when the beneficial or intended use of the waterbody becomes impaired (WQTR, 2018). Water quality standards for surface waters of Washington State are consistent with public health and enjoyment of the waters and the propagation and protection of fish, shellfish, and wildlife, pursuant to the provisions of chapter RCW 90.48 (WQTR, 2018).

3.8.1 Affected Environment

The affected environment for surface water quality is in the southern region of the CBP in Block 1 within the SCBID boundary; it includes the Columbia River, Potholes East Canal (PEC)/Pasco Wasteway, Esquatzel Diversion (ESQ) Wasteway, the PPL drainage (delivery and return facilities), and “Adams Pond.”

The Columbia River is a large river in the Columbia River Basin. It has a minimum instream flow requirement of 36,000 cfs instantaneous flow to protect aquatic ESA species.

Grant County Public Utility District (GCPUD) provided flow data for the Columbia River at Priest Rapids Dam. The range for the most recent 10-year period (2006–2015) was approximately 75,000 cfs to 215,000 cfs. The flows at McNary Dam are much higher than Priest Rapids due to the influx of discharges from the Yakima and Snake rivers (WQTR, 2018) and ranged from approximately 36,000 cfs to 400,000 cfs in 2017 and 2018 (USGS, 2018).

Water temperature data at Priest Rapids Dam was highest during mid-August to mid-September, with some daily maximum values greater than 20°C. Water temperatures in Lake Wallula—the water impounded behind McNary Dam, were the highest temperatures recorded in August with exceedances of 20°C (WQTR, 2018). Monitoring data for dissolved oxygen (DO), pH (measure of acidity or alkalinity), turbidity, and nutrients were all within acceptable ranges in the Columbia River (WQTR, 2018).

Flows in the PPL facilities within the affected environment are negligible compared to the Columbia River. The SCBID monitors water quality for their Irrigation System Aquatic Weed Control National Pollution Discharge Elimination System Permit and State Waste Discharge (NPDES/SWD) General Permit WA0991000 (WQTR, 2018). Water quality data monitored and reported includes temperature, DO, pH, and turbidity; nutrients, Ammonia-N, Nitrate-Nitrite, ortho-phosphorus, and herbicides. These parameters generally represent the range of water quality issues that may be seen in SCBID's discharges to the Columbia River.

Water temperature data collected at the PEC/Pasco Wasteway, ESQ Wasteway, and the 4.3 Wasteway were highest during mid-July to mid-September when seasonally hot. Temperature values in the facilities are consistent with seasonal trends ranging from an average annual minimum of 12°C in the ESQ Wasteway to an average annual maximum of 24°C at the PEC/Pasco Wasteway. The average calculated water temperatures for each of the facilities are 18.8°C for PEC/Pasco Wasteway; 17.2°C for ESQ Wasteway; and 18.6°C for 4.3 Wasteway. DO and pH vary daily due to aquatic plant respiration processes. Turbidity is within acceptable ranges. Nutrients would continue to enter the irrigation facilities through return flows causing growth of aquatic plants and algae (WQTR, 2018), which would be treated with approved aquatic herbicides per the NPDES/SWD Permit requirements.

When SCBID operations spill excess water down the 6.0 Wasteway, some water may be conveyed to "Adams Pond." Historically, a few irrigation deliveries were made from water-flows into "Adams Pond." A pipeline was installed to make deliveries to landowners who received water from "Adams Pond." The landowner also elected to receive irrigation water via the pond. In recent years, the landowner has greatly reduced the volume of water requested from SCBID during the irrigation season, which has altered elevations of the irrigation-induced wetland.

3.8.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Water quantity and quality is expected to remain the same under No Action Alternative. Under the No Action, the proposed facility would not be constructed and SCBID would continue to operate and maintain the PPL system as they do now, including monitoring water quality to maintain compliance with their NPDES/SWD Permit.

If the landowner does not request irrigation water, "Adams Pond" could be eliminated. The pond would receive water directly proportional to the request of the landowner, plus the carriage water required to ensure delivery of the requested amount. If no water is requested, no water would be delivered. However, under emergency conditions, the current configuration of the PPL system would require water to be evacuated at PPL 6.0 Wasteway, which would ultimately flow into "Adams Pond."

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: Implementing the Project could cause a long-term impact on "Adams Pond," as it could disappear. Reclamation would construct the 5.8 Wasteway Pipeline, and water would not drain into the pond via the 6.0 Wasteway during normal or emergency operations, once the culvert is plugged by SCBID. Since the irrigation-induced "Adams Pond" would not receive an influx of irrigation water during the irrigation season, it is expected that it would dry up as it does now during the non-irrigation season.

Disappearance of a wetland because of irrigation system improvement is not regulated under Section 404 of the CWA. That said, Executive Order 11990 still requires each agency, "to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands," and to "take action to minimize the destruction, loss or degradation of wetlands." In carrying out this directive, Section 5 of Executive Order 11990 requires each agency to consider relevant factors including, among others, "public health, safety, and welfare" and "maintenance of natural systems." Maintaining public health, safety, and welfare is a central purpose of this alternative, because it will mitigate the risk of flooding associated with the use of the PPL 6.0 Wasteway. The pond is also not a "natural system" but rather the result of uncontrolled drainage from a manmade canal. For these reasons, it is not practically possible to mitigate the flooding risk without eliminating the drainage problem that created "Adams Pond" in the first place. It follows that this alternative does not run afoul of the requirements in Executive Order 11990. Additionally, Reclamation has no authority or responsibility to create, maintain, or manage wetlands on private property. In the case of "Adams Pond," which exhibits wetland characteristics based on observations from Powerline Road and Google Earth images, the landowner has requested Reclamation to terminate the flow under normal and emergency conditions.

Water quantity would remain the same as current conditions with little change to current facility capacities. SCBID would continue to flow, divert, and store water in the PPL system, but operation of the irrigation facility would be modified to accommodate the proposed new irrigation return-flow facility. Summer irrigation needs would continue to be met with the proposed facility. Annually, the volume of water in the irrigation system would not change, but the volume and elevations could shift during the irrigation season to meet on-farm demands.

The maximum discharge from the proposed 5.8 Wasteway could spill 88 cfs into the Columbia River for a short period; therefore, the maximum discharge from the Project would amount to only 0.24 percent of the total minimum Columbia River flow/capacity. This negligible contribution to Columbia River flow is an important factor in considering the effects of the PPL 5.8 Wasteway on water quality (WQTR, 2018).

Water temperatures would continue the seasonal trend of lower temperatures in winter and warmer temperatures in summer and fall. Water traveling through and over the concrete baffled outlet and flume, respectively, would be expected at a depth and velocity that would result in insignificant increases in temperature, even during high summer temperatures.

The proposed Project is not expected to affect turbidity within the Project area or in the Columbia River. Any temporary construction-related impacts on surface water quality would be avoided or minimized by complying with the Nationwide permit and the Construction General Stormwater NPDES Permit, if required. BMPs in Appendix A would be used to minimize impacts on water quality.

Construction Timing: There would be no impact on water quality.

O&M: As proposed, the Project should not have a discernable effect on water quality conditions with respect to DO and pH, and herbicide chemicals in the Columbia River and PPL drainage. SCBID would be required to comply with the NPDES/SWD Permit. Nutrients would continue to enter the irrigation facilities causing growth of aquatic plants and algae.

Mitigation: Revegetation required by the MOA would help reduce surface water sediment transport to the Columbia River and stabilize the shoreline from sloughing into the river.

3.8.3 Cumulative Impacts

Reclamation is not aware of any past, present, or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur on water quality.

3.9 Threatened and Endangered Species

3.9.1 Affected Environment

Salmonids

The Snake and Columbia river systems within the area for the proposed action have been substantially modified to the detriment of listed salmonids. The most conspicuous habitat modifications are caused by dams. The dams have transformed portions of the rivers from fully lotic to essentially lentic environments. The reduction in absolute water velocity and desynchronization of historical runoff patterns has dramatically altered the physical characteristics of the Snake and Columbia rivers. Additionally, sediment transport and deposition dynamics, water temperature, habitat diversity, and habitat access have been altered to the detriment of listed salmonids because of dam construction (Spence et al., 1996; Corps 1989).

Concurrent with physical changes, indirect biological transformation has also occurred. Exotic species that prey on salmonids, including percids and centrarchids, have become established in the Snake and Columbia rivers (Wydoski and Whitney, 1979). These predators may feed directly on salmonids (Tabor et al., 1993) or compete for other food or habitat resources. Other native predators including the Northern pikeminnow (*Ptychocheilus oregonensis*) have exploited the impounded environment created by dams, although their predation rates are higher in the lower Columbia River (Faler et al., 1988).

Several general anthropogenic factors have also influenced listed species. Along the shores of the Snake and Columbia rivers, agriculture, transportation infrastructure, commercial and residential development have displaced riparian and shallow water habitat used by juvenile salmonids. This development contributes some quantity of runoff and pollution, which may include sediments, fertilizer, pesticides, and petroleum products.

The affected environment for the proposed Project is considered the 60-foot-width of the construction area from the shoreline and to the furthermost extent of the erosion control system described in and subject to the water elevation of Lake Wallula.

The following *evolutionary significant unit* (ESU) and *distinct population segment* (DPS) species could be present in the following Project areas:

- UCR spring-run Chinook Salmon ESU (*Oncorhynchus tshawytscha*)
- UCR steelhead DPS (*O. mykiss*)
- MCR steelhead DPS (*O. mykiss*)
- SR spring/summer Chinook salmon ESU (*O. tshawytscha*)
- SR Fall Chinook salmon ESU (*O. tshawytscha*)
- SR sockeye ESU (*O. nerka*)
- SR steelhead DPS (*O. mykiss)*

All populations of Bull Trout within the coterminous United States were listed as a threatened species pursuant to the ESA of 1973, as amended (64 FR 58910; November 1, 1999). The 1999 final listing created one DPS of Bull Trout within the coterminous United States by adding Bull Trout in the Coastal-Puget Sound populations (Olympic Peninsula and Puget Sound regions) and Saint Mary-Belly River populations (east of the Continental Divide in Montana) to the previous listings of three separate DPS of Bull Trout in the Columbia River, Klamath River, and Jarbidge River basins (63 FR 31647, June 10, 1998; 64 FR 17110, April 8, 1999).

Critical habitat for the Klamath River and Columbia River Bull Trout populations was initially designated on October 6, 2004 (69 FR 59995). This designation was subsequently revised with the final rule effective on November 17, 2010. This critical habitat unit (CHU) is known as the Mainstem Upper Columbia River CHU and is considered foraging, migration and overwintering habitat.

While there is some evidence that a few Bull Trout overwinter in parts of the Columbia River, it is Reclamation's assumption that Bull Trout are not present in the action area due to low rates of detection in the Columbia River and action area size. The action area is a relatively small portion of the Columbia River and Project effects are localized.

Gray Wolf

The USFWS listed the gray wolf (*Canus lupus*) as endangered under the ESA in 1973 (38 FR 14678). In 2008, the USFWS issued a final rule identifying a DPS of the gray wolf in the

Northern Rocky Mountains (NRM) of the United States and has subsequently revised and removed the NRM DPS from the *List of Endangered and Threatened Wildlife* (74 FR 14678). The NRM gray wolf DPS encompasses the eastern one-third of Washington and Oregon, a small part of north-central Utah, and all of Montana, Idaho, and Wyoming. The listing determination from 2008 to 2011 was subjected to litigious and legislative actions. In April 2011, Congress passed legislation removing the NRM wolves from the ESA. Currently, the gray wolf is federally listed as endangered in the western two-thirds of Washington State and delisted in the eastern one-third of Washington State. In June 2013, the gray wolf was proposed for delisting nationwide (78 FR 35663).

Yellow-billed Cuckoo

The USFWS listed the yellow-billed cuckoo as threatened on October 3, 2014 (79 FR 59991 60038). Designated critical habitat (DCH) for the western DPS was listed on December 2, 2014 (79 FR 67154 - 67155).

Yellow-billed cuckoos use a variety of riparian habitats. Cottonwood and willow trees are an important foraging habitat in areas where the species has been studied in California. Western yellow-billed cuckoos appear to require large blocks of riparian habitat for nesting. Along the Sacramento River in California, nesting yellow-billed cuckoos occupied home ranges, which included 25 acres (10 hectares) or more of riparian habitat. Another study on the same river found riparian patches with yellow-billed cuckoo pairs to average 99 acres. Home ranges in the South Fork of the Kern River in California averaged about 42 acres (USFWS, 2018).

3.9.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

There would be no impact on threatened and endangered species, as there would be no project implementation. There would be no changes to "Adams Pond."

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: Project design would minimize impacts on salmonids, and Section 7 consultation with NMFS required 1-to-1 planting of trees for those removed during construction. Coyote Willow and chokecherry plantings are incorporated into the project design and specifications, and further captured in the NMFS letter of concurrence and in the MOA.

Erosion Control System. Either a debris boom and turbidity curtain or a secured straw-bale or silt fence may be used depending upon lake level. The following paragraphs explain the erosion control system options and installation methods the contractor may use.

Work would begin by isolating the area from fish prior to, during, and after installation of the floating debris boom and turbidity curtain. This system would permit clearing and grubbing and prevent vegetation from falling into the Columbia River and swept downstream off the project site. The system would be installed at the riverbank and extend into the river channel.

Installing the system depends on the river's water surface elevation during placement. If the water level is low, contractor personnel can use ladders from the embankment and walk along the riverbank to set the anchorage. If the water level is high (preventing foot traffic along the riverbank), contractor personnel could use a small boat to reach the bank and set the anchorage. The contractor personnel may use a boat to set an anchorage in the river channel approximately 20 to 30 feet from the bank line for the debris boom system.

Once the anchorage is set, the contractor would use an excavator or small mobile crane to lift the floating debris boom and turbidity curtain system over the vegetation and into the water. Once placed, it would be secured to the anchorages and set to protect the river environment against sediment and vegetation intrusion. Once set, the turbidity curtain and debris boom would permit clearing and grubbing operations.

If lake levels permit and enough land access is available, straw bales and silt fence could be placed along the cofferdam inside perimeter. These bales would be secured using wooden stakes to prevent movement. Following this step, the clearing and grubbing operation would begin, and trees and vegetation would be felled into the space created by the straw bales and silt fence. When clearing and grubbing is complete, the vegetation would be removed by hand or small equipment (Bobcat/Skidsteer). Following the clear-and-grub operations, the straw bales and silt fence would be removed to facilitate cofferdam installation.

It is anticipated the contractor would install either system as close to, but not before, November 1. It would remain in place for 2 to 4 weeks to facilitate clear-and-grub operations. If the turbidity curtain and debris boom system is used, the contractor may opt to leave it in until February 28 to further protect the river environment.

Removing the erosion control system would depend on which system is employed. If the turbidity curtain and debris boom was used, it would be removed using equipment (likely a crane from the bank) to lift the system components and anchorages out. The anchorage connectors and cabling would be removed by hand and carried to the embankment for removal. If the straw bale and silt fence system is used, it would be removed by hand or using small equipment that would carry it to the embankment. Once at the embankment, system components would be removed through the newly built flume structure and moved to the contractor's land use area.

Temporary Gravel Work Platform. Pending verification of ground surface elevations at the shoreline below the top of the bank, the contractor may need to advance a gravel platform onto the shoreline from the bank. This would be necessary to establish a working platform above the *ordinary highwater mark* (OHWM = 342.38 elevation in NAVD88). This working platform would provide a safe, stable base for equipment and personnel to install the temporary cofferdam system and prepare (shape and compact) the foundation for the flume portion of the outlet structure. The depth of the gravel work platform would be no more than 12 inches thick and extend from the riverbank cliff no more than 5 feet. The gravel platform would stay as permanent bedding for the riprap. This gravel pad would be approximately 25 feet wide and placed perpendicular to the shoreline at the outlet site.

The last phase of construction on the shoreline would be the placement of permanent riprap. A 24-inch thick layer of riprap would be placed over the gravel platform previously placed during construction. The coarse riprap would consist of a maximum 12-inch-diameter stone, with a blend of gravel and sand to close void spaces between riprap particles. The riprap would be approximately 25 to 30 feet wide and extend for 5 feet from the embankment.

Temporary Rapidly Deployable Cofferdam System. The historical maximum observed water surface levels in Lake Wallula during the winter construction window leave the unlikely possibility for water to impact the construction of the outlet structure. To mitigate this risk, a rapidly deployable cofferdam system may be installed to maintain a dry working area for construction of the outlet structure. To reduce hauling soils from commercial borrow-sites and to eliminate the need for turbidity monitoring associated with placing fill near the water's edge, earthen cofferdam systems would be prohibited for this project. These cofferdam systems can also hold up to expected boat-wake better than earthen embankments. A rapidly deployable cofferdam system also provides the contractor with the best opportunity to complete the work required within the defined inwater work-window. There are numerous systems and vendors for cofferdams as shown in Figure 9, Figure 10, and Figure 11. The maximum water depth over the shoreline which may occur is approximately 3 feet, and the cofferdam would be sized to resist this condition. This height is well within the performance parameters of these systems that are rated between 6 and 8 feet. The footprint of these cofferdams can vary depending on the specific product but are expected to be approximately 10 feet wide or less. After completion of the flume concrete, the cofferdam is easily and quickly removed with no impact on the existing lakebed.

Figure 9. Tiger Dam™ by International Flood Control Group.

Figure 10. Aqua Barrier™ by HIS Services, Inc.

Figure 11. Porta Dam™ by Porta Dam Inc.

Effects to Salmonids. Reclamation initiated Section 7 consultation with NMFS on October 9, 2018. Reclamation concluded that the proposed action *may affect but is not likely to adversely affect* listed fish species within the action area including UCR spring-run Chinook, UCR steelhead, MCR steelhead, SR spring/summer Chinook, SR fall Chinook, SR Sockeye, and SR steelhead, because the work area would be isolated, and these species would not likely use this area during the proposed fall and winter work window (see Table 3). Reclamation received a letter of concurrence from NMFS, dated November 28, 2018, that the proposed action is *not likely to adversely affect* the species listed above. Reclamation concluded there would be *no effect* to Bull Trout or their critical habitat because of the construction or operation of the PPL 5.8 Wasteway.

Operation of the 5.8 Wasteway would direct return flow to the Columbia River. This flow would occur during irrigation season (generally March to October). The flow range would differ between normal operations and emergency situations. During normal operations, return flow would be between 1 and 5 cfs to the Columbia River. Emergency situations would result in up to 88 cfs of return flow until remedied (usually a few hours). Even if the 5.8 Wasteway spills 88 cfs for a prolonged period (duration of irrigation season), the effects are expected to be insignificant to fish species. Contributions of flow would not exceed 0.1 percent of Columbia River average discharge below Priest Rapids Dam.

As proposed, the project should not have a discernable effect on water quality conditions with respect to DO, pH, and herbicide chemicals in the Columbia River and PPL drainage. SCBID would be required to comply with their NPDES/SWD permit. Nutrients would continue to enter the irrigation facilities causing growth of aquatic plants and algae.

Water temperatures will continue the seasonal trend of lower temperatures in winter and warmer temperatures in summer/fall. The proposed PPL 5.8 Wasteway would be a closed pipe system buried at least 3 feet underground and likely to reduce water temperatures, which would benefit the river and salmonids. Water traveling through and over the concrete baffled outlet and flume, respectively, is expected to be at a depth and velocity that would not result in more than insignificant increases in temperature, even during high summer temperatures.

There may be short-term increases in turbidity during construction of the PPL 5.8 flume, work platform, and riprap placement if water is present. Sediment concerns created by construction and removal of vegetation would be minimized by placement of a turbidity curtain or hay bales and silt fence; a minor sediment plume may occur with the placement and removal of the turbidity barrier. The area would be isolated from fish prior to construction if necessary. Localized turbidity effects are expected to last for a few hours after work is complete. However, it is likely that work would be completed in dry conditions. Riprap is expected to be placed in dry conditions.

For salmonids, turbidity elicits several behavioral and physiological responses (i.e., gill flaring, coughing, avoidance, increase in blood sugar levels) which indicate some level of stress (Bisson and Bilby, 1982; Sigler et al. 1984; Berg and Northcote 1985; Servizi and Martens, 1992). The magnitude of these stress responses is generally higher when turbidity is increased, and particle size decreased (Bisson and Bilby, 1982; Servizi and Martens, 1987; Gregory and Northcote, 1993). Although turbidity may cause stress, Gregory and Northcote (1993) have shown that moderate levels of turbidity (35 to 150 nephelometric turbidity unit [NTU]) are likely to accelerate foraging rates among juvenile Chinook Salmon because of reduced vulnerability to predators (camouflaging effect).

Proposed project timing for the construction of the baffled outlet structure would occur during fall and winter (November through February), when no adult salmonids are observed in the action area and few juvenile salmonids are anticipated to be present (Zimmerman and Rasmussen, 1981).

Installation of the flume, work platform, and riprap could result in effects to juvenile fish in the proposed project area. Mechanical dumping of gravel/riprap and compaction along with subsequent moving of material could lead to physical injury or disturbance to fish occupying the aquatic habitat areas near the construction location. However, the likelihood of entrainment and harassment would be reduced by isolating the work area and completing construction in the fall and winter (November through February) when water levels are low and ESA-listed salmonids are not expected to be present in high densities.

Effects to Salmonid Critical Habitat. Reclamation initiated Section 7 consultation with NMFS on October 9, 2018. Reclamation concluded that the proposed action *is not likely to adversely destroy or modify* designated critical habitat within the action area. Reclamation received a letter of concurrence from NMFS, dated November 28, 2018, that the proposed action is *not likely to adversely affect* the designated critical habitat for the listed species.

Operational use of PPL 5.8 Wasteway would result in an insignificant amount of return flow to the Columbia River. This water currently returns to the Columbia River after infiltrating the soil beneath "Adam's Pond." Water quality and quantity effects are expected to be insignificant.

Construction of PPL 5.8 Wasteway would result in the removal of some streamside vegetation. It is estimated that up to 5 nonnative trees (less than 12-inch diameter) would be removed in addition to shrubs and grasses along 60 feet of streambank. The site would be replanted with native shrubs and grasses after completion. There could be localized effects to critical habitat, but it would be insignificant as the current vegetation is not overhanging and is likely not affecting temperatures or shade due to its location on the streambank.

Sediment generated by project construction would settle within the extent of the turbidity curtain or hay bales. Effects from sedimentation in this area are insignificant due to the size of the work area in relation to Lake Wallula.

The construction of the work platform or the riprap that would extend into the Columbia River would not create any barriers to migration. The area of impact is expected to be less than 150 square feet within the 38,800-acre Lake Wallula.

Table 3. ESA-listed species in the action area

ESU/DPS Name	Effects Determinations for Individuals	Effects Determination for Critical Habitat
Upper Columbia River (UCR) spring-run Chinook Salmon ESU (*Oncorhynchus tshawytscha)*	NLAA	Immeasurable
Upper Columbia River (UCR) steelhead DPS (*O. mykiss*)	NLAA	Immeasurable

ESU/DPS Name	Effects Determinations for Individuals	Effects Determination for Critical Habitat
Middle Columbia River (MCR) steelhead DPS (*O. mykiss*)	NLAA	Immeasurable
Snake River (SR) Spring/Summer Chinook salmon ESU (*O. tshawytscha*)	NLAA	Immeasurable
Snake River (SR) Fall Chinook salmon ESU (*O. tshawytscha*)	NLAA	Immeasurable
Snake River (SR) sockeye ESU (*O. nerka*)	NLAA	Immeasurable
Snake River (SR) steelhead DPS (*O. mykiss)*	NLAA	Immeasurable

NLAA = may affect, not likely to adversely affect
Immeasurable = not likely to adversely destroy or modify critical habitat

Bull Trout. There would be *no effect* to Bull Trout or their critical habitat because of the construction or operation of the PPL 5.8 Wasteway. Operational use of PPL 5.8 Wasteway would result in an insignificant amount of return flow to the Columbia River. This water currently returns to the Columbia River after infiltrating the soil beneath "Adam's Pond". Water quality and quantity effects are expected to be insignificant in the action area, and there are no measurable effects anticipated outside of the action area.

Construction of PPL 5.8 Wasteway would result in the removal of some streamside vegetation. It is estimated that up to five nonnative trees (less than 12-inch diameter) would be removed in addition to shrubs and grasses along 60 feet of streambank (Figure 7). This site would be replanted with native shrubs and grasses after completion. There are no anticipated effects to recruitment or temperature.

Sediment generated by construction of the project would settle-out within the extent of the turbidity curtain or hay bales. Effects from sedimentation in this area are insignificant due to the size of the work area in relation to Lake Wallula. Bull Trout would not be expected within or adjacent to the action area during construction.

The construction of the work platform or the riprap that would extend into the Columbia River would not create any barriers to migration. The area of impact is expected to be less than 150 square feet within the 38,800-acre Lake Wallula. Reclamation does not believe that Bull Trout would be affected by this structure due to lack of presence.

Effects to Gray Wolf. There would be *no effect* to this species or their critical habitat. Gray wolf has been reported in southeast Washington; however, the action area is in a developed suburban area. Human presence and lack of available prey make this area unsuitable for wolves.

Effects to Yellow-billed Cuckoo. There are no known populations or individual yellow-billed cuckoos in the action area. In addition, there is a lack of suitable habitat due to development and conversion of riparian areas to agriculture uses and prevalence of undesirable invasive species. Therefore, there would be *no effect* to this species. There is no yellow-billed cuckoo DCH in or adjacent to the action areas; therefore, there would be *no effect* to this species' DCH.

Construction Timing: Reclamation initiated Section 7 consultation with NMFS on October 9, 2018. Reclamation concluded that the proposed action is *not likely to adversely affect* listed fish species within the action area including UCR spring-run Chinook, UCR steelhead, MCR steelhead, SR spring/summer Chinook, SR fall Chinook, SR Sockeye, and SR steelhead, because the work area would be isolated and these species would not likely use this area during the proposed fall and winter work window (November 1 through February 28). Reclamation received a letter of concurrence from NMFS, dated November 28, 2018, that the proposed action is *not likely to adversely affect* the species listed above, and that the proposed action is *not likely to adversely affect* the designated critical habitat for the listed species.

All outlet construction associated activities, described above in "Construction Activities," must occur within this timeframe to comply with the letter of concurrence, 404 permit, and HPA permit.

O&M: SCBID would continue to comply with their NPDES/SWD permit which would minimize impacts on salmonids.

Mitigation: The revegetation action of 1-to-1 planting of chokecherry or Coyote Willow as outlined in the MOA is consistent with the requirements of the letter of concurrence.

3.9.3 Cumulative Effects

Reclamation is not aware of any past, present or reasonably foreseeable actions likely to coincide with construction of the Proposed Action, in time and proximity, such that cumulative impacts would occur to threatened and endangered species.

3.10 Public Safety, Access, and Transportation

3.10.1 Affected Environment

The affected environment is just outside the City of Pasco growth boundary and along Dent Road and the visual extension of Dent Road towards the Columbia River and is, generally, accessible by multiple cross streets. "Adams Pond" is located on private property off Powerline Road.

3.10.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Under the No Action Alternative, the proposed 5.8 Wasteway Pipeline alignment would not impact public safety, access, or transportation.

Flooding property and roadways is a public safety issue around "Adams Pond." Emergency evacuation of water from the PPL down the 6.0 Wasteway would result in water going through the culvert, under Powerline Road, and into "Adams Pond." The culvert may not be able to withstand sustained flows of 88 cfs for a couple of hours, and the road could be damaged or washed out. If there was damage to Powerline Road, public access and transportation issues could arise until the road was repaired.

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Real Estate Actions: There would be no effects to public safety, access, and transportation. Completion of the AAIs for the land acquisitions would affirm that the 5.8 Wasteway Pipeline is not going through a Superfund site, so there would be no public safety concerns.

Construction Activities: Implementation of the Project may have negligible short-term effects during construction and no long-term effects on public safety, access, and transportation. While construction itself would have no long-term effects, implementing the 5.8 Wasteway Pipeline Project with the planned future development along Powerline Road would increase public safety and maintain the current access and transportation values of the road. The increase in safety would be a direct result of eliminating the inundation on private land at "Adams Pond" and would be a long-term beneficial impact of Project implementation.

The Project can be accessed from several cross streets and major roadways within Franklin County. The transportation impact areas include roads that would be used during construction and O&M. The approved transportation routes west and north of Dent Road are shown in Figure 1. During construction, most vehicle trips would be for transporting construction materials including concrete, pipe, and excavation or backfill materials. The contractor would transport heavy equipment at the beginning and end of the Project.

Private driveways would be disturbed during construction of the pipeline. The contractor would be required to make reasonable effort to minimize interruptions to local landowners. Driveways would be returned to as-good-as or better-than preconstruction conditions.

The integrity of Powerline Road would not be jeopardized by the emergency evacuation of 88 cfs down the 6.0 Wasteway with the construction of the 5.8 Wasteway. As part of the proposed action, the culvert under Powerline Road would be plugged to prevent water reaching the private property on which "Adams Pond" sits. Any excess water spilled down the 6.0 Wasteway would be greatly diminished and would only be the carriage water required to make deliveries to SCBID patrons on the 6.0 lateral. This amount of excess water would be contained within Reclamation's existing easement south of the 6.0 Wasteway and north of Powerline Road.

Construction Timing: There would be temporary, short-term impacts during construction for access and transportation. The contractor would provide a traffic control plan that is consistent with Franklin County requirements. The traffic plan would be submitted per environmental commitment A.10 in Appendix A. Dent Road is both an active school-bus

route and a designated emergency vehicle route. The plan would make necessary accommodations to maintain access for these vehicles and local traffic in the Project area.

O&M: There would be no effects to public safety, access, or transportation.

Mitigation: There would be no effects to public safety, access, or transportation.

3.10.3 Cumulative Impacts

Reclamation is not aware of any past, present, or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur on public safety, access, or transportation.

3.11 Environmental Justice and Socioeconomics

In August 1994, the Secretary of the Interior established an environmental justice policy based on Executive Order 12898, dated February 11, 1994. This policy requires departmental agencies to identify and address any disproportionate environmental impacts of their proposed actions on minority and low-income populations and communities, as well as the equity of the distribution of benefits and risks of those decisions. Environmental justice addresses the fair treatment of people of all races and incomes with respect to actions affecting the environment. Fair treatment implies that no group should bear a disproportionate share of negative impacts.

Socioeconomics evaluates how population, employment, housing, and public services might be affected by the No Action and Proposed Action Alternative.

3.11.1 Affected Environment

The PPL 5.8 Wasteway is in Franklin County in a semirural part of Pasco and just outside the Urban Growth Area Boundary (Franklin County, 2008). The county was selected as the local study area. Table 4 provides the number and percentage of population for seven racial categories: White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian, and Other Pacific Islander, Two or More Races, and Hispanic or Latino (U.S. Census Bureau, 2017).

Table 4. Race and Hispanic origin for Franklin County and Washington State

Race and Hispanic Origin	Percent in Franklin County	Percent in Washington State
White alone, percent [a]	90.1	79.5
Black or African American alone, percent [a]	2.8	4.2
American Indian and Alaska Native alone, percent [a]	1.7	1.9
Asian alone, percent [a]	2.4	8.9
Native Hawaiian and Other Pacific Islander alone, percent [a]	0.4	0.8
Two or More Races, percent	2.6	4.7

Race and Hispanic Origin	Percent in Franklin County	Percent in Washington State
Hispanic or Latino, percent [b]	53.3	12.7
White alone, not Hispanic or Latino, percent	40.3	68.7

Data from https://www.census.gov/quickfacts/fact/table/franklincountywashington/PST045217#qf-headnote-a

[a] Includes persons reporting only one race

[b] Hispanics may be of any race, so also are included in applicable race categories.

Low-income populations are identified by several socioeconomic characteristics. Specific characteristics include income (median family and per capita), percentage population below poverty (families and individuals), unemployment rates, and substandard housing. Table 5 provides median household income, per capita income, and persons below poverty level for Franklin County and the State (U.S. Census Bureau, 2018). The additional criteria of unemployment and substandard housing information was not available in the summary of census information.

Table 5. Socioeconomic characteristic for Franklin County and Washington State (2012–2016).

Socioeconomic Characteristic	Franklin County	Washington State
Median household income	$58,284	$62,848
Per capita income in past 12 months	$20,997	$32.999
Individuals – percent below poverty level	14.9%	11.3%

Median household income for Franklin County is $58,284, less than the State's average of $62,848. Compared to the State of Washington, the study area has a greater percentage of families and individuals below the poverty level. The unemployment rate also characterizes demographic data in relation to environmental justice. In 2016, there were 33,717 jobs in Franklin County covered by unemployment insurance, with a total payroll of more than $1.3 billion (ESD, 2017).

3.11.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

No impacts would occur since there would be no construction of the 5.8 Wasteway Pipeline or plugging of the culvert under Powerline Road

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities: Implementation of the proposed action would not disproportionately (unequally) affect any low-income or minority communities within the Project area. The proposed Project would not involve major facility construction, population relocation, health hazards, hazardous waste, or substantial economic impacts. There would be no irrigation water delivery interruptions to SCBID stakeholders. The PPL would provide the needed water supply to customers during the irrigation season because construction of the inlet from the PPL to the 5.8 Wasteway would be constructed during the non-irrigation

season (November through February). The irrigation wastewater or emergency spill water would be conveyed directly from the PPL to the Columbia River; therefore, there would be no private benefit to landowners in the proposed development receiving irrigation water. This action would, therefore, have no adverse human health or environmental effects on minority or low-income populations.

Construction Timing: There would be no effects to environmental justice or socioeconomics.

O&M: There would be no effects to environmental justice or socioeconomics.

Mitigation: There would be no effects to environmental justice or socioeconomics.

3.11.3 Cumulative Impacts

The cumulative impact of implementing the 5.8 Wasteway Pipeline Project with the planned future development along Powerline Road would result in a beneficial impact on environmental justice or socioeconomics if low income housing is placed near "Adams Pond." Otherwise, there would be no cumulative impact on environmental justice or socioeconomics as a result of future development and Project implementation.

3.12 Wetlands

3.12.1 Affected Environment

Columbia River. The flume sits on a perched bank approximately 13 to 14 feet above the Columbia River. Ordinary high water is near the toe of this slope, and there is a sharp transition to upland conditions due to the elevation change.

"Adams Pond." The PPL is approximately 8 miles long with several pumping plants, delivery points, and wasteways (Figure 1). The existing PPL 6.0 Wasteway ultimately empties into a depression commonly called "Adams Pond," which has no defined overflow relief capability and is not within SCBID's service area.

Downstream from the PPL 6.0 Wasteway is the PPL 6.2 Pumping Plant, which is a re-lift plant that pumps water to a higher level, 6.2 miles from the origin of the PPL. Occasionally, the PPL 6.2 Pumping Plant shuts down, and water within the PPL backs up and flows through existing PPL 6.0 pipeline and then into the 6.0 Wasteway, and ultimately into "Adams Pond" on private property via a culvert under Powerline Road. Pump shutdowns often result in flooding of property around the pond.

Based on roadside observation and Google Earth images, "Adams Pond" has developed wetland characteristics since the topographical low was impounded by a dike in 1948; therefore, it is an irrigation-induced wetland. The "Adams Pond" elevation fluctuates throughout the year and is highly influenced by the SCBID's irrigation season through surface waterflow from PPL 6.0 Wasteway. During the irrigation season, the pond's elevation is higher than in the non-irrigation season.

During irrigation season, "Adams Pond" receives an intermittent flow of 2-plus cfs to provide the neighboring landowner's requested water delivery; the water recipient is a SCBID patron eligible to receive the irrigation water. Due to the arid conditions experienced in Pasco, "Adams Pond" receives very little surface water runoff from the road surface.

3.12.2 Environmental Consequences

No Action Alternative: Use Existing Wasteway

Under No Action Alternative and normal operating conditions during the irrigation season, "Adams Pond" would continue to receive an intermittent flow of 2-plus cfs. During the 2018 irrigation season, the adjacent landowner indicated he would likely request irrigation water during the 2019 season (O'Callaghan, 2019). If the 6.2 Pumping Plant shuts down, water in the PPL would continue to back up and flow through the PPL 6.0 pipeline and wasteway, and ultimately into "Adams Pond" on private property. Currently, only one private landowner is affected by operational or emergency conditions that sends 88 cfs into "Adams Pond;" if the area is further developed as proposed by the City of Pasco, more private landowners could be affected depending on density of development.

Under No Action, the adjacent landowner may elect not to continue irrigating with water from "Adams Pond." The adjacent landowner has reduced his irrigation water order the last few years and has indicated he may quit requesting water. If this were to occur, the pond would likely dry up. Because the pond is private property, the use of the land is at the landowner's discretion. However, under No Action, if there was an emergency evacuation of the water in the PPL, such as the pumping plant shutting down, then "Adams Pond" would still receive 88 cfs of water as described above with the same potential impacts.

Proposed Action Alternative: Construct PPL 5.8 Wasteway Pipeline

Construction Activities:

Columbia River. There would be no impacts on wetlands along the Columbia River as a result of constructing the outlet structure at the shoreline of Lake Wallula. Reclamation's wetlands specialist visited the flume location on the Columbia River several times in 2018. Observations at the site did not find evidence of wetland indicators; therefore, a wetland delineation was not completed at this site.

"Adams Pond." To prevent water from reaching "Adams Pond," the culvert south of the existing 6.0 Wasteway would be plugged with an impermeable barrier as part of the proposed action, which would halt project water at the end of Reclamation's 6.0 Wasteway easement or at the end of the 6.0 Lateral, both under Federal ownership. The culvert is north of Powerline Road about one-half mile west of the intersection of Powerline Road and Broadmoor Boulevard (Figure 6). SCBID would plug the culvert after the contractor completes the 5.8 Wasteway. Plugging the culvert would not require trenching or excavation.

This alternative would eliminate the adjacent landowner's access to irrigation water from "Adams Pond" and emergency spill from reaching private property after it has exited the 6.0

Wasteway. Under emergency conditions or outages at the 6.2 Pumping Plant, water would back up in the PPL and spill at the proposed 5.8 Wasteway.

SCBID completed the *Investigation into the Water Source for the Ponds in Block 1* report in February 2018. Results of the report indicated that "Adams Pond," located in Block 1, is not influenced by groundwater. Furthermore, previous practices show the pond can be drained, which indicates that groundwater is not sustaining "Adams Pond;" therefore, the wetland would not be self-sustaining with the elimination of irrigation water.

Disappearance of a wetland because of irrigation system improvement is not regulated under Section 404 of the CWA. That said, Executive Order 11990 still requires each agency "to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands," and to "take action to minimize the destruction, loss or degradation of wetlands." In carrying out this directive, section 5 of Executive Order 11990 requires each agency to consider relevant factors including, among others, "public health, safety, and welfare" and "maintenance of natural systems." Maintaining public health, safety, and welfare is a central purpose of this alternative, because it will mitigate the risk of flooding associated with the use of the PPL 6.0 Wasteway. The pond is also not a "natural system." But rather, the result of uncontrolled drainage from a man-made canal. For these reasons, it is not practically possible to mitigate the flooding risk without eliminating the drainage problem that created "Adams Pond" in the first place. It follows that this alternative does not run afoul of the requirements in Executive Order 11990. Additionally, Reclamation has no authority or responsibility to create, maintain, or manage wetlands on private property. In the case of "Adams Pond," which exhibits wetland characteristics based on observations from Powerline Road and Google earth images, the landowner has requested Reclamation to terminate the flow under normal and emergency conditions.

Construction Timing: There would be no effects to wetlands because of construction timing.

O&M: There would be no effects to wetlands from SCBID conducting O&M activities.

Mitigation: There would be no effects to wetlands from activities identified in the MOA.

3.12.3 Cumulative Impacts

Reclamation is not aware of any past, present, or reasonably foreseeable actions likely to coincide with construction of the Project, in time and proximity, such that cumulative impacts would occur on wetlands.

Chapter 4 Consultation and Coordination

Reclamation consulted with Federal agencies, Tribes, and State agencies during the preparation of this EA.

4.1 ESA Section 7 Consultation

The effects of activities related to this action are addressed in Reclamation's BA. Reclamation received a letter of concurrence from NMFS.

4.2 Tribal Consultation

The Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Colville Indian Reservation will be notified when the final EA is released, as part of Tribal outreach by Reclamation. These three Tribes have been consulted under Section 106, and they have participated in the development of the MOA to resolve the adverse effect to Tamántawla, especially in consideration of its value as a TCP.

4.3 Coordination

Reclamation prepared this EA with an interdisciplinary approach to comply with the mandate of the NEPA to, "…. utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment" (40 CFR 1501.2(a)). The following resource specialists and principal disciplines were involved with preparation of this EA:

- Elizabeth Heether, Environmental Protection Specialist; Reclamation
- Dr. Sean Hess, Archaeologist; Reclamation
- Shannon Archuleta, Fisheries Biologist; Reclamation
- Kelsey Doncaster, Historian; Reclamation
- Steven Wake, Supervisory Realty Specialist; Reclamation
- Jeremy Lorberau, PE, Water Conveyance Group Engineer; Reclamation
- Fernando Castaneda, PE, Geotechnical Engineer; Reclamation
- Gina Hoff, Water Quality Specialist; Reclamation
- John O'Callaghan, Assistant Manager, Technical Services; SCBID
- Dave Solem, Manager; SCBID

Reclamation worked with the following agencies during the development of this EA or supporting documents:

- National Marine Fisheries Service

- Washington State Historic Preservation Office
- Confederated Tribes and Bands of the Yakama Nation
- Confederated Tribes of the Umatilla Indian Reservation
- Confederated Tribes of the Colville Indian Reservation
- Environmental Protection Agency
- Washington State Department of Ecology
- U.S. Army Corps of Engineers
- Franklin County Planning and Building Department

4.4 Permits and Authorizations Needed

Reclamation or its contractor would obtain all necessary Federal, State, and local exemptions prior to implementation of the proposed action. These permits, authorizations, reviews, or exemptions may include items displayed in Table 6**.**

Table 6. Permits, authorizations, review, or exemptions that may be needed

Authority	Permit/Authorization Needed	Responsible Agency
Endangered Species Act of 1973	Letter of Concurrence	National Marine Fisheries Service
Clean Water Act	Section 404-Nationwide Permit 12	U.S. Army Corps of Engineers Regulatory Division
Clean Water Act	Construction General Stormwater NPDES Permit	Washington State Department of Ecology
Hydraulic Code Chap. 77.55 RCW	Hydraulic Project Approval	Washington State Department of Fish and Wildlife
Shoreline Management Act	Shoreline Substantial Development Permit Exemption	Franklin County Planning and Building Department
	Real estate instrument	U.S. Army Corps of Engineers Real Estate Division

Chapter 5 References

Citation in text	Literature
50 CFR Part 14 1999	Code of Federal Regulations. 1999. 50 CFR Part 14. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for Bull Trout in the Coterminous United States; Final Rule. *Federal Register* Vol. 64, No. 210, November 1, 1999. Rules and Regulations. Pp. 58910 – 58933.
50 CFR Part 17 1975	Code of Federal Regulations. 1975 50 CFR Part 17. Code of Federal Regulations Amendments to Lists of Endangered Fish and Wildlife. *Federal Register* Vol. 38, No. 106, June 4, 1973. Pp. 14678.
50 CFR Part 17 1998	Code of Federal Regulations. 1998.50 CFR Part 17. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Klamath River and Columbia River Distinct Population Segments of Bull Trout; Final Rule. *Federal Register* Vol. 63, No. 111, June 10, 1998. Rules and Regulations. Pp. 31647 – 31674.
50 CFR Part 17 1999	Code of Federal Regulation. 1999. 50 CFR Part 17. Code of Federal Regulations Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Jarbidge River Population Segment of Bull Trout; Final Rule. *Federal Register* Vol. 64, No. 67, April 8, 1999. Rules and Regulations. Pp. 17110 – 17125.
50 CFR Part 17 2004	Code of Federal Regulations. 2004. 50 CFR Part 17. Code of Federal Regulations Designation of critical habitat for the Klamath River and Columbia River populations of bull trout; final rule. *Federal Register* Vol. 69, No. 193, Wednesday, October 6, 2004. Rules and Regulations. Pp. 59995 – 60076.
50 CFR Part 17. 2009	Code of Federal Regulations. 2009. 50 CFR Part 17. Endangered and Threatened Wildlife and Plants; Final Rule to Identify the Northern Rocky Mountain Population of Gray Wolf as a Distinct Population Segment and to Revise the List of Endangered and Threatened Wildlife. *Federal Register* Vol. 74, No. 62, April 2, 2009. Rules and Regulations. Pp. 15123 - 15188.
50 CFR Part 17. 2013	Code of Federal Regulations. 2013. 50 CFR Part 17. Endangered and Threatened Wildlife and Plants; Removing the Gray Wolf (*Canis lupus*) From the List of Endangered and Threatened Wildlife and Maintaining Protections for the Mexican Wolf (*Canis lupus baileyi*) by Listing It as Endangered; Proposed Revision to the Nonessential Experimental Population of the Mexican Wolf; Proposed Rules. *Federal Register* Vol. 78, No. 114, Thursday, June 13, 2013. Proposed Rules. Pp. 35663 - 35719.

Citation in text	Literature
50 CFR Part 17. 2014	Code of Federal Regulations. 2014. 50 CFR Part 17.- Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-Billed Cuckoo (*Coccyzus americanus*). *Federal Register* Vol. 79, No. 218, November 12, 2014. Pp. 59991 – 60038.
50 CFR Part 17. 2014	Code of Federal Regulations. 2014. 50 CFR Part 17. - Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo (*Coccyzus americanus*). *Federal Register* Vol. 79, No. 218, November 12, 2014. Pp. 67154 – 67155.
74 FR 15123	*Federal Register*. 1974. 74 FR 15123 – Endangered and Threatened Wildlife and Plants; Final Rule to Identify the Northern Rocky Mountain Population of Gray Wolf as a Distinct Population Segment and to Revise the List of Endangered and Threatened Wildlife. Vol. 74. No. 62 April 2, 2009.
Berg and Northcote 1985	Berg, L., and T. G. Northcote. 1985. Changes in territorial, gill-flaring, and feeding behavior in juvenile Coho Salmon (*Oncorhynchus kisutch*) following short-term pulses of suspended sediment. *Can. J. Fish. Aquat. Sci.* 42: 1410-1417
Bison and Bilby 1982	Bisson, P. A., and R. E. Bilby. 1982. Avoidance of suspended sediment by juvenile Coho Salmon. *N. Am. J. Fish. Manage*. 4: 371-374.
Corps 1989	U.S. Army Corps of Engineers. 1989. Annual fish passage report, Columbia and Snake River projects. Corps, Portland District, Portland, Oregon, and Walla Walla District, Walla Walla, Washington
Corps 2017	U.S. Army Corps of Engineers. 2017. McNary Lock and Dam. Retrieved November 15, 2017, from http://www.nww.usace.mil.
Dickson, Shellenburger 2018	Dickson, C., Shellenberger, J. 2018. Personal communication with Sean C. Hess, Ph.D.,Regional Archaeologist, Pacific Northwest Region Office, Bureau of Reclamation.
DOI 1995	U.S. Department of the Interior. 1995. *Departmental Manual*. Part 512.2. Departmental Responsibilities for Indian Trust Assets. Office of the Secretary of the Interior. December 1, 1995.

Citation in text	Literature
DOI 2000	U.S. Department of the Interior. 2000. *Departmental Manual*, Part 303, Indian Trust Responsibilities. Office of the Secretary of the Interior. October 31, 2000.
Doncaster 2014	Doncaster, Kelsey. 2014. *Pasco Pump Lateral Main Canal Historic Property Inventory Report*. Washington Department of Archeology and Historic Preservation. Olympia, Washington.
EPA 2017	U.S. Environmental Protection Agency. 2017. Irrigation System Aquatic Weed Control National Pollutant Discharge Elimination System (NPDES) Permit and State Waste Discharge General Permit WA0991000.
ESD 2017	Washington State Employment Security Department. 2017. Franklin County Profile. September 2017. Website accessed August 30, 2018. https://esd.wa.gov/labormarketinfo/county-profiles/franklin
Faler et al 1988	Faler, M. P.; L. M. Miller and K. I. Welke. 1988. Effects of variation in flow on distributions of northern squawfish in the Columbia River below McNary Dam. *North American Journal of Fish Management.* 8: 30-35.
Federal Register 1994	*Federal Register*. 1994. President William J. Clinton's Memorandum on Government-to-Government Relations with Native American Tribal Government. Vol. 59. No. 85 Published May 4, 1994. https://www.govinfo.gov/content/pkg/WCPD-1994-05-02/pdf/WCPD-1994-05-02-Pg936.pdf
Franklin County 2008	Franklin County. 2008. *Growth Management Comprehensive Plan.* Resolution Number 2008-089. Adopter February 27, 2008.
Franklin County 2016	Franklin County. 2016. *Franklin County Shoreline Master Program Update*. Prepared by Anchor QEA, Kennewick, Washington. Prepared for Franklin County, Washington. Adopted January 20, 2016; effective November 14, 2016. Pasco, Washington. Accessed online on November 21, 2017, at http://www.ecy.wa.gov/programs/sea/shorelines/smp/pdf/FranklinCoSMPNov142016.pdf
Gregory and Northcote 1993	Gregory, R. S., Northcote, T., G. 1993. Surface, Planktonic, and Benthic Foraging by Benthin Juvenile Chinook Salmon (*Oncorhynchus tshawytscha*) in Turbid Laboratory Conditions. *Can. J. Fish. Aquat. Sci*. 50: 233-240.

Citation in text	Literature
Hess, Doncaster, Hurley 2018	Hess, Sean C., Kelsey Doncaster, and Warren Hurley. 2018. *Revised - Pasco Pump Lateral 5.8 Wasteway Project: Finding of Effects under Section 106 of the National Historic Preservation Act.* Bureau of Reclamation, Boise, Idaho.
Hunn et al. 2015	Hunn, Eugene S. 2015. E. Thomas Morning Owl, Phillip E. Cash and Jennifer Karson Engum, with Daniel B. Haug, Roberta L. Conner, Bruce J. Rigsby, John M. Chess, and Modesta J. Minthorn. *2015. Čáw Pawá Láakni They Are Not Forgotten: Sahaptian Place Names Atlas of the Cayuse, Umatilla, and Walla Walla. Tamástslikt Cultural Institute, Pendleton, Oregon.* P .98
Keeler 2017	Keeler, Carson. 2017. 2016 Summary Results of the Water Quality Fixed-Site Monitoring Program within the Priest Rapids Hydroelectric Project. Public Utility District No. 2 of Grant County. February 2017. Ephrata, Washington.
Kildall 2018	Kildall, Candice. 2018. *Investigation into the Water Source for the Pond in Block 1.* South Columbia Basin Irrigation District, Pasco, Washington.
Kohler, David.	Kohler, David. 2017. Personal communication with Sean Hess, Regional Archaeologist.
O'Callaghan 2017	O'Callaghan, John. 2017, personal communication. Email from John O'Callaghan (Assistant Manager, Technical Services South Columbia Basin Irrigation District) to Elizabeth Heether (Bureau of Reclamation, Columbia Cascades Area Office, Yakima, Washington). Subject: Fwd: Drains into the PPL and PPL4.3 modifications, provided written description of drainage issue and corrective measures, as well as Compliance notifications to the Washington State Department of Ecology. December 21, 2017.
RCW 1905	*Revised Code of Washington*, Chapter 90.40.020. Right to use water courses. [1905 c 88 §2; RRS § 7409]. Washington State Legislature. 1905. https://app.leg.wa.gov/RCW/default.aspx?cite=90.40.020 (accessed October 23, 2018).
RCW 1971	*Revised Code of Washington*. 1971 Chapter 90.58, Shoreline Management Act of 1971. Washington State Legislature. Available online at: https://app.leg.wa.gov/RCW/default.aspx?cite=90.58

Citation in text	Literature
RCW 1973	*Revised Code of Washington* (RCW). 1973 Chapter 90.48, Water Pollution Control. [1973 c155 § 1; 1945 c 216 § 1; Rem. Supp. 1945 § *10964a*.]. Available online at: https://apps.leg.wa.gov/RCW/default.aspx?cite=90.48 (accessed February 11, 2018).
Reclamation 2017	Bureau of Reclamation. 2017. *Geologic Report, Pasco Pump Lateral 5.8 Wasteway, Columbia Basin Project, Washington*. Pacific Northwest Region. Boise, Idaho. December 2017, updated April 2018.
WQTR 2018	Water Quality Technical Report. 2018. *Water Quality Technical Report for the Proposed Pasco Pump Lateral 5.8. Columbia Basin Irrigation Project, Ephrata Field Office. Ephrata, Washington*. Bureau of Reclamation.
Relander 1956	Relander, Click. 1956. *Drummers and Dreamers: The Story of Smowhala, the Prophet and His Nephew Puck Hyah Toot, the Last Prophet of the Nearly Extinct River People, the Last Wanapums.* The Caxton Printers, Ltd. Caldwell, Idaho.
RHA 2016	RHA. 2016. Value Engineering Study Report, Value Engineering Workshop, December 5-8, 2016, Pasco Pump Lateral Conduit Project, Pasco, WA. Prepared by RHA for Bratslavsky Consulting Engineers. December 2016.
Servizi and Martens 1987	Servizi, J. A., and D. W. Martens. 1987. Acute Toxicity of Garlon 4 and Roundup Herbicides to Salmon, Daphnia and Trout. *Bulletin of Environmental Contamination and Toxicology*. 39: 15-22.
Servizi and Martens 1993	Servizi, J. A., and D. W. Martens. 1992. Sublethal responses of Coho Salmon (*Oncorhynchus kisutch*) to suspended sediments. *Can. J. Fish. Aquat. Sci*. 49: 1389-1395.
Sigler and Bjornn 1984	Sigler, J. W., Bjornn, T. C., Everest, F. H. 1984. Effects of Chronic Turbidity on Density and Growth of Steelhead and Coho Salmon. *Transactions of the American Fisheries Society* 113: 142-150.
Spence et al. 1996.	Spence, B. C., G. A. Lomnicky, R. M. Hughes, and R. P. Novitzki. 1996. An ecosystem approach to Salmonid conservation. TR-4501-96-6057. ManTech Environmental Research Services Corp., Corvallis, Oregon.
Tabor et al. 1993	Tabor, R. A.; R.S. Shivley and T. P. Poe. 1993. Predation on juvenile Salmonids by smallmouth bass and northern squawfish in the Columbia River near Richland, Washington. *N. Am. J. Fish. Manage*. 13: 831-838.

Citation in text	Literature
U.S. Census Bureau 2017	U.S. Census Bureau 2017. *Quickfacts* Website accessed August 30, 31, 2018 https://www.census.gov/quickfacts/franklincountywashington
USFWS 2018	U.S. Fish and Wildlife Service. 2018. Sacramento Fish and Wildlife Office. Western Yellow-billed Cuckoo. November 30, 2017. Accessed website at https://www.fws.gov/sacramento/es_species/Accounts/Birds/yellow_billed_cuckoo/
USGS 2018	U.S. Geological Survey. 2018. SGS 12472800, Columbia River Below Priest Rapids Dam near the Tri-Cities, Washington. Available online at: https://waterdata.usgs.gov/nwis/uv?site_no=12472800 (accessed December 11, 2018).
WAC 2016.	Washington Administrative Code. 2016. Chapter 173-201A Water Quality Standards for Surface Waters of the State of Washington. Washington State Department of Ecology. Revised October 2017. Publication No. 06-10-091. Available online at: https://fortress.wa.gov/ecy/publications/publications/0610091.pdf (last accessed February 11, 2018).
Wydoski and Whitney 1979	Wydoski, R. S. and R. R. Whitney. 1979. *Inland Fishes of Washington.* Univ. of Washington Press, Seattle, WA. 220 p.
Zimmerman and Rasmussen 1981	Zimmerman, M. A., and Rasmussen, L. A. 1981. *Juvenile Salmonid Use of Three Columbia River Backwater Areas Proposed for Sub-impoundment.* Department of Interior, Fish and Wildlife Service

This page intentionally left blank.

Appendix A – Environmental Commitments Checklist

The following Environmental Commitments Checklist has been prepared to ensure the environmental commitments are met as relied upon for the environmental assessment (EA) and finding of no significant impact (FONSI) completed for the Pasco Pump Lateral 5.8 Wasteway Project pursuant to the National Environmental Policy Act (NEPA).

Reclamation is the lead Federal agency with primary responsibility for complying with the NEPA on the Project, and Reclamation's Pacific Northwest Construction Engineering Group (PNCEG) would ensure the contractor implements the environmental commitments contained in the EA and FONSI by way of this Environmental Commitments Checklist. The environmental commitments represent mitigation measures and best management practices (BMPs) to avoid, minimize, rectify, reduce, eliminate or compensate for impacts caused by implementation of the Project.

Most of the Project's impacts are short term and generally occur during the construction period. Project design and implementation of site-specific or selectively recommended BMPs would minimize the effect of the Project where the potential for long-term adverse impacts could occur without them. The PNCEG and contractor would use this checklist to document compliance with each commitment, and the contractor would submit the relevant component of the completed checklist to PNCEG with each required performance report.

This page intentionally left blank.

No.	Environmental Commitments: Preconstruction Mitigation Measure or Project Design Feature	Date of Compliance
A.01	The limits of construction activities would be predetermined, with activity restricted to, and confined within, these limits. Reclamation has established an area of potential effect (APE) confined to specific rights-of-way for Project construction, and these serve as limits not to be exceeded; however, the specification directs the contractor to minimize their impact on resources within those extents and to define their site use in the site plan.	
A.02	A Land Use and Site Restoration Plan will be developed prior to construction, acknowledging and identifying vegetation loss areas. Vegetation shall be mitigated in accordance with the Site Restoration Plan prepared for the Project to mitigate fish and wildlife values that will be forgone as a result of the Project. The contractor is responsible for replanting trees along the shoreline 1-to-1 for those removed during construction. In construction areas where recontouring is not required, vegetation would be left in place wherever possible to avoid excessive root damage and allow for re-sprouting. All revegetation, trees and seed, will be native species and comply with other requirements in the specification.	
A.03	The PNCEG Inspector or designee shall provide an environmental briefing to the contractor and any subcontractors in a preconstruction meeting. Such an environmental briefing shall include, at a minimum, a review of the environmental commitments described in this checklist.	
A.04	A spill response plan shall be prepared in advance of construction by the contractor for areas of work where spilled contaminants could flow into water bodies. All employees and workers, including those under separate contract, shall be briefed and made familiar with this plan.	
A.05	Onsite supervisors and equipment operators shall be trained and knowledgeable in the use of spill containment equipment.	

No.	Environmental Commitments: Preconstruction Mitigation Measure or Project Design Feature	Date of Compliance
A.06	Prior to construction, all construction personnel would be instructed on the protection of cultural, paleontological, and archaeological resources. The Archeological Construction Monitoring, Post-review Discoveries Plan, and Inadvertent Discoveries Plan would be reviewed with all workers. All contractors, subcontractors, Reclamation employees, and Archaeological Monitors will comply with all facets of the Archeological Construction Monitoring, Post-review Discoveries Plan, and Inadvertent Discoveries Plan.	
A.07	The construction contractor shall submit the Stormwater Management Plan to the Washington State Department of Ecology (Ecology), if needed, prior to construction disturbance.	
A.08	The construction contractor shall obtain CWA Section 402 Storm Water Discharge Permit compliant with the National Pollutant Discharge Elimination System (NPDES) from Ecology, if needed, prior to construction disturbance.	
A.09	All construction vehicle movement outside of the rights-of-way would be restricted to predesignated access or public roads.	
A.10	Traffic control measures shall be coordinated by the construction contractor with Franklin County entities prior to working in the rights-of-way on Dent Road and included in their Traffic Control Plan. Coordination may include but is not limited to Franklin County Public Works, Franklin County Sheriff, emergency services, and Pasco School District.	
A.11	Utility clearances shall be obtained by the construction contractor prior to construction activities.	
A.12	Archaeological monitoring of construction will take place during excavations or ground-disturbing activities associated with construction of the PPL 5.8 Wasteway on the low terrace and the adjacent slope to the east.	

No.	Environmental Commitments: Preconstruction Mitigation Measure or Project Design Feature	Date of Compliance
A.13	Archaeological monitors shall be present any time excavations or other work is conducted from the maintenance hole, which would be installed at Station 58+84.77, to Station 73+86.76, where the outlet will be located. Reclamation will monitor the placement of survey markers that involves removal of vegetation, especially in the strip of riparian vegetation along the river.	
A.14	Construction limits shall be clearly flagged onsite to avoid unnecessary plant loss or ground disturbance. Additional flagging is required for protection of archaeological resources as identified in the specification.	
A.15	The contractor would mark the exterior boundaries of the right-of-way with survey markers. The intervals may be varied at the time of staking at the discretion of the authorized officer. The tops of the stakes and/or laths would be painted or flagged in a distinctive color. The survey station numbers would be marked on the boundary stakes and laths, as appropriate. Contractor would maintain all boundary stakes and laths in place until final cleanup and restoration are completed and approved by the authorized officer. The stakes and/or laths would then be removed at the direction of the authorized officer.	

No.	Environmental Commitments: Postconstruction Mitigation Measure or Project Design Feature	Date of Compliance
B.01	All construction activities shall be confined to rights-of-way Reclamation holds.	
B.02	Archaeological monitoring of construction will take place during excavations or ground-disturbing activities associated with construction of the PPL 5.8 WW on the low terrace and the adjacent slope to the east. Archaeological monitors shall be present any time that excavations or other work are conducted from the maintenance hole, which is to be installed at Station 58+84.77, to Station 73+86.76, where the outlet will be located. Reclamation will monitor the placement of survey markers that involves removal of vegetation, especially in the strip of riparian vegetation along the river. Reclamation will monitor the following activities: Placement of survey markers that involves removal of vegetation, especially in the strip of riparian vegetation along the river. Clearing and grubbing, especially of the vegetation along the river's edge. Excavation for the installation of the maintenance hole and the trench for the buried wasteway. Placement of forms for the concrete outlet structure at the discharge end of the wasteway. Placement of rip-rap along river's edge around the outlet structure. Other minor ground disturbing activities such as may be necessary for Project completion on the low terrace.	
B.03	Any cultural and/or paleontological resource discovered during construction on public or Federal land would be reported immediately to the authorized officer. The contractor would suspend operations in the area until an evaluation is completed to prevent the loss of cultural or scientific values, as outlined in the Inadvertent Discovery Plan in the attached MOA.	
B.04	The contractor would construct structures within the right of way in strict conformity with the drawings and Land Use Plan as it is approved. Any relocation, additional construction, or use that is not in accord with the approved plan of development would not be initiated without the prior written approval of the authorized officer. The authorized officer would consult with the environmental resource disciplines to ensure compliance with environmental reviews or the necessity for additional reviews and approvals.	
B.05	Construction staging (for pipe and equipment) shall take place only in staging areas identified for the Project.	

No.	Environmental Commitments: Postconstruction Mitigation Measure or Project Design Feature	Date of Compliance
B.06	The contractor will adhere to the Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species (Tech. Memorandum No. 86-68220-07-05) 2012 Edition, online at https://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2012.pdf	
B.07	Existing roads shall be used to access the construction and staging areas. No new roads shall be constructed.	
B.08	All environmental commitments included in permits, authorizations and agreements shall be honored. Contractor must conform to the most stringent requirement in cases of conflict between specifications, laws and regulatory requirements, Reclamation Safety and Health Standards (RSHS) and permits.	
B.09	All material and construction practices would be in accordance with safe and proven engineering practices.	
B.10	Ground disturbances shall be limited to only those areas necessary to safely implement the Proposed Action.	
B.11	Prior to construction, the construction contractor shall remove vegetative material by mowing or chopping. Vegetation shall be either hauled to an appropriate disposal facility per the specification.	
B.12	Vegetation removal shall be confined to the smallest portion of the Proposed Action Area necessary for completion of work.	
B.13	Topsoil shall be stockpiled and then redistributed after completion of construction activities.	
B.14	The contractor would contact the authorized officer at least 4 days prior to the anticipated start of inwater work. The authorized officer would contact Reclamation's Fish Biologist to coordinate fish herding activities prior to work site isolation activities.	
B.15	The construction contractor shall utilize straw wattles, silt curtains, cofferdams (if needed), straw bales, or other suitable erosion control measures to prevent erosion from entering water bodies during construction. If straw products are used, they will be certified weed and seed free.	

No.	Environmental Commitments: Postconstruction Mitigation Measure or Project Design Feature	Date of Compliance
B.16	The construction contractor shall pour concrete in forms and/or behind cofferdams (as needed) to prevent discharge into waterways. Any wastewater from concrete-batching, vehicle wash-down, and aggregate processing shall be contained and treated or removed for off-site disposal.	
B.17	The construction contractor shall store and dispense fuels, lubricants, hydraulic fluids, and other petrochemicals in an approved staging area.	
B.18	The construction contractor shall inspect equipment daily and conduct repairs as necessary to ensure equipment is free of petrochemical leaks.	
B.19	Construction equipment shall be parked, stored, and serviced only at an approved staging area.	
B.20	A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.	
B.21	The construction contractor shall transport, handle, and store any fuels, lubricants, or other hazardous substances involved with the Project in an appropriate manner that prevents them from contaminating soil and water resources.	
B.22	Portable secondary containment shall be provided for any fuel or lubricant containers staged within the Project Area. Any staging of fuel or lubricants, or fueling or maintenance of vehicles or equipment, shall not be conducted within 150 feet of any live water or drainage.	
B.23	All spills, regardless of size, shall be cleaned up promptly and contaminated soil shall be disposed of at an approved facility.	
B.24	Appropriate Federal and Washington authorities shall be immediately notified in the event of any contaminant spill. Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b.	

No.	Environmental Commitments: Postconstruction Mitigation Measure or Project Design Feature	Date of Compliance
B.25	The contractor, in accordance with current Franklin County weed control standards, shall implement weed control within the Proposed Action Area.	
B.26	All requirements of those entities having jurisdiction over air quality matters would be adhered to and any necessary permits for construction activities would be obtained.	
B.27	Dust-control measures (application of water) would be utilized as necessary during construction.	
B.28	Any used existing roads would be left in a condition equal to or better than their condition prior to construction.	
B.29	Driveways, fences and gates, if damaged or destroyed by construction activities, would be repaired or replaced to their original pre-disturbed condition as required by the landowner.	
B.30	In construction areas where recontouring is required, surface restoration would occur as required by the specification. The method of restoration typically would consist of returning disturbed areas to their natural contour (to the extent practical) and reseeding or revegetating with native plants.	
B.31	Totally enclosed containment would be provided for all hazardous materials (if needed) and trash. All construction waste including trash, litter, garbage, or their solid waste, petroleum products, and other potentially hazardous materials would be removed to a disposal facility authorized to accept such materials.	
B.32	Contractor would trim trees in preference to cutting trees and would cut trees in preference to bulldozing them. Removal of trees will be conducted with archaeological monitoring.	
B.33	Gravel and rip-rap shall be sourced from an established quarry	

No.	Environmental Commitments: Postconstruction Mitigation Measure or Project Design Feature	Date of Compliance
C.01	Following construction, if not completed during construction, all disturbed areas shall be smoothed, shaped, contoured and reseeded.	
C.02	All staging areas and the temporary construction easements will be returned to their original pre-disturbed condition or better.	
C.03	Vegetation shall be mitigated in accordance with the Site Restoration Plan prepared for the Project to mitigate fish and wildlife values that will be forgone as a result of the Project. The contractor is responsible for replanting trees along the shoreline, 1:1 for those removed during construction. All revegetation, trees and seed, will be native species identified in the MOA and will comply with any other requirements in the specification.	
C.04	Monitor chokecherry and Coyote Willow growth to ensure survivability. They would be monitored for 100% survivability for the first 5 years after planting, and 80% survivability thereafter. Replanting would occur as necessary to meet the standards.	
C.05	Seeding shall occur with native seed mix identified in the MOA and specification. Permissible weed seeds as classified by Washington State Department of Agriculture Seed Program: Prohibited noxious weeds under WAC 16-301-045: none Restricted noxious weeds under WAC 16-301-050: 0.5 percent maximum by weight	
C.06	Inland vegetation would be replanted according to mitigation requirements or in coordination with the private landowner for temporary construction easements.	
C.07	Vegetation within the permanent right- of-way land holding would be subject to mowing, which helps suppress the growth and spread of noxious weeds. The permanent right-of-way would be subject to chemical weed suppression treatments.	