

# Cle Elum Pool Raise Project

A Component of the Yakima River Basin  
Integrated Water Resource  
Management Plan

FINAL Environmental Impact Statement  
Executive Summary

KITTITAS COUNTY, WASHINGTON



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



State of Washington  
Department of Ecology  
Central Regional Office  
Yakima, Washington  
Ecology Publication Number: 14-12-003

## **Mission Statements**

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.

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.

The mission of the Department of Ecology is to protect, preserve and enhance Washington's environment, and promote the wise management of our air, land and water for the benefit of current and future generations.

**Final Environmental Impact Statement  
Cle Elum Pool Raise Project  
Kittitas County, Washington**

**Joint Lead Agencies:**

U.S. Department of the Interior  
Bureau of Reclamation

State of Washington  
Department of Ecology

**For further information contact:**

Ms. Candace McKinley  
Environmental Program Manager  
Columbia-Cascades Area Office  
1917 Marsh Road  
Yakima, Washington 98901-2058  
509-575-5848, ext. 613

Mr. Derek I. Sandison  
Director, Office of Columbia River  
15 W. Yakima Ave, Suite 200  
Yakima, Washington 98902-3452  
509-457-7120

**Cooperating Governments and Agencies:**

Confederated Tribes and Bands of the Yakama Nation  
U.S. Department of Agriculture, U.S. Forest Service  
U.S. Department of Energy, Bonneville Power Administration  
U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service

This Final Environmental Impact Statement (FEIS) for the Cle Elum Pool Raise Project was prepared jointly by the U.S. Department of the Interior Bureau of Reclamation and Washington State Department of Ecology. Reclamation and Ecology are proposing this project as part of implementation of the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan). This FEIS evaluates a No Action Alternative and four action alternatives: Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection; Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection; Alternative 4 – Additional Storage Capacity for Total Water Supply Available (TWSA) with Rock Shoreline Protection; and Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection. Reclamation and Ecology have identified Alternative – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection as the Preferred Alternative.

This FEIS was prepared in compliance with the National Environmental Policy Act (NEPA) 42 USC 4371 et seq. and the State of Washington Environmental Policy Act (SEPA), Chapter 43.21C RCW, and the SEPA Rules (Chapter 197-11 WAC).



## **SEPA FACT SHEET**

### **Brief Description of Proposal:**

Reclamation and the Washington State Department of Ecology have jointly prepared this Final Environmental Impact Statement (FEIS) on the Cle Elum Pool Raise Project. This document was prepared in compliance with the National Environmental Policy Act (NEPA) and Washington State Environmental Policy Act (SEPA). Ecology is the SEPA lead agency for the proposal.

The Cle Elum Pool Raise Project would allow up to an additional 14,600 acre-feet of water to be stored and released from Cle Elum Reservoir by modifying the existing spillway radial gates at Cle Elum Dam. Reclamation and Ecology developed the project in response to congressional legislation (Title XII) and the project is an element of the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan).

### **Proponents and Contacts:**

U.S. Department of the Interior, Bureau of Reclamation

**Contact:** Ms. Candace McKinley  
Environmental Program Manager  
Columbia-Cascades Area Office  
1917 Marsh Road  
Yakima, Washington 98901-2058  
509-575-5848, ext. 613

State of Washington, Department of Ecology

**Contact:** Mr. Derek I. Sandison  
SEPA Responsible Official  
Director, Office of Columbia River  
15 W. Yakima Ave, Suite 200  
Yakima, Washington 98902-3452  
509-457-7120

### **Permits, Licenses, and Approvals Required for Proposal:**

To implement any component of the action alternative, the lead agencies would need to apply for any required permits and comply with various laws, regulations, and Executive Orders. The following are those that are likely to apply:

- National Environmental Policy Act
- Endangered Species Act
- Magnusson-Stevens Fishery Conservation and Management Act
- Fish and Wildlife Coordination Act
- Secretary's Native American Trust Responsibilities
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- Executive Order 11988: Floodplain Management
- Executive Order 11990: Protection of Wetlands
- Executive Order 12898: Environmental Justice
- Executive Order 13007: Indian Sacred Sites
- Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
- Clean Water Act
- State Environmental Policy Act
- Dam Safety Permit
- Hydraulic Project Approval

Additionally, Reclamation and Ecology would coordinate with Kittitas County on the applicability of local regulations, including critical areas regulations and the Shoreline Management Program.

**Authors and Contributors:**

A list of authors and contributors is provided in a section that follows Chapter 5 and the Comment and Response Section.

**Date of Issue:**

May 15, 2015

**Public Comment on the Draft Environmental Impact Statement:**

In accordance with WAC 197-11-455, Ecology and Reclamation conducted a public comment period from September 23, 2014 to November 25, 2014. A total of 21 comment letters were received from agencies and individuals.

**Changes from the Draft Environmental Impact Statement:**

Section 1.12 of the FEIS lists changes made to the FEIS since publication of the Draft Environmental Impact Statement.

**Timing of Additional Environmental Review:**

Reclamation will issue the Record of Decision on the Cle Elum Pool Raise no earlier than 30 days after the release of this FEIS. As noted in the FEIS, if there are changes in the project that could result in adverse impacts that are not identified in this FEIS, Reclamation and Ecology would conduct the appropriate environmental review and complied to identify and address potential significant adverse effects prior to taking action.

**Document Availability:**

The FEIS can be viewed online at:

<http://www.usbr.gov/pn/programs/eis/cleelumraise/index.html>. The document may be obtained in hard copy or CD by written request to the SEPA Responsible Official listed above, or by calling 509-575-5848, ext. 613. To ask about the availability of this document in a format for the visually impaired, call the Office of Columbia River at 509-662-0516. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

**Location of Background Materials:**

Background materials used in the preparation of this FEIS are available online at:

Cle Elum Pool Raise Project

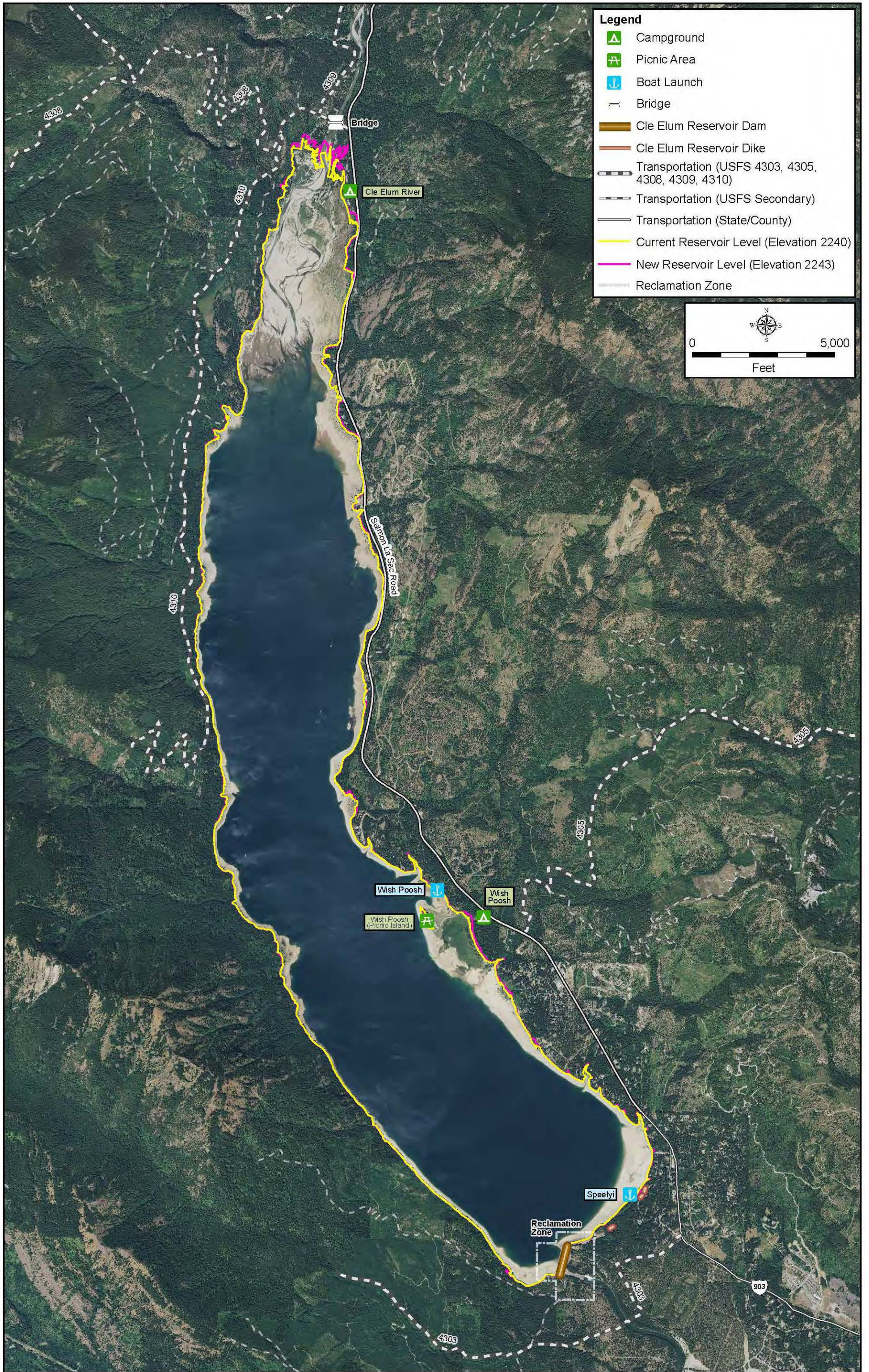
<http://www.usbr.gov/pn/programs/eis/cleelumraise/index.html>

Additional information about the Yakima River Basin Integrated Water Resource Management Plan is available at:













<http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html>.

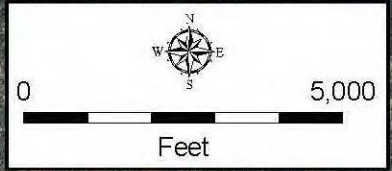






**Legend**

-  Campground
-  Picnic Area
-  Boat Launch
-  Bridge
-  Cle Elum Reservoir Dam
-  Cle Elum Reservoir Dike
-  Transportation (USFS 4303, 4305, 4308, 4309, 4310)
-  Transportation (USFS Secondary)
-  Transportation (State/County)
-  Current Reservoir Level (Elevation 2240)
-  New Reservoir Level (Elevation 2243)
-  Reclamation Zone



Bridge

Cle Elum River

Santon La Spac Road

Wish Poosh

Wish Poosh (Picnic Island)

Wish Poosh

Speelyi

Reclamation Zone

903

4308

4308

4309

4310

4310

4305

4305

4303

4310



## Table of Contents

Executive Summary .....	i
Introduction .....	i
Purpose and Need for the Action .....	i
Yakima River Basin Integrated Water Resource Management Plan.....	i
Alternatives .....	ii
Preferred Alternative .....	iii
Alternative 1 – No Action Alternative .....	iii
Proposed Action (Alternative 2) – Additional Stored Water Used for Instream Flow with Rock Shoreline Protection .....	iv
Alternative 3 – Additional Stored Water Used for Instream Flow with Hybrid Shoreline Protection (Preferred Alternative).....	v
Alternative 4 – Additional Stored Water Used for TWSA with Rock Shoreline Protection .....	v
Alternative 5 – Additional Stored Water Used for TWSA with Hybrid Shoreline Protection .....	v
Summary of Environmental Consequences .....	v
Cumulative Impacts.....	xxvii
Environmental Commitments .....	xxvii
Public Involvement .....	xxix
Scoping .....	xxix
Comments on the DEIS.....	xxix
Consultation and Coordination .....	xxx
Changes to the Draft EIS .....	xxx

## List of Tables

Table ES-1. Summary Comparison of Impacts .....	vii
---	-----



# EXECUTIVE SUMMARY

## Introduction

The U.S. Department of the Interior Bureau of Reclamation and the Washington State Department of Ecology have prepared this Final Environmental Impact Statement (FEIS) on the Cle Elum Pool Raise Project. Reclamation and Ecology are jointly leading and preparing this FEIS as a combined National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) document. The Yakama Nation, U.S. Forest Service (USFS), Bonneville Power Administration (BPA), and National Marine Fisheries Service (NMFS) are serving as cooperating agencies in preparation of the FEIS.

The Cle Elum Pool Raise Project would allow up to an additional 14,600 acre-feet of water to be stored and released from Cle Elum Reservoir by modifying the existing spillway radial gates at Cle Elum Dam. The project was authorized by Congress in the Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994 (Public Law 103-434) Sections 1205 and 1206, Title XII, Yakima River Basin Water Enhancement Project (YRBWEP) (108 Stat. 4550 USC). It is also a component of the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan).

## Purpose and Need for the Action

Congress enacted the Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994 (Public Law 103-434), which included Sections 1205 and 1206, Title XII, Yakima River Basin Water Enhancement Project (YRBWEP) (108 Stat. 4550 U.S. Code [USC]). Sections 1205 and 1206 provide authorization for the Cle Elum Pool Raise Project. This project includes modifying the radial gates at Cle Elum Dam to provide an additional 14,600 acre-feet of storage capacity in Cle Elum Reservoir; providing for shoreline protection of Cle Elum Reservoir; accomplishing necessary environmental mitigation; and dedicating the accrued water to instream flows.

To advance its mission within the Yakima Project, Reclamation prepared the Yakima River Basin Integrated Water Resource Management Plan (Integrated Plan) Programmatic EIS (PEIS) to develop a comprehensive program of water resource and habitat improvements focused on fish passage, aquatic habitat, and water supply. The Integrated Plan PEIS confirmed that the current water resources infrastructure, programs, and policies in the Yakima River basin are not capable of consistently meeting the demands for fish and wildlife, irrigation, and municipal water supply (Reclamation and Ecology, 2012). The purpose of the Proposed Action is to increase the capacity of Cle Elum Reservoir and improve aquatic resources for fish habitat below Cle Elum Dam.

## Yakima River Basin Integrated Water Resource Management Plan

Reclamation and Ecology developed the Integrated Plan to meet the future water needs of the Yakima River basin. Based on over 30 years of studies in the basin, the agencies determined

that current water supply in the basin does not meet instream or out-of-stream demand, including the aquatic demands for fish and wildlife and the out-of-stream needs of irrigation and municipal supply. In addition, climate change predictions indicate that the basin's snowpack will decrease, reducing spring and summer runoff.

The Integrated Plan addresses the need to restore ecological functions in the Yakima River basin and to provide more reliable and sustainable water resources for the health of the riverine environment, as well as agriculture, municipal, and domestic water users. The Integrated Plan meets these needs while anticipating changing water uses and effects of predicted climate change on water resources in the basin (Reclamation and Ecology, 2012).

The goals of the Integrated Plan are as follows:

- Provide opportunities for comprehensive watershed protection, ecological restoration and enhancement addressing instream flows, aquatic habitat, and fish passage
- Improve water supply reliability during drought years for agricultural and municipal needs
- Develop a comprehensive approach for efficient management of water supplies for irrigated agriculture, municipal and domestic uses, and power generation
- Improve the ability of water managers to respond and adapt to potential effects of climate change
- Contribute to the vitality of the regional economy and sustain the riverine environment.

To address these goals, the Integrated Plan includes seven elements: reservoir fish passage, structural and operational changes to existing facilities, surface water storage, groundwater storage, habitat and watershed protection and enhancement, enhanced water conservation, and market reallocation. The seven elements each include recommended projects to meet the goals. The structural and operational changes element includes the Cle Elum Pool Raise Project. The project would help meet the goal of enhancing instream flows, which would benefit fish habitat.

## **Alternatives**

This FEIS evaluates the potential environmental impacts associated with the Cle Elum Pool Raise Project. The Cle Elum Pool Raise Project would modify the existing radial gates at the dam spillway to raise the level of the reservoir pool 3 feet, allowing up to an additional 14,600 acre-feet of water to be stored and released from Cle Elum Reservoir. The existing dam would remain as is.

In addition to the No Action Alternative, Reclamation and Ecology are evaluating four action alternatives for the Cle Elum Pool Raise Project. All four action alternatives would include the same approach to raising the reservoir pool level by modifying the existing spillway radial gates.

Reclamation and Ecology are proposing the following two alternatives for allocating and using the additional storage capacity:

- For instream flow, as authorized in the Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994 (Public Law 103-434) Sections 1205 and 1206, Title XII, Yakima River Basin Water Enhancement Project (YRBWEP) (108 Stat. 4550 USC) to improve conditions for fish
- For total water supply available (TWSA) and out-of-stream uses as well as instream flows, requiring additional congressional authorization

Reclamation and Ecology are also proposing the following two strategies for shoreline protection:

- Rock shoreline protection, consisting mostly of riprap with some plantings
- Hybrid shoreline protection, consisting of a range of treatments, including rock riprap and various bioengineered techniques

Under both shoreline protection alternatives, Reclamation would continue its existing shoreline monitoring and maintenance program. Both forms of shoreline protection may require Reclamation to acquire private land or easements across private land from willing sellers.

### **Preferred Alternative**

Reclamation and Ecology have identified Alternative 3 – Additional Storage Capacity Used for Instream Flow with Hybrid Shoreline Protection (described below) as the Preferred Alternative. Alternative 3 meets the purpose and need of the Proposed Action to increase the capacity of Cle Elum Reservoir and improve aquatic resources for fish habitat below Cle Elum Dam. Hybrid shoreline protection would prevent erosion while reducing environmental impacts in shoreline areas.

### **Alternative 1 – No Action Alternative**

Alternative 1, the No Action Alternative, represents the most likely future conditions in the absence of implementing the proposed action. The No Action Alternative forms the baseline for comparison of potential impacts from the proposed action and the action alternatives. Under the No Action Alternative, Reclamation and Ecology would not implement the Cle Elum Pool Raise Project and additional storage capacity would not be available in the reservoir.

For purposes of this FEIS, Reclamation and Ecology consider the No Action Alternative to include the following projects and actions:

- Interim juvenile fish passage facility and operations currently in place at Cle Elum Dam, including reconstruction of the facilities
- Ongoing fish reintroduction at Cle Elum Reservoir and upper Cle Elum River

- Construction and operation of permanent fish passage facilities at Cle Elum Dam
- Two ongoing conservation projects being implemented under the Yakima River Basin Water Enhancement Project (YRBWEP) Phase II water conservation, and land and water rights acquisition program

### **Proposed Action (Alternative 2) – Additional Stored Water Used for Instream Flow with Rock Shoreline Protection**

Under Alternative 2, Reclamation would increase the Cle Elum Reservoir pool level by 3 feet, allowing an additional 14,600 acre-feet of water to be stored in the reservoir. Reclamation would allocate the additional storage capacity to meet instream flow needs as authorized in the Title XII legislation (108 Stat. 4526 USC). Reclamation would implement a rock shoreline protection strategy to reduce the potential for increased shoreline erosion from the higher reservoir level.

Alternative 2 includes the following major components:

- Modify the existing Cle Elum Dam spillway radial gates to increase the reservoir capacity by 14,600 acre-feet, resulting in inundation of some shoreline areas not currently inundated
- Dedicate the accrued water to instream flows
- Install rock shoreline protection to stabilize shorelines adjacent to private property subject to increased erosion from the higher reservoir pool
- Monitor shoreline conditions and implement appropriate protection measures where necessary in conjunction with Reclamation's existing annual shoreline monitoring assessment
- Raise the elevation of three existing earthen saddle dikes north and east of the dam and raise the height of the right abutment of the dam to provide adequate freeboard<sup>1</sup>
- Provide shoreline protection for Federal property, including UUSFS recreational facilities and access at Speelyi Beach Boat Launch and Day Use Area, Wish Poosh Campground and Boat Launch, Cle Elum River Campground, and portions of the west shoreline
- Provide erosion protection for portions of Salmon La Sac Road
- Acquire land, easements, or both from willing private sellers where necessary to accommodate shoreline protection
- Improve aquatic habitat at the mouths of three perennial streams on Federal lands along the west shore of Cle Elum Reservoir

---

<sup>1</sup> Freeboard is a factor of safety usually expressed in feet above a flood level. In this case, it is a 3-foot zone of additional protection from wave erosion.



### **Alternative 3 – Additional Stored Water Used for Instream Flow with Hybrid Shoreline Protection (Preferred Alternative)**

Under Alternative 3, Reclamation and Ecology propose to use the additional storage capacity for instream flows as described for Alternative 2, but Reclamation would employ a hybrid shoreline protection strategy. Reclamation would protect shorelines using rock walls where needed combined with bioengineered shoreline protection, such as perched beaches, anchored logs, and other techniques. All other project components would be the same as described for Alternative 2.

### **Alternative 4 – Additional Stored Water Used for TWSA with Rock Shoreline Protection**

Under Alternative 4, Reclamation and Ecology propose to use the additional storage capacity for TWSA to provide water supply for irrigation districts or for instream flows. This alternative would require additional authorization from Congress. Reclamation would employ the same rock shoreline protection strategy described for Alternative 2. All other project components would be the same as Alternative 2.

### **Alternative 5 – Additional Stored Water Used for TWSA with Hybrid Shoreline Protection**

For Alternative 5, Reclamation and Ecology propose to use the additional storage capacity for TWSA as described for Alternative 4, but would employ the hybrid shoreline protection strategy as described for Alternative 3. All other project components would be the same as described for Alternative 2.

## **Summary of Environmental Consequences**

Chapter 4 of the FEIS describes the environmental consequences of the alternatives, including the No Action Alternative. The Cle Elum Pool Raise Project would provide additional stored water to benefit streamflows and fish or water supply. Under Alternatives 2 and 3, the additional storage would be used for either increasing the pool level for downstream outmigrants in spring or to improve instream flow in the Cle Elum and Yakima rivers during winter, spring or summer. The scenarios for use of the additional storage would have significant benefits on reservoir elevation and streamflow in the Cle Elum and Yakima rivers. The improved streamflows and reservoir levels under Alternatives 2 and 3 would provide significant benefits to fish species in the Yakima River basin, including bull trout and steelhead, which are listed as threatened under the Endangered Species Act (ESA). Under Alternatives 4 and 5, prorationing levels during drought years would rise by a maximum of 1.6 percent. This represents a minor significant benefit to water users.

Under all action alternatives, the additional stored water would inundate approximately 46 additional acres around the reservoir. The additional inundation would occur for about 40 days in June and July in years when water is available to fill the reservoir. Some losses to vegetation would occur and areas of coniferous forest would likely be replaced by more flood-tolerant species such as deciduous tree/shrub communities. Reclamation expects

impacts to vegetation and wildlife habitat to be minor because of the limited duration and scale of the inundation. No significant impacts to ESA-listed terrestrial species would occur.

The increased inundation would increase erosion along some of the shoreline. All action alternatives include shoreline protection to reduce this erosion and to protect private property and Federal facilities. However, Reclamation expects approximately 2 to 5 acres of area could erode in addition to the current levels of erosion. Reclamation would continue its annual inspection of shoreline conditions to identify erosion problems and approaches to address the problems. All action alternatives would cause temporary short-term impacts to recreation during construction but would protect recreational facilities along the reservoir, so Reclamation anticipates no significant long-term impacts to developed recreation facilities. Some portions of dispersed recreation areas would be displaced during the period of higher reservoir level, but impacts would not be permanent and other dispersed recreation opportunities would be available nearby.

Under all action alternatives, modification of the radial spillway gates would alter the historic Cle Elum Dam and the increased reservoir pool would impact archaeological resources along the shoreline. Reclamation would develop and implement a treatment plan for cultural resources directly affected by the project and a Cultural Resource Management Plan to address ongoing and future operational and land management implications of the project.

Most impacts associated with the Cle Elum Pool Raise Project would be temporary construction impacts such as increased noise, dust, and traffic. These construction activities would also temporarily affect visual quality and the recreational experience around the reservoir. Construction would require clearing and grading of some areas. Reclamation would restore most of the disturbed areas with native vegetation following construction. Reclamation expects all construction impacts to be minor. Construction would occur in phases over a 5 year period, reducing the number of truck trips, vehicle emissions, and area disturbed during any one construction year. Reclamation would conduct all shoreline construction activities above the water line while the reservoir is drawn down, so no impacts to fish would occur.

Table ES-1 provides a summary of impacts and benefits associated with the No Action and four action alternatives.

**Table ES-1. Summary Comparison of Impacts**

<b>Surface Water</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	No additional storage capacity would be available in Cle Elum Reservoir. Water supplies for proratable irrigators would continue to fall below 70 percent of entitlement during drought years. Instream flow conditions in the Cle Elum and Yakima rivers would not change.		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>Inundation of 46 additional acres of shoreline for an average of 39 days per year</li> <li>Reservoir would reach full pool in 52 percent of years</li> </ul>	<ul style="list-style-type: none"> <li>Additional storage would either increase the pool level for downstream outmigrants in spring or improve instream flow in the Cle Elum and Yakima rivers during winter, spring, or summer, providing significant benefits</li> </ul>	<ul style="list-style-type: none"> <li>No impact on reservoir storage or releases</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>Same as Alternative 2, except there would be an average of 40 days of additional inundation and the reservoir would reach full pool in 53 percent of years</li> </ul>	<ul style="list-style-type: none"> <li>Additional storage would increase prorationing levels during drought years by a maximum of 1.6 percent, providing a minor significant benefit</li> </ul>	Same as Alternative 2
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 4	Same as Alternative 4	Same as Alternative 3

<b>Earth</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Shoreline erosion would continue as it does under existing conditions		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>Increase in shoreline erosion where no shoreline protection is installed</li> </ul>	<ul style="list-style-type: none"> <li>No change in potential for increased erosion downstream in the Cle Elum or Yakima rivers</li> </ul>	<ul style="list-style-type: none"> <li>Short-term increase in erosion during construction</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Surface Water Quality</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Existing water quality trends would continue. Construction projects could cause temporary water quality impacts		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• Construction would cause minor short-term increases in sediments, turbidity and nutrients, which would be minimized by best management practices</li> <li>• Project actions would not affect water quality conditions in Cle Elum Reservoir or in downstream reaches of the Cle Elum and Yakima rivers</li> </ul>		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Groundwater</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Construction of projects included under the No Action Alternative would have no impacts on groundwater quality, water levels, or on-site septic systems (OSS) in the Cle Elum Reservoir area		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>No negative effects on water wells or groundwater levels are expected</li> <li>Temporary higher groundwater levels could cause some OSS to fall out of compliance with county requirements</li> </ul>	<ul style="list-style-type: none"> <li>No negative effects are anticipated</li> </ul>	<ul style="list-style-type: none"> <li>Inadvertent spills during construction could decrease groundwater quality</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Fish</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Existing low-flow conditions would continue to negatively impact fish in the Cle Elum and Yakima rivers. Completion of permanent fish passage facilities at Cle Elum Dam would benefit fish by restoring ecological connectivity, biodiversity, and natural production of anadromous salmonids in the Cle Elum watershed above Cle Elum Dam		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• The increased reservoir level would temporarily increase erosion caused turbidity which would negatively impact fish</li> <li>• Erosion could increase nutrients in the reservoir, which would cause minor short-term increases in productivity and benefit fish</li> <li>• Inundation of shoreline vegetation would cause a short-term increase in habitat complexity that would benefit reservoir fish species by providing additional in-water structure</li> </ul>	<p>One of five instream flow scenarios would be implemented, each of which would have positive impacts on fish:</p> <ul style="list-style-type: none"> <li>• Scenario 1 would provide flow and habitat complexity improvements for salmonids</li> <li>• Scenario 2 would improve flow conditions during the smolt outmigration period</li> <li>• Scenario 3 would improve habitat connectivity for returning adult spawners</li> <li>• Scenario 4 would improve habitat connectivity for outmigrating juvenile salmonids</li> <li>• Scenario 5 would combine the benefits of Scenarios 2 through 4</li> </ul>	<ul style="list-style-type: none"> <li>• Construction would occur above the level where fish would be present and would not impact fish</li> <li>• Completed shoreline protection would not impact fish</li> </ul>

<b>Fish</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 2	<ul style="list-style-type: none"> <li>• Similar to Alternative 2</li> <li>• A more natural riparian area would develop with hybrid shoreline protection, providing minor benefits to fish habitat</li> </ul>
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2	<ul style="list-style-type: none"> <li>• Existing low flows that currently impact fish in the Yakima and Cle Elum Rivers would continue</li> </ul>	Same as Alternative 2
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 4	Same as Alternative 3



<b>Vegetation and Wetlands</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Construction projects would not result in significant impacts on wetlands or vegetation. Ongoing trends in land management would continue to affect vegetation		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>Inundation from the higher reservoir pool may impact wetlands and USFS Survey and Manage and other special status plant species, but no significant impacts are anticipated</li> </ul>	<ul style="list-style-type: none"> <li>Use of additional storage capacity would not cause significant impacts on wetlands and vegetation downstream along the Cle Elum or Yakima rivers</li> </ul>	<ul style="list-style-type: none"> <li>Construction and operation activities would result in insignificant impacts on wetlands and vegetation</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 2	<ul style="list-style-type: none"> <li>Similar to Alternative 2, but the construction footprint would be slightly larger so impacts on wetlands and shoreline vegetation would be greater</li> <li>A more natural riparian area would develop on hybrid shoreline protection</li> </ul>
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 2	Same as Alternative 3

<b>Wildlife</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Patterns and trends of wildlife habitat that currently occur would continue. Fish passage projects at Cle Elum Reservoir would generate noise that would affect wildlife during construction but would ultimately benefit wildlife because of the new influx of nutrients from anadromous salmon carcasses.		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• Construction would result in minor short-term disturbance to wildlife</li> <li>• Operations would inundate a small amount of shoreline habitat (3 percent) that is not affected by current reservoir operations, the impact on priority species would not be significant</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts to wildlife would not occur because fluctuations in streamflow would not be substantially different than those that have been experienced historically</li> </ul>	<ul style="list-style-type: none"> <li>• Construction would cause a minor, short-term disturbance to wildlife</li> <li>• Shoreline protection projects would result in the loss of a narrow strip of habitat along the shoreline of the reservoir, but the loss would not impact the breeding, rearing, or foraging activities of priority species</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 2	<ul style="list-style-type: none"> <li>• Similar to Alternative 2</li> <li>• Hybrid protection would create a more natural shoreline habitat</li> </ul>
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 2	Same as Alternative 3

<b>Threatened and Endangered Species</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Current trends would continue, which could result in detrimental long-term impacts to listed species. Completion of the fish passage facilities at Cle Elum Dam would benefit listed fish and terrestrial species.		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• The increased reservoir level would temporarily increase erosion caused turbidity which would negatively impact bull trout</li> <li>• Erosion could increase nutrients in the reservoir, which would cause minor short-term increases in productivity and benefit bull trout</li> <li>• Inundation of shoreline vegetation would cause a short-term increase in habitat complexity that would benefit bull trout by providing additional in-water structure</li> <li>• Any habitat loss for northern spotted owl caused by the increased inundation would be offset by measures Reclamation will take to prevent further recreational dispersal and to restore Federal lands on the west side of the reservoir</li> </ul>	<ul style="list-style-type: none"> <li>• Increased instream flows would benefit bull trout and MCR steelhead downstream from Cle Elum Dam</li> </ul>	<ul style="list-style-type: none"> <li>• Construction could cause short-term disturbance of bull trout and northern spotted owl if present near the work area.</li> <li>• No long-term impacts are anticipated</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 2	<ul style="list-style-type: none"> <li>• Similar to Alternative 2</li> <li>• Hybrid shoreline protection would create a more natural shoreline habitat</li> </ul>

<b>Threatened and Endangered Species</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2	<ul style="list-style-type: none"> <li>Timing of flows released for TWSA would cause a negative impact on listed salmonids in the Yakima and Cle Elum rivers</li> </ul>	Same as Alternative 2
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 4	Same as Alternative 3

<b>Visual Quality</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Permanent fish passage facilities would be visible upstream of the dam, but would remain visually consistent with the overall setting		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>Construction activities and equipment would cause short-term visual quality impacts</li> <li>Dam modifications, shoreline protection, and reservoir pool changes would cause localized visual quality impacts that would not substantially contrast with the existing visual quality setting</li> </ul>		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2	Same as Alternative 2	<ul style="list-style-type: none"> <li>Hybrid shoreline protection would create a more natural appearing shoreline</li> </ul>
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 3		

<b>Air Quality</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Construction would generate localized and short-term emissions but no exceedance of thresholds is anticipated		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	Minor emissions from construction would occur, but they would not violate any air quality standards or result in any air quality impacts		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Climate Change</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Projects constructed under the No Action Alternative would generate carbon emissions that would fall below Ecology’s significance level. Completed fish passage facilities would improve conditions for salmonids under climate change conditions. Reduced flexibility for Reclamation to adapt water management in response to climate change.		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• Carbon emissions would fall below Ecology’s significance level</li> <li>• Changes in runoff timing and volume associated with climate change would adversely impact the project by reducing the number of years the additional storage capacity would be available</li> <li>• Additional storage capacity would allow water managers somewhat more flexibility to respond to climate change</li> <li>• Positive benefit in instream flow or reservoir levels</li> </ul>		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• Carbon emissions would fall below Ecology’s significance level</li> <li>• Changes in runoff timing and volume associated with climate change would adversely impact the project by reducing the number of years the additional storage capacity would be available</li> <li>• Additional storage capacity would allow water managers somewhat more flexibility to respond to climate change</li> <li>• Negligible benefit to prorated irrigators</li> </ul>		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 4		

<b>Noise and Vibration</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Construction activities would cause minor increases in noise		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• Minor, temporary increases in noise and vibration during construction</li> <li>• No long-term noise impacts</li> </ul>		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Recreation</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Projects included in the No Action Alternative would not result in adverse impacts on recreation. Ongoing dispersed camping and day use activities would continue to cause substantial degradation of the terrestrial, nearshore, and aquatic environments.		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>Dispersed recreation areas at Dry, Morgan, and French Cabin creeks would be inundated for approximately 40 days in years when additional storage capacity is used. Dispersed camping would be available in other areas around the reservoir</li> <li>Opportunities to launch small watercraft downstream from the NF-4308 bridge would be reduced by inundation, but other boat launch locations would remain available</li> <li>Installation of guardrails, proposed as mitigation for the impacts of dispersed camping, would permanently block vehicle-oriented dispersed recreation at the Dry Creek and French Cabin Creek areas, but recreationists would be able to walk into these areas and vehicle-oriented dispersed recreation would still be allowed in other areas</li> </ul>	<ul style="list-style-type: none"> <li>A small increase in instream flows in the Cle Elum and Yakima rivers would not affect recreation because fluctuations in streamflow would not be substantially different than those that have been experienced historically</li> </ul>	<ul style="list-style-type: none"> <li>Installation of shoreline protection measures on private property could make access to shoreline more difficult. Reclamation would work with property owners to provide appropriate mitigation to the extent possible</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		



<b>Recreation</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Land and Shoreline Use</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	The No Action Alternative would not impact land use.		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>An additional 43 acres of Federal land and 3 acres of private property would be inundated; structures would not be affected</li> <li>Additional inundation of the Cle Elum River where it enters the reservoir could affect designation of this portion of the river as a Wild and Scenic River</li> </ul>	<ul style="list-style-type: none"> <li>Variations in instream flows would not affect land use because fluctuations in streamflow would not be substantially different than those that have been experienced historically</li> </ul>	<ul style="list-style-type: none"> <li>The acquisition of approximately 20 acres of land in narrow strips adjacent to the shoreline would not make private properties unsuitable for existing uses</li> <li>Reclamation would acquire land only from willing sellers</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		

<b>Land and Shoreline Use</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Utilities</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Permanent fish passage facilities would require a minor, insignificant increase in electricity use		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• Reclamation would remove vault toilets at Speelyi Beach and Wish Poosh and Cle Elum River campgrounds and replace them with new vault toilets or portable toilets in a new location in coordination with the USFS</li> <li>• Reclamation would permanently remove the water and electrical services to Picnic Island and the boat launch area at Wish Poosh Campground in coordination with the USFS</li> <li>• No other utility interruptions are anticipated during construction</li> </ul>		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Transportation</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	The No Action Alternative would not result in a notable increase in traffic levels		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>Increases in construction vehicle traffic would be temporary and negligible</li> <li>No roads or bridges would be inundated</li> </ul>	<ul style="list-style-type: none"> <li>Fluctuations in flows downstream in the Cle Elum and Yakima rivers would not affect transportation infrastructure because fluctuations in streamflow would not be substantially different than those that have been experienced historically</li> </ul>	<ul style="list-style-type: none"> <li>Increases in construction vehicle traffic would be temporary and negligible.</li> <li>Lake Cabins Road would be closed for a period of less than 2 weeks. Alternative routes would be available.</li> <li>Construction to increase shoreline protection on Salmon La Sac Road would temporary restrict traffic to one lane, but access would be maintained.</li> </ul>
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Socioeconomics</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Construction of projects included in the No Action Alternative would result in minor direct increases in local employment. Prevailing economic factors would continue		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	The Proposed Action would result in a gain in regional economic activity. Construction would increase output in the short term. None of the impacts would be significant.		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Similar to Alternative 2, and use of additional storage capacity for TWSA would increase agricultural production and market value during severe drought years		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 4		

<b>Cultural Resources</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	Construction of new permanent fish passage facilities would have an adverse effect on NRHP-eligible resources.		
Alternative 2 – Additional Storage Capacity for Instream Flow with Rock Shoreline Protection	<ul style="list-style-type: none"> <li>• Modifications to the spillway radial gates would constitute a significant change to a historic structure (Cle Elum Dam)</li> <li>• The increased reservoir pool and associated shoreline protection measures would impact archaeological resources along the shoreline of Cle Elum Reservoir</li> <li>• The proposed action would contribute to the impacts on cultural resources, including traditional cultural properties (TCPs), caused by existing reservoir operations</li> </ul>		
Alternative 3 – Additional Storage Capacity for Instream Flow with Hybrid Shoreline Protection	Same as Alternative 2		
Alternative 4 – Additional Storage Capacity for TWSA with Rock Shoreline Protection	Same as Alternative 2		
Alternative 5 – Additional Storage Capacity for TWSA with Hybrid Shoreline Protection	Same as Alternative 2		

<b>Indian Sacred Sites</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	No impact on Indian sacred sites is anticipated to occur because no sites have been identified in the area		
Alternatives 2 - 5	No impacts are anticipated under any of the action alternatives because no sites have been identified in the area		

<b>Indian Trust Assets</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	No impact is anticipated because no ITAs have been identified in the area		
Alternatives 2 – 5	No impacts are anticipated under any of the action alternatives because no ITAs have been identified in the area		

<b>Environmental Justice</b>			
<b>Alternative</b>	<b>Spillway Radial Gate Modifications to Raise the Reservoir Level</b>	<b>Use of Additional Storage Capacity</b>	<b>Shoreline Protection</b>
Alternative 1 – No Action	No impact is anticipated		
Alternatives 2 – 5	No disproportionate impacts to minority or low-income populations are anticipated under any of the action alternatives		

## Cumulative Impacts

Cumulative impacts are the effects that may result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). Section 4.24 of this FEIS evaluates cumulative impacts. The various environmental element sections in Chapters 3 and 4 of the FEIS also examine many of the cumulative impacts. Those analyses discuss the effects of past processes and trends that have cumulatively influenced or led to the resource conditions that exist today.

In addition, Reclamation considers three projects as reasonably foreseeable future projects—the Kachess Drought Relief Pumping Plant (KDRPP) and Keechelus to Kachess Conveyance (KKC) Projects, and ongoing Interstate-90 (I-90) construction. The Cle Elum Pool Raise Project would provide benefits to fish and streamflow conditions that would be beneficial at a basin-wide level when implemented with other reasonably foreseeable projects. Construction of the Cle Elum Pool Raise Project could add cumulatively to construction impacts in the area such as traffic congestion, dust, and noise. It could also cumulatively contribute to regional trends toward reduced habitat, impacts to historic and cultural resources, and construction impacts in the region. These impacts would be minor and limited in scale; therefore, the project is not likely to contribute to significant cumulative impacts of foreseeable future projects.

## Environmental Commitments

Environmental commitments are measures or practices adopted by a project proponent to reduce or avoid adverse effects that could result from project operations. Specific mitigation measures for project impacts are described for each resource elsewhere in Chapter 4, including the environmental commitments from the Integrated Plan Record of Decision (Reclamation, 2013). Reclamation and Ecology share the responsibility to ensure that obligations to protect natural resources are fulfilled.

Reclamation will develop an environmental inspection and mitigation monitoring program to ensure that all environmental commitments can be met. Reclamation will coordinate development and implementation of this program with the USFS, Ecology, WDFW, WDNR, the Service, NMFS, and other State and Federal agencies, as appropriate. Reclamation will conduct environmental review and compliance on this program when it is developed.

In addition, Reclamation will implement the following measures:

- Construct all shoreline protection measures in the dry when the reservoir is drawn down to avoid in-water work
- Complete all planned shoreline protection measures prior to raising the level of the reservoir

- Continue the existing shoreline inventory to identify erosion problems and appropriate control measures
- Obtain all applicable Federal, State and local permits
- Implement mitigation measures required by the Service and NMFS through ESA consultation
- Implement conservation measures required by the Service in its Conservation Act Report
- Coordinate with Ecology's water quality staff to ensure compliance with the State antidegradation policy
- Take measures, in coordination with the USFS, to mitigate for impacts caused by existing dispersed camping, day use, and unauthorized motor vehicle access near the north end of the reservoir
- Prior to construction, complete cultural resource studies of all areas that would be disturbed by construction
- For all cultural resources directly impacted by the project, implement mitigation measures and treatment plans as described in Section 4.19.8 and as required through further Section 106 consultation with the SHPO, Yakama Nation, Colville Confederated Tribes, and USFS
- Develop a Cultural Resource Management Plan to address ongoing and future operational and land management implications of the proposed project
- Prior to construction, conduct wetland surveys using current wetland delineation methodology. Design projects to avoid wetland impacts. If wetland impacts occur, comply with mitigation measures established in permit conditions to ensure no net loss
- Coordinate with the Corps and State and local agencies to develop appropriate methodologies to determine whether the proposed additional inundation would result in a loss of wetlands that requires permit approval. Develop and implement mitigation measures, if necessary, to meet agency permit conditions for any wetland impacts caused by increased inundation
- Prior to construction, coordinate with USFS to determine the presence of any Sensitive or Survey and Manage species and take steps to minimize impacts on those species
- Prior to construction, coordinate with WDFW to determine the presence of State-listed species and Priority Habitat and Species and take steps to minimize impacts on those species
- Prior to construction, survey utilities in construction areas and take appropriate measures to minimize conflicts with any identified utilities
- Prior to raising the pool level, identify any potentially affected on-site sewage systems (OSS) to establish baseline conditions and develop mitigation strategies



for any OSS that would become noncompliant as a result of the increased reservoir pool

- Implement best management practices when appropriate, to enhance resource protection and avoid additional potential affects to surface and groundwater quality, earth resources, fish, wildlife, and their habitats

## Public Involvement

### Scoping

Reclamation and Ecology initiated the public scoping process for this EIS in October 2013. Reclamation and Ecology held two public scoping meetings in Yakima, Washington on November 20, 2013 and two scoping meetings in Cle Elum, Washington on November 21, 2013. At the meetings, Reclamation described the Proposed Action and gave attendees the opportunity to comment on the project, the scope of the EIS, the EIS process, and resources evaluated in the EIS.

The scoping period began October 30, 2013, and concluded December 16, 2013. During this period 17 comment documents and telephone calls were received. The comments covered a wide range of environmental effects. The major concerns were with surface water and the use of the additional stored water and impacts to fish, vegetation and wetlands, wildlife, threatened and endangered species, recreation, land use, transportation; socioeconomics; and cumulative effects.

Reclamation and Ecology prepared a Scoping Summary Report that summarizes the comments received (Reclamation and Ecology, 2014a). Reclamation's report is available upon request or can be accessed from the Yakima River Basin Water Enhancement Project (YRBWEP) 2011 Integrated Plan website:

<http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html>.

### Comments on the DEIS

Reclamation and Ecology released the Draft EIS (DEIS) on September 23, 2014. A Notice of Availability and Public Hearings appeared in the Federal Register on September 23, 2014. Reclamation distributed a press release announcing the availability of the DEIS and the date, time, and location of the public meetings to area media. Ecology published a Notice of Availability in area newspapers. The 60-day public comment period ended November 25, 2014.

Reclamation and Ecology distributed a total of 329 copies of the DEIS to Federal, State and local agencies; Native American Tribes; irrigation districts; interested members of organizations and entities; and the general public. The DEIS and supporting materials were also available online at Reclamation's website.

During the DEIS public comment period, Reclamation and Ecology received 21 comment letters on the DEIS with 286 individual comments. One letter was from a Tribe, three were from Federal agencies, two were from State agencies, one was from an irrigation district, seven were from organizations, and the rest were from individuals. The

comment letters are included in the Comment and Responses section of this FEIS. The major concerns related to how the benefits of the project compare to the cost; the need to clarify how the additional storage capacity would be used for instream flows; the need to include the permanent fish passage facilities in the No Action Alternative; the need to clarify impacts of inundation; and the need to better define the mitigation measures. In addition, several commenters stated their opposition to providing additional storage in the Yakima basin. Some homeowners expressed concerns about the type of shoreline protection measures that would be installed on their property.

Reclamation and Ecology held two public meetings. The first meeting was held on October 21 in Ellensburg, Washington, with eight members of the public in attendance. The second meeting was held on October 22 in Cle Elum, Washington, with 13 members of the public in attendance. No comments were provided to the court reporter at either meeting.

## **Consultation and Coordination**

Reclamation has initiated consultation with the U.S. Fish and Wildlife Service (Service) and NMFS under the Endangered Species Act (ESA). Reclamation has completed consultation with the Service under the Fish and Wildlife Coordination Act. Reclamation has initiated consultation with the Washington Department of Archaeology and Historic Preservation under Section 106 of the National Historic Preservation Act. Government-to-Government consultation with the Confederated Tribes of the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and the Confederated Tribes of the Colville Reservation is ongoing. Reclamation has contacted the Bureau of Indian Affairs (BIA) Yakima Office and the BIA Colville Tribes Office regarding Indian Trust Assets or trust lands in the project area.

Reclamation and Ecology are committed to ongoing coordination with the Tribes and resource agencies. Reclamation will complete ESA coordination with the Service and NMFS. Reclamation will complete cultural resource surveys and will continue coordination with the DAHP on impacts to cultural resources. Reclamation and Ecology will continue to consult with the Yakama Nation, CTUIR, and Colville Tribes.

## **Changes to the Draft EIS**

Reclamation and Ecology made changes to the content of the DEIS in response to public comments and further consideration of the information presented in the DEIS. Those changes are presented in this FEIS and include the following:

- Revising the description of alternatives to better define the proposed instream flow scenarios, the location of access roads and borrow areas, shoreline protection proposed for the west side of the reservoir, and improvements to aquatic habitat at stream mouths of Para, Branch and Two Coves creeks
- Revising the No Action Alternative to include construction of the permanent fish passage facilities at Cle Elum Dam and two YRBWEP Phase 2 conservation projects

- Revising the description of the affected environment to address public and agency comments
- Clarifying the impact indicators and the description of environmental effects and revising environmental effects to reflect the clarifications to the alternative descriptions
- More clearly defining proposed mitigation measures

