US Army Corps
of Engineers ®
Walla Walla District
BUILDING STRONG®

LEVEE REHABILITATION PROGRAM ASSISTANCE
PUBLIC LAW 84-99

HEISE-ROBERTS LEVEE SYSTEM
UPPER SNAKE RIVER
JEFFERSON COUNTY AND MADISON COUNTY, IDAHO

ENVIRONMENTAL ASSESSMENT

In compliance with the
National Environmental Policy Act of 1970

ADMINISTRATIVE RECORD – DO NOT DESTROY

PROJECT FILE NUMBER: PM-EC-2018-0029

July 2018

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SECTION 1 - PROJECT DESCRIPTION

1.1 Project Name

Levee Rehabilitation Program Assistance, Public Law 84-99, Heise-Roberts Levee System, Upper Snake River, Jefferson County and Madison County, Idaho

1.2 Project Location

The Heise-Roberts Levee System is located on the upper Snake River in eastern Idaho, south of the town of Rexburg (Figure 1). Coordinates of the nine repair locations are shown in Table 1.

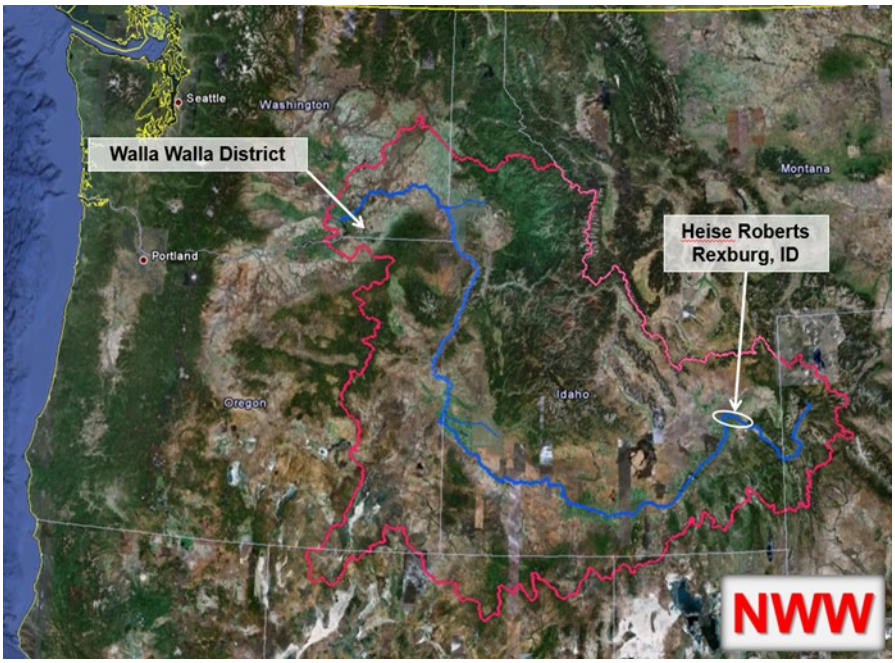

Figure 1. Project Location surrounded by the Corps Walla Walla District Boundary (NWW) in red. The blue line designates the Snake River.

Table 1. Repair Site Coordinates

Repair Site	Site Name	Township	Range	Section
17-1	Nebeker Drain Pipe	4 North	39 East	12
17-2	Bob Harrop East	4 North	39 East	1
17-3	Randy Harmon Property	5 North	39 East	34
17-4	Downstream of Lorenzo Boat Ramp	5 North	39 East	20
17-5	Downstream of Gasline Crossing	5 North	39 East	20
17-7	Bannock Feeder	4 North	40 East	6
17-8	Pennock Location	4 North	39 East	1
18-1	Hall Dairy Emergency Repair Site (New)	5 North	38 East	13
18-2	Roth Location (New)	5 North	39 East	34

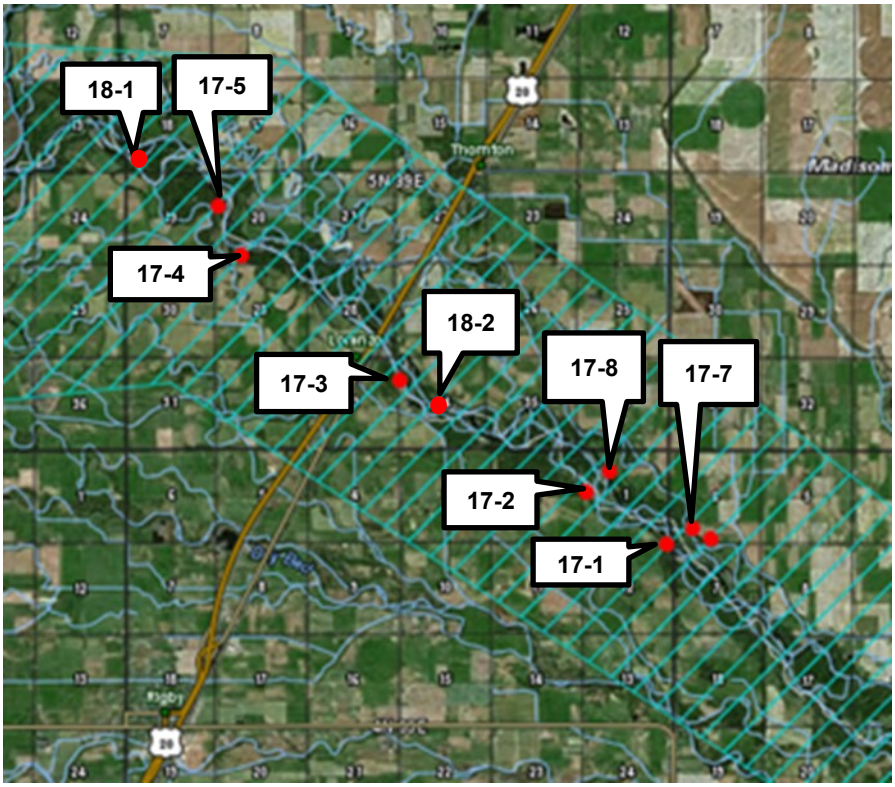

Figure 2. The Nine Repair Site Locations

1.3 Project Description

The U.S. Army Corps of Engineers, Walla Walla District (Corps) proposes to repair several sections of the Heise-Roberts Levee System along the Snake River in Jefferson and Madison counties, Idaho. The levees were damaged by sustained high flows during the 2017 and 2018 flood seasons.

Significant spring runoff caused erosion damage to and now threatens several sections of the Heise-Roberts Levee System on the Snake River in eastern Idaho. In 2017, damage occurred to seven discrete locations along several miles of the river (Figure 2). Four locations are on the left bank in Jefferson County, and three locations are on the right bank in Madison County. The sites are located from 8.3 miles upstream and 4.7 miles downstream of the Lorenzo Bridge.

In May 2018, major damage occurred at another location downstream of the Lorenzo Bridge (Site 18-1, near the Hall Dairy, Figure 3). Emergency repairs to prevent the levee from breaching were initiated on May 19, 2018 and concluded on May 22, 2018. Without expedited repair, this levee would have breached and substantial flooding damage could have occurred.

Figure 3. Severe Damage to the Levee (Site 18-1) Just Prior to the Start of Emergency Repair Work

Another site (18-2, Roth, Figure 4), was also damaged in May 2018 and repair work consisting of filling a hole in the levee with riprap (approximately 25 feet in length) and adding 50 feet of armoring to tie into the existing levee would be conducted this fall along with the repairs to Sites 17-1 through 17-5, 17-7 and 17-8.

Figure 4. Site 18-2, Roth Impingement Location

Damage to the seven sites in 2017 consisted of riprap on levee slopes and toes being eroded away making the remaining slopes steep and unstable and exposing the levee material underneath (Figure 5). Some riprap remains, but no longer provides an adequate level of flood protection. Large areas of vegetated land between the levee and the river were also eroded away during the high flows, which threatens the levee in some areas. Two of the sites (17-5 and 18-2) are currently a short distance away from the edge of the river, but have inadequate riprap and are in danger of eroding if not repaired.

Figure 5. Typical Damaged Levee Sections (Displaced Riprap and Steepened Slopes)

The repairs would include adding quarry spalls (4-6” diameter rock) and then riprap (2-4’ diameter) to cover the exposed levee fill. The total estimated volume of quarry spalls is about 9,000 cubic yards and riprap placement is about 15,000 cubic yards.

1.3.1 Background Information

The Snake River Flood Damage Reduction Project, Heise-Roberts Area (SRFDRP), is a Federally authorized and constructed group of levee systems on the upper Snake River in Madison County and Jefferson County, Idaho. Idaho Flood Control District #1 (FCD1), the non-federal public sponsor (PS), is responsible for operation and maintenance. Sections of the levees probably existed before 1900, but Federal construction of portions of the alignment began around 1948. The full length of the SRFDRP was constructed from 1960 to 1967.

The segment in need of repair provides flood reduction benefits for large tracts of agricultural land, as well as the cities of Menan, Lorenzo, and Labelle, Idaho. It is more than 30 miles long with its downstream end near the Roberts Highway (State Route 48), near RM 804. The levee crest width is typically 12 feet with side slopes approximately 2H:1V. Landside levee height varies from 0 to 12 feet.

The Heise-Roberts Levee System is separated into four systems: Left-bank South (HRL1), Right-bank East (HRR1), Right-bank West (HRR2), and Market Canal (HRMC). Sites described here for rehabilitation are limited to HRL1 and HRR1. Both sides consist of revetted and nonrevetted levee sections. Side slopes were constructed to a 2H:1V slope. The SRFDRP above the mouth of Henry’s Fork incorporated a design flow of 28,000 cubic feet per second (cfs) with three feet of freeboard (freeboard refers to the distance between the normal water level and the top of the levee or structure). The SRFDRP below the mouth of Henry’s Fork incorporated a design flow of 33,000 cfs with three feet of freeboard. The SRFDRP is both rural and urban, protecting small housing developments, roads, bridges, canals, and agricultural fields.

This Environmental Assessment (EA) was prepared in accordance with Engineer Regulation (ER) 200-2-2, *Procedures for Implementing NEPA,* and the Council on

Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA),* Title 40 Code of Federal Regulations (CFR), Part 1500-1508. The objective of the EA is to evaluate potential environmental effects of the proposed levee rehabilitation action and determine if significant effects would result. If such effects are relatively minor, a Finding of No Significant Impact (FONSI) would be issued and the Corps would proceed with the proposed action. If the environmental effects are determined to be significant, an Environmental Impact Statement (EIS) would be prepared before a decision is reached on whether to implement the proposed action. Applicable laws under which these effects would be evaluated include but are not limited to, NEPA, the Endangered Species Act, the Clean Water Act, the Clean Air Act, and the National Historic Preservation Act.

Three of the damaged sites, 17-2, 17-4, and 17-5 are located on lands currently managed by the Bureau of Land Management (BLM). The Corps coordinated with the BLM in the development of this Environmental Assessment to assure that impacts to environmental resources on public lands would be short-term and minimal.

1.3.2 Authority

On July 5, 2017, Idaho FCD1 requested assistance from the Corps, Walla Walla District, to repair the damage to the levees under Public Law (PL) 84-99, Flood and Coastal Storm Emergencies. Under this law, the Chief of Engineers, acting for the Secretary of the Army, is authorized to undertake activities including disaster preparedness, Advance Measures, emergency operations (Flood Response and Post Flood Response), rehabilitation of flood control works threatened or destroyed by flood, protection or repair of Federally authorized shore protective works threatened or damaged by coastal storm and provisions of emergency water due to drought or contaminated source. In response to the Flood District's request, the Walla Walla District prepared a "Rehabilitation Project Information Report for Heise-Roberts Levee System" which was found acceptable by the U.S. Army Corps of Engineers Northwestern Division on February 7, 2018. As required by PL 84-99, a Cooperation Agreement for Rehabilitation of a Federal Flood Control Work was executed between the Corps and the FCD1 on March 16, 2018.

1.4 Purpose and Need

The Corps proposes to repair several sections of the Heise-Roberts Levee System along the Snake River in Jefferson and Madison counties, Idaho. The purpose of the proposed action is to provide flood risk management to affected areas of Jefferson and Madison counties. Rehabilitation would include repairing the levees to "as-was condition" in a manner that would not change the character, scope, or size of the original fill design. The action is needed because the levees protect nearby homes, agricultural land and municipal facilities that are now at increased risk from flood damages.

1.5 Construction Timeline

Emergency flood-fight assistance at Site 18-1 occurred from May 19, 2018 through May 22, 2018.

Repair of the remaining eight sites (to include additional repair work at Site 18-1) would be conducted in 2018 during the in-water work window for this area, which is September 15 through October 31. It is anticipated that construction activities would occur during the entire six-week period. Some stockpiling of repair materials would occur prior to September 15th at locations selected by the contractor throughout the project area.

SECTION 2 - ALTERNATIVES

Two alternatives are evaluated in this EA; the No Action Alternative and the Proposed Action Alternative. The statutory objectives/scheme supporting an action can serve as a guide to determine the reasonableness of objectives outlined in the EA – in this case assistance under PL 84-99. Additionally, an agency's obligation to consider alternatives under an EA is a lesser one than under an EIS. Consequently, only the No Action and Proposed Action Alternatives are analyzed further. The No Action Alternative does not satisfy the project's purpose and need, but NEPA requires analysis of the No Action Alternative to set the baseline from which to compare other alternatives. No Action does not mean there would be no environmental impacts from this alternative.

2.1 Alternative 1: No Action

Under the No Action Alternative, the Corps would not re-construct the damaged levee segments to the as-was condition. Flows would eventually erode unprotected levee embankments and the levee system would continue to weaken and degrade. Flooding could occur resulting in damage to an irrigation channel and private and public properties during the next high flow event. The No Action Alternative does not meet the purpose and need, but is presented as required by NEPA to set the baseline from which to compare all other alternatives.

2.2 Alternative 2: Proposed Action – Levee Repair

Under the proposed action, the Corps would re-construct the damaged locations along several miles of the Heise-Roberts Levee System to the as-was condition by re-constructing portions of the levee that eroded away and replacing the armoring on the riverward side. There are six locations along HRL1 totaling 4,145 feet and three locations along HRR1 totaling 675 feet. Eight locations would be rehabilitated to the original levee condition. One location (Site 17-5) would have the toe excavated and reinforced. Construction activities include tree and shrub removal (approximately eight trees at site 17-5), re-grading the damaged side slopes, placing fill material, and placing riprap. The majority of the damaged levee sections do not contain trees or shrubs due to the heavily armored shoreline. However, several trees and shrubs would be affected in some areas, as indicated above. Any vegetation along the levee toe would be removed from Site 17-5. Vegetation would be removed with an excavator. While the vegetation was being removed, it would not be allowed to enter the water.

River depth varies significantly throughout this reach. There would be disturbance below the Ordinary High Water Mark at some of the repair sites to repair the levee toe and place riprap. Some sites could be 12 to 20 feet deep at the toe of riprap placement. Other areas would be excavated at the base of the levee to reestablish a solid toe, with

existing vegetation between the levee and the river being left intact. See Appendix A for drawings and typical cross sections for each site.

A tracked excavator would be used to place quarry spalls (4-6” diameter rock) to cover the exposed levee material, and then riprap (2-4’ diameter rock) would cover the quarry spalls. The material could be hauled by dump trucks from Byrne Quarry (a potential rock source) which is located approximately ten miles northeast of Rigby, Idaho (Figure 6). The Byrne Quarry is surrounded by agricultural land and sage brush and juniper shrub habitat. This site was previously disturbed and has been used as a rock quarry for a number of years. However, there are other rock sources in the area that could be used.

The emergency repair that was conducted at Site 18-1 in May 2018 consisted of placing approximately 6,200 cubic yards of riprap and 800 cubic yards of quarry spalls along a 300 foot segment of the levee. Additional repair work to tie-in both ends of the newly repaired levee (400 feet upstream and 100 feet downstream) would be conducted in September 2018.

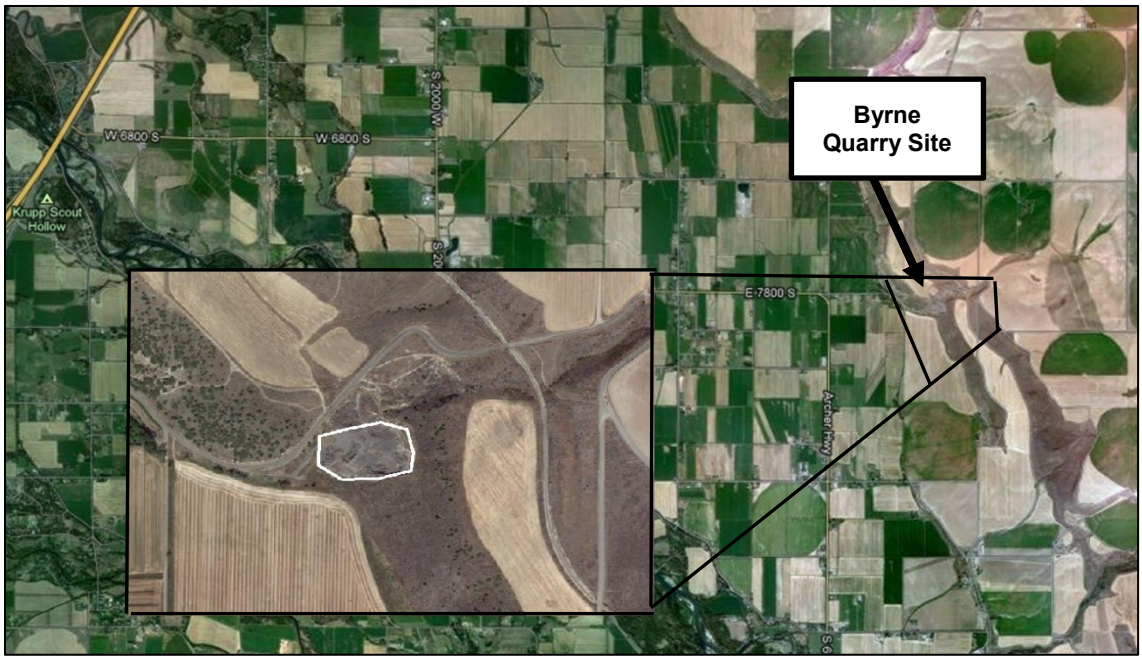

Figure 6. Location of the Byrne Quarry Site

SECTION 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

This section describes the existing affected environment (existing condition of resources) and evaluates potential environmental effects on those resources for each alternative. Although only relevant resource areas are specifically evaluated for impacts, the Corps did consider all resources in the proposed project area and made a determination as to which ones to evaluate. The following resource areas were evaluated: water quality, aquatic resources, wildlife, vegetation, threatened and endangered species, cultural resources, soils, socioeconomics, recreation, climate

change and cumulative impacts. It was determined that it was not necessary to evaluate aesthetics/visual quality, environmental justice, noise, or air quality as implementation of the proposed action would not affect these resources.

Table 2. Environmental Resources Not Evaluated Further

Environmental Component	Explanation
Aesthetics/Visual Quality	The proposed action would restore the levee to its original condition. No noticeable permanent structure or visual obstruction would remain.
Environmental Justice	The proposed action would have no negative impacts (e.g. economically) on any minority/ethnic group or social class.
Noise	The project area is located in rural Jefferson County and Madison County. Construction noise would come from heavy equipment and the placement of riprap and would take approximately six weeks.
Air Quality	The project area meets Idaho State's ambient air quality standards and is in "attainment". Air quality would be negligibly impacted by the proposed action.

3.1 Water Quality

3.1.1 Affected Environment

The Snake River near the Heise-Roberts levee system is a cold water system characterized by braided channels that migrate within the confines of the floodplain and levee system. Mean water temperatures range from 35°F to 68°F, while normal water discharge ranges from 1,200 cfs in November to 9,600 cfs in June. In 2017 and 2018 flows were higher, exceeding 20,000 cfs at the "Snake River near Heise, Idaho" stream gage (USGS gage no. 13037500).

The floodplain is constrained but well established in some areas, while riparian vegetation is extensive and is dominated by cottonwood and willow habitats. The upper Snake River is not listed as impaired within the project area. However, irrigation water constitutes over 90% of all water use in the basin and returns in the area from this use are high in phosphorus, nitrates, and some pesticides.

3.1.2 Environmental Consequences

3.1.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative there would be minor effects on water quality in the project area. The Corps would not repair the Heise-Roberts Levee System, but would allow the levees to continue to function in their damaged state. No ground disturbing activities would take place and no alterations of any levee would occur. The continued erosion of these levees would have minor, less than significant effects to water quality in the project area.

3.1.2.2 Alternative 2: Proposed Action – Levee Repair

Under the Proposed Action Alternative, the effects to water quality in the project area would be greater than the No Action Alternative, but still less than significant. Excavation and levee re-shaping would require work below the Ordinary High Water Mark of the Snake River. Effects would likely include increased sediment transport and increased turbidity at repair sites and for some distance downstream. These effects would be localized and short term. To minimize sediment transport and increased turbidity, work would be conducted prior to high flows and would take approximately six weeks.

3.2 Aquatic Resources

3.2.1 Affected Environment

Over 75 species of invertebrates and a dozen fish species inhabit this section of the river. Fish species found in the area include longnose and speckled dace, mottled and Paiute sculpin, Utah sucker, mountain whitefish, smallmouth bass, cutthroat trout, rainbow trout, and brown trout. Aquatic invertebrates include caddisfly, mayfly, stonefly, blackfly, cranefly, various midge species, water mites, leaches, worms and snails.

3.2.2 Environmental Consequences

3.2.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative there would be minor effects on aquatic resources in the project area. The Corps would not repair the levee system, but would allow the levees to continue to function in their damaged state. No ground disturbing activities would take place and no alterations of any levee would occur. The continued erosion of these levees would have minor effects to aquatic resources in the area. It is likely that land between the levee and the river would continue to erode as the river continues to shift toward the levee in some areas. If the levees were to breach, some fish and other aquatic resources would be swept onto the floodplain where they could become trapped in ditches, ponds, or depressions as the water recedes.

3.2.2.2 Alternative 2: Proposed Action – Levee Repair

Under the Proposed Action Alternative, there would be minor, less than significant impacts to aquatic resources in the project area. Excavation and levee re-shaping would require work below the Ordinary High Water Mark of the Snake River. Minor disturbance to fish and aquatic organisms may occur at the levee repair sites. Additional disturbance may occur downstream from these sites due to limited sediment transport and increased turbidity during excavation. However, effects would be localized and short term. Work is scheduled to occur when flow is low. The levees need to be repaired prior to the next high flows when additional damage could breach the levees. Some aquatic invertebrates would be lost during excavation and sedimentation, but these would be minor relative to the extensive populations of the river system. Fish could move to avoid repair sites until excavation is complete.

3.3 Wildlife

3.3.1 Affected Environment

The diverse habitat of the area is home to over 130 wildlife species, including nearly 40 mammal species, 84 bird species, and 11 species of reptile or amphibian. Common mammal species include mule and whitetail deer, coyote, striped skunk, red fox, badger, beaver, deer mice, and cottontail rabbit. Bird species include over a dozen waterfowl species, several upland game bird species, numerous song and migratory birds, and a number of raptors. Some of the more common species include: Canada geese, barn swallow, magpie, red-tailed hawk, American robin, song sparrow, and mourning dove. Sensitive species of the valley include: greater sage grouse, northern leopard frog, white faced ibis, bald eagle, peregrine falcon, and yellow-billed cuckoo.

3.3.2 Environmental Consequences

3.3.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, there would be minimal effect on wildlife in the project area. The Corps would not repair the Heise-Roberts Levee System, but would allow the levees to continue to function in their damaged state. No construction-related ground disturbing activities would take place and no alterations of any levee would occur. The continued erosion of these levees would have no negative impact to wildlife in the area. However, continued erosion of the land between the levees and the river would reduce the amount of riparian habitat along the river, especially during high flow years.

3.3.2.2 Alternative 2: Proposed Action – Levee Repair

Under the Proposed Action Alternative, there would be minor, less than significant impacts to wildlife in the project area. Grubbing and clearing would remove limited shrub habitat on the levee that may impact small birds and mammals in the area. However, the loss of shrub habitat is minor relative to existing shrub habitat in the area. There may be some loss of small mammals during excavation, but most of the species using this habitat would simply relocate to nearby habitats. In addition, construction is scheduled to be conducted after the nesting season for migratory birds and should not impact these species. The introduction of heavy equipment into the area would cause larger, more mobile species to avoid the levee repair sites during construction. This disturbance would be relatively short in duration and restricted to relatively small areas.

3.4 Vegetation

3.4.1 Affected Environment

Climate is a major factor in determining vegetation. In the upper Snake River Basin, climate is influenced predominantly by eastward-moving air-masses from the Pacific Ocean. The area receives 8 to 10 inches of precipitation annually. The semi-humid mountainous parts of the basin receive the greatest amount of precipitation as snow, generally between November and March. The project area is located in the high desert province where sagebrush-steppe habitat has been replaced by agriculture in much of

the area. Primary crops in the area include barley, corn, oats, wheat, potatoes, and alfalfa. Vegetation in the valley bottom near the Snake River is markedly different than that in the upland areas. Upland sites are dominated by agriculture crops, grazing lands, or sagebrush and juniper shrub habitats, while riparian areas are characterized by riverbanks lined with cottonwood, willow, Russian olive, dogwood, water birch, and alder. Understory plants include horsetail, wild rose and milkweed. Open habitats are dominated by Kentucky blue grass, clover, meadow fescue, and sedges (Fertig et al. 2005). Riparian habitats near levee repair sites support limited vegetative cover.

3.4.2 Environmental Consequences

3.4.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, there would be no effect on vegetation in the project area. The Corps would not repair the Heise-Roberts Levee System, but would allow the levees to continue to function in their damaged state. No ground disturbing activities would take place and no alterations of any levee would occur. The continued erosion of these levees would have no negative impact to vegetation in the area.

3.4.2.2 Alternative 2: Proposed Action – Levee Repair

Under the Proposed Action Alternative, there would be minor, less than significant impacts to vegetation in the project area. Grubbing and clearing would remove limited shrub and grass habitat on the levee. A total of approximately eight trees would be removed from the levee at Site 17-5. Vegetation cover is limited on these areas. The loss of vegetation is minor relative to other existing habitats in the area.

3.5 Threatened and Endangered Species

3.5.1 Affected Environment

On March 5, 2018, the Corps reviewed the current list of threatened and endangered species that may exist in the project area under jurisdiction of the U.S. Fish and Wildlife Service (USFWS) for Jefferson and Madison counties in Idaho. There are no species under the jurisdiction of the National Marine Fisheries Service (NMFS) in the project area. The list of USFWS protected species is shown in Table 3.

Table 3. ESA-Listed Species that are Listed in Jefferson and Madison Counties, Idaho

Species	Scientific Name	Status
USFWS		
Listed Species		
Canada Lynx	*Lynx canadensis*	Threatened
Ute Ladies'-Tresses	*Spiranthes diluvialis*	Threatened
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened
North American Wolverine	*Gulo gulo luscus*	Proposed Threatened

Critical habitat is proposed for yellow-billed cuckoo in the project area.

3.5.2 Environmental Consequences

3.5.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, there would be no effect on threatened and endangered species in the project area. The Corps would not repair the Heise-Roberts Levee System, but would allow the levees to continue to function in their damaged state. No ground disturbing activities would take place and no alterations of any levee would occur. The continued erosion of these levees would have no negative impact to listed species in the area.

3.5.2.2 Alternative 2: Proposed Action – Levee Rehab

Implementation of the Proposed Action Alternative may affect, but is not likely to adversely affect yellow-billed cuckoo and Ute ladies'-tresses in the project area. ESA consultation with the USFWS has been conducted. A biological assessment was prepared and sent to the USFWS on May 8, 2018 for the original eight sites. The original eight sites included Site 17-6 (Robinson Location) which was later removed because it was determined that the structural integrity of the levee had not been compromised. The USFWS provided a letter of concurrence with the Corps effect determination on June 4, 2018 (Appendix B). Yellow-billed cuckoo utilize the riparian forest habitat along the Snake River. Ute ladies'- tresses was first discovered in Idaho along the South Fork of the Snake River. The species is now known from Bonneville, Fremont, Jefferson, and Madison counties along the Snake River. Canada lynx and North American wolverine are not known to exist in the project area and, based on their life history requirements, these species are not likely to occur in any areas that are part of the proposed action.

An emergency consultation with the USFWS was initiated on May 17, 2018 and completed on June 1, 2018 for the emergency flood fight at Site 18-1, near the Hall Dairy. It was determined the action had no effect on ESA-listed species, but coordination with the USFWS was determined appropriate under these circumstances. Site 18-2 was not included in the original consultation, but the Corps has determined there would be no effect to any ESA species at this site, so consultation is not required.

3.6 Historic/Cultural Resources

3.6.1 Affected Environment

The area of potential effect (APE) for the proposed action is the nine discrete damaged sections of levee, along with staging areas and access roads that would service the repair work. All of the levees are accessible by existing roads, including maintained access roads located on the levees themselves. Equipment staging areas would be located at existing borrow areas and on the roads that form the tops of the levees. Basic levee materials would be acquired from the existing and nearby commercial Byrne Quarry or other rock sources in the area.

Ray Tracy (2005) and Scott Hall (2012), archaeologists with the Corps, previously evaluated proposed levee repairs at numerous damaged areas throughout the Heise-

Roberts reach, including near the location of the 17-3 Randy Harmon property and 17-5 Gasline Crossing. Tracy (2005) submitted a site form for what was described as the Lorenzo Reach, Heise-Roberts Levee (Temp No. 5N37E-001). Those reports concluded that the proposed repairs were part of an on-going program (the report cites 23 previous repair actions on the levee) whereby rehabilitation efforts restored the levee back to its original configuration. Investigations concluded that there would be no adverse effect to the historic Lorenzo Reach, Heise-Roberts Levee.

Similarly, all of the proposed rehabilitation actions reviewed for this report (Sites 17-1 through 17-5, 17-7, 17-8, 18-1 and 18-2) are within the historic Lorenzo Reach, Heise-Roberts Levee. Comparable to the undertakings investigated by Tracy and Hall, rehabilitation would utilize in-kind materials to restore the levees to their original configuration. Thus, the Corps determined that the undertaking would have no adverse effect to historic properties. The Corps consulted with the Idaho State Historic Preservation Office (SHPO) and submitted these findings and site forms for the Heise-Roberts Levee. The Idaho SHPO concurred with the Corps findings in a letter dated June 22, 2018 (Appendix C).

3.6.2 Environmental Consequences

3.6.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, there would likely be no immediate significant impacts to Historic/Cultural Resources in the project area. The Corps would not repair the damaged sections of the revetments and would allow the levees to continue to function in their damaged state. The continued erosion at the damaged areas would incrementally impact the integrity of the levee and likely affect an expanding extent. Degraded levees pose an increased risk of future catastrophic flood events. Levee failure and breaches have potential to impact historic resources distant from the levee system through flood inundation, erosion and damage to the historic built environment and archaeological resources that may be unassessed and unrecorded.

3.6.2.2 Alternative 2: Proposed Action – Levee Repair

Under the Proposed Action Alternative, there would be no significant impact on Historic/Cultural Resources in the APE. Proposed rehabilitation activities would utilize similar basic materials for the restoration of the nine damaged levee sections to their original, as-built configuration. Staging areas and access roads would be restricted to previously disturbed or constructed resources. Thus, the proposed action would not significantly impact the character, scope and size of the levees. The proposed repair would restore the integrity of the levee and diminish the risk of potential impacts due to uncontrolled flooding on historic properties outside of the APE. If archaeological remains are found during construction, all work in the area of the discovery would cease (construction can proceed elsewhere), efforts would be made to protect the find, and the District Archaeologist would be contacted immediately.

3.7 Soils

3.7.1 Affected Environment

The Snake River enters the Snake River Plain over an alluvial fan near Heise, Idaho and has relatively high velocities that transport large quantities of sand and gravel. Early surveys reveal that top soil in the area is from 1 to 8 feet deep and is composed primarily of silt, silty sand, or clay silt (USACE 1948). More recent studies have identified the dominant soils of the area as gravel, sand, and sandy silt. These soils form islands and bar-tops and beaches exposed at low water levels and are subject to flooding and high water tables. The thickness of these soils is generally less than 10 feet (Phillips and Welhan 2011).

3.7.2 Environmental Consequences

3.7.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, there may be moderate negative impacts to soils in the project area. The Corps would not repair the Heise-Roberts Levee System, but would allow the levees to continue to function in their damaged state. Dam or levee failures can have greater environmental effects than those associated with a normal flood event. The soil loss from erosion and scouring would be substantially greater, because of a large amount of fast-moving water affecting a small area. Large amounts of sediment from erosion can alter the landscape and change the ecosystem. In addition, hazardous materials are carried away from flooded properties and distributed throughout the floodplain. Industrial and agricultural chemicals and wastes, solid wastes, raw sewage, and common household chemicals comprise the majority of hazardous materials spread by floodwaters along the flood zone.

3.7.2.2 Alternative 2: Proposed Action – Levee Repair

Under the Proposed Action Alternative, there would be minor, less than significant short-term effects on soils in the project area. Long-term effects would be positive. Excavation of eroded levees would cause minor disturbances to already disturbed levee sites. Once the levee repairs are complete, soil erosion would be reduced from current levels and future soil losses would be minimized.

3.8 Socioeconomics

3.8.1 Affected Environment

The Heise-Roberts Levee System is located within Jefferson and Madison counties, Idaho. In 2017, Idaho had an estimated population of 1.717 million and Jefferson and Madison counties had estimated populations of 28,446 and 39,141 respectively.

The median household income for Jefferson and Madison counties in 2016 dollars is $54,646 and $33,856 respectively. Major industries in the area include Agriculture & Forestry, Educational Services, Health Care, Construction, Professional Services, Lodging & Food Services, Food Processing, Government, Social Services, Grocery

Wholesalers, Recreation, and Retail Services. According to the Bureau of Labor Statistics, in November 2017, the unemployment rate of Jefferson and Madison counties was 2.5% and 1.9% respectively. The national average at that time was 4.1% (U.S. Bureau of Labor Statistics).

3.8.2 Environmental Consequences

3.8.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, there may be negative impacts to socioeconomics in the project area. The Corps would not repair the Heise-Roberts Levee System, but would allow the levees to continue to function in their damaged state. Levee failure could result in the loss of property and livelihood.

3.8.2.2 Alternative 2: Proposed Action – Levee Repair

Under the Proposed Action Alternative, there would be no negative impacts to socioeconomics in the project area. During the construction period there would be minor economic benefits to local businesses in the area as a result of contractors working in the vicinity. In addition, the repair to sections of the Heise-Roberts Levee System would result in the protection of private and public property.

3.9 Recreation

3.9.1 Affected Environment

There is limited recreation access along the levees due to private ownership. The Lorenzo Boat Ramp (located .8 miles upstream from site 17-4) is heavily used during the spring and summer months and provides easy access for fishing and boating which are the primary recreation activities in the proposed action area.

3.9.2 Environmental Consequences

3.9.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, negative effects to recreation in the proposed action area would not be immediate. Popular recreating activities in and around the Snake River would continue as normal during the spring and summer of 2018. If the levees are not repaired and high flows occur again during the next spring runoff, it is possible that river access areas along the Heise-Roberts Levee System would be impacted and need to be temporarily closed to the recreating public.

3.9.2.2 Alternative 2: Proposed Action – Levee Repair

Implementation of the Proposed Action Alternative would possibly have temporary negligible negative effects on recreation activities in the project impact area. Dump trucks and other heavy machinery could pass by or be present near the Lorenzo Boat Ramp, however, construction would not begin until mid-September 2018 after the main recreation season has passed.

3.10 Cumulative Impacts

The National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations implementing the Act require Federal agencies to consider the cumulative impacts of their actions. Cumulative effects are defined as, “the impact on the environment which results from the incremental impact of an action when added to other past, present and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR § 1508.7). Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

The Heise-Roberts Levee System has a history of periodic environmental impacts tracing back to the construction of the original levees. Regular inspections have identified intermittent repair needs. These repairs have been similar in scope to the proposed action. Damaged locations were identified, repairs made and the levee returned to its original shape or condition. Impacts were temporary in nature and the disturbance was localized. Access roads to maintain and inspect levees are minimally maintained and occasionally require minor repairs. These effects are minor and localized.

The Proposed Action would not involve increased obstructions to the floodway. The rehabilitation of the flood controls works consists of repairs of existing structures to their previous condition. These types of projects typically result in minor short-term construction-related impacts to wetlands, fish, wildlife and the habitats upon which they depend; however, there are no collectively significant cumulative environmental impacts of the Proposed Action primarily because it restores the existing flood control levee system back to its pre-damaged condition. Potential adverse effects are construction-related (e.g., increased noise, turbidity, and dust) and are of a minor and temporary nature.

There are no known major cumulative impacts from the proposed action to repair the Heise-Roberts Levee System. The expected impacts are short term and localized and would not have significant negative impacts to resources. All repairs would be carried out in previously disturbed habitats and would not enlarge the footprint of the levee system.

SECTION 4 - COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

4.1 National Environmental Policy Act

This Environmental Assessment was prepared pursuant to regulations implementing the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.). NEPA provides a commitment that Federal agencies will consider the environmental effects of their proposed actions prior to implanting those actions. Completion of this environmental assessment and signing of a Finding of No Significant Impact (FONSI), if applicable, fulfills the requirements of NEPA.

4.2 Endangered Species Act

The Endangered Species Act (ESA) established a national program for the conservation of threatened and endangered fish, wildlife and plants and the habitat upon which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with the USFWS and NMFS, as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats. Section 7(c) of the ESA and the Federal regulations on endangered species coordination (50 CFR §402.12) require that Federal agencies prepare biological assessments of the potential effects of major actions on listed species and critical habitat.

Potential effects to threatened and endangered species were analyzed in the *Heise-Roberts Levee Rehabilitation Project Biological Assessment"* (BA) prepared by the Corps in April 2018. The Corps determined that "this action, as proposed, may affect, but is not likely to adversely affect yellow-billed cuckoo and would not adversely modify its proposed critical habitat." The Corps also determined "the action may affect, but is not likely to adversely affect Ute ladies'-tresses and the action will have no effect on all other listed, or proposed species or their designated or proposed critical habitats." The Corps requested informal consultation with the U.S. Fish and Wildlife Service on the original eight repair sites on May 8, 2018 and received a Letter of Concurrence on June 4, 2018 (Appendix B). Emergency consultation with the USFWS was initiated on May 17, 2018 and completed on June 1, 2018 for emergency repairs at Site 18-1. It was determined the emergency action had no effect on ESA-listed species, but coordination with the USFWS was determined appropriate under the circumstances. Site 18-2 was not included in the original consultation, but the Corps has determined there would be no effect to any ESA-listed species at this site. Therefore, no further ESA consultation is required. There are no ESA-listed species in the proposed action area that are under the jurisdiction of the National Marine Fisheries Service.

4.3 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 as amended directs Federal agencies to assume responsibility for all cultural resources under their jurisdiction. Section 106 of NHPA requires agencies to consider the potential effect of their actions on properties that are listed, or are eligible for listing, on the National Register of Historic Places (NRHP). The NHPA implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, requires that the federal agency consult with the State Historic Preservation Officer (SHPO), Tribes and interested parties to ensure that all historic properties are adequately identified, evaluated and considered in planning for proposed undertakings.

The Corps has determined that this action, as proposed, would result in no adverse effect to historic properties. The Idaho SHPO concurred with the Corps finding in a letter dated June 22, 2018 (Appendix C). The Corps did not identify any historic properties of potential religious or cultural significance to Native American tribes so no tribes were consulted.

4.4 Clean Water Act

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Section 401 of the Federal Clean Water Act requires that any Federal activity that may result in a discharge of dredged or fill material to waters of the United States must first receive a water quality certification from the state in which the activity would occur. Section 404 of the Clean Water Act established a program to regulate the discharge of dredged or fill material into waters of the United States.

The project does not require a Section 404 permit. It is exempt under 33 CFR 323.4, November 13, 1986, as amended, August 25, 1993. The exemption reads as follows: Maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. Maintenance does not include any modification that changes the character, scope, or size of the original fill design. Emergency reconstruction must occur within a reasonable period of time after damage occurs in order to qualify for this exemption. The repair work is scheduled for construction in September and October of 2018.

4.5 Executive Order 11988 Floodplain Management

This EO requires Federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

The Proposed Action would re-construct the levee to pre-damage condition. This would not increase the development within the floodplain.

SECTION 5 - CONSULTATION AND COORDINATION

The Corps initiated coordination with the Bureau of Land Management (BLM) in August 2017 in order to identify land in the proposed action area that belongs to BLM and in which Rights-of-Way (ROW) would be needed to complete repairs. In late October 2017, BLM indicated that four of the original eight sites were indeed within perpetual ROWs issued to FCD1. As a requirement of a signed Cooperation Agreement, the PS must furnish all lands, easements and ROWs necessary for the construction, operation and maintenance of the rehabilitation effort determined necessary in order to complete the repairs under a levee repair construction contract. On June 4, 2018, FCD1 provided the Corps evidence of its existing BLM Right-of-Way, IDI-32192, effective September 23, 1997, as amended April 8, 1998 and March 20, 2013. Together with its Attorney's Certificate, Certification of Lands and Authorization, and Risk Analysis, FCD1 asserts that it has sufficient rights in the lands for the proposed project, including all the sites located on BLM lands.

Coordination continued with BLM in March 2018, this time with environmental staff members for information related to reducing potential effects on ESA-listed species and

other environmental resources that could be near the repair sites. BLM environmental staff reviewed this EA in draft form in May 2018 and confirmed that the proposed action would not detrimentally affect resources on public lands.

The Corps consulted with the USFWS on the potential effects to Ute ladies'-tresses and yellow-billed cuckoo. The Corps prepared a draft biological assessment and provided it to the USFWS on April 2, 2018. The USFWS provided valuable feedback and suggested revisions on the draft. The Corps and USFWS attended a site visit to the proposed repair sites on April 24, 2018. The Corps requested informal ESA consultation on May 15, 2018. The USFWS provided a concurrence letter on the Corps "not likely to adversely affect" determination for the proposed action on June 4, 2018 (Appendix B).

The Corps initiated an emergency consultation with the USFWS on May 17, 2018 for the repair of Site 18-1, near the Hall Dairy. The emergency repair was completed on May 22, 2018. No ESA species were affected by the repair work. Site 18-2 was not included in the original consultation, but there would be no effect to any ESA species at this site, so consultation is not required.

There are no species under the jurisdiction of the National Marine Fisheries Service in the project area.

The Idaho SHPO concurred with the Corps determination of "No Adverse Effect to Historic Properties" in a letter dated June 22, 2018.

SECTION 6 - REFERENCES

ER 200-2-2 (33 CFR 230) Environmental Quality Procedures for Implementing the National Environmental Policy Act.

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40 CFR 1500-1508 Regulations for the Procedural Provisions of the National Environmental Policy Act.