

Clean Water Act Section 404 Analysis

Albeni Cove Bank Stabilization Project Bonner County, Idaho

**Clean Water Act
Rivers and Harbors Act**

Prepared by:

**U.S. Army Corps of Engineers
Seattle District
Environmental Resources Section**

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**US Army Corps
of Engineers ®
Seattle District**

1.0 INTRODUCTION

The purpose of this document is to record the U.S. Army Corps of Engineers (USACE) compliance evaluation of the Albeni Cove Bank Stabilization project pursuant to the Clean Water Act (CWA), the Rivers and Harbors Act (RHA), and the General Regulatory Policies of USACE.¹ Specifically, Section 404 of the CWA requires an evaluation of impacts for work involving discharge of fill material into the waters of the U.S., and evaluation guidance can be found in the CWA 404(b)(1) Guidelines [40 CFR §230.12(a)]. Section 10 of the Rivers and Harbors Act [33 USC §403] prohibits modification to or creation of an obstruction within a navigable water of the U.S. unless recommended by the Secretary of the Army and authorized by the Chief of Engineers. The General Regulatory Policies of the Corps of Engineers [33 CFR §320.4(a)] provide measures for evaluating permit applications for activities undertaken in navigable waters.

The main body of this document summarizes the information presented in Attachment A and includes relevant information from the Environmental Assessment for the project that was collected pursuant to the National Environmental Policy Act (NEPA) of 1969 [42 USC §4321 et seq.]. Attachment A provides the specific USACE analysis of compliance with the CWA 404(b)(1) and the General Regulatory Policy requirements.

2.0 PROJECT BACKGROUND

The Albeni Cove recreation area is owned and managed by the US Army Corps of Engineers as part of the Albeni Falls Dam project. It has 10 recreational vehicle (RV) sites and four tent sites, a swimming cove, a boat launch, picnic tables, drinking water, and a restroom with toilets and showers. It is open between May and September. Information on the site is available at http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=ALBENI&pagename=Albeni_Cove.

3.0 PROJECT NEED

Over several years, wave action, primarily from passing boats, has caused erosion along several hundred feet of shoreline at Albeni Cove, the Corps of Engineers' recreation area on the Pend Oreille River in northern Idaho, just upstream of Albeni Falls Dam. In places, several feet of bank have been lost. Undercutting has occurred, and some tree loss has taken place or is imminent. Individual campsites in some places are at risk, as is a trail to the sites. Potentially, infrastructure such as water lines, faucets and fire hydrants, and rails would need to be relocated as the erosion progresses. A cultural resources site also stands to be impacted. Cost-effective action is needed to address this issue.

4.0 PROJECT PURPOSE

The purpose of the project is to stem further erosion and loss of standing trees and other vegetation along 1,600 feet of shoreline at the Albeni Cove Recreation Area, to prevent erosion of a remaining cultural site, and to prevent loss or relocation of existing facilities.

¹ The jurisdictional line for both the CWA and the RHA is the Ordinary High Water Line (OHW) located at 2062.5 feet mean surface level (MSL), as referenced by North American Vertical Datum (NAVD) 29.

5.0 PROPOSED ACTION AND ALTERNATIVES

Five alternatives were considered for this project. A No-Action Alternative and the Preferred Alternative (bank stabilization using rock and large woody debris) were carried through detailed analysis. A non-structural alternative, a bioengineering alternative, and a shortened length alternative were considered but rejected as not meeting the project purpose and need. The draft Environmental Assessment (EA) is available online at: http://www.nws.usace.army.mil/ers/doc_table.cfm. Note that the comment period for the draft EA closed as of January 22, 2008.

No Action

Under the no-action alternative, no work would be done to stabilize the shoreline, while the campground would continue to be managed as such. The shoreline would continue to erode and place at risk a cultural resources site, two campsites, water lines, faucets and fire hydrants, and rails. Later work would need to be done to move, stabilize, repair or replace affected infrastructure.

Preferred Alternative: Bank Stabilization Using Rock and Large Woody Debris

Using Class III riprap (range of diameter = 6-20 in.; median diameter = 15 in.), the bank will be protected by placing rock along the affected areas of shoreline. Rock will be placed between elevations 2055 and 2065 (in some cases the toe will be higher), and will be inserted a short distance into bank undercuts, where possible.

Work will be planned to coincide with the lower operating limit of Albeni Falls Dam, in December 2008 and/or January 2009. Construction will be conducted from land on the swimming spit, where no vegetation impedes access. Placement along the vegetated bank to the east of the swimming cove will be from the waterward side, on the dewatered substrate. In places where trees have come down on the shoreline or must be removed for the work, those trees, including rootwads and branches, will be anchored in place with the rock, to provide cover for fish and wildlife. Topsoil will be placed in the interstices of the rock, and native plantings of native willows (*Salix* spp.) and Douglas spirea (*Spirea douglasii*) will be placed for riparian shade and cover.

Design drawings specify a 2 horizontal:1 vertical slope along the eastern cove shoreline and a 1.5:1 slope along the swimming spit shoreline. Following minimal excavation to achieve the desired slope, a 1-ft minimum layer filter rock (3-inch-minus) will be placed to prevent fine sediment from washing through the voids of the larger armor layer and into the river. Once the slope is established, Class III riprap armor rock will be placed on top of the filter layer. The thickness of the armor rock is specified as 2 ft and 4 ft for the 2:1 and 1.5:1 side slopes, respectively. Smaller rock will be placed in the spaces between larger stone to minimize void space. The toe of the armored slope along the swimming spit will be keyed in using a buried toe to prevent toe slip failure. The excavated material will then be placed on top of the armor rock. Any incidental native vegetation cleared for construction will be replanted with the same or similar plant species. Where access is needed for machinery to work on the riverbed, a gravel pad will be laid down. Construction will proceed from the far (southeast) end of the project area, working backward so that the pad material will be covered and incorporated into the bank protection.

Construction material will consist of graded Class III riprap, 3-inch-minus crushed stone, and soil. All rock material will be obtained from a state permitted source. Machinery used for construction includes a D-4 bulldozer with 6-way blade and 3-prong ripper or equivalent, 200 Series excavator with thumb or equivalent and dump trucks. Riverbed access will be via existing park roads for the majority of the work. Near the small cove (the “J cove”) shown at cross-section J on the design drawings (see Appendix B), the riverbed elevation is approximately 2053’. It will be necessary to create access across the cove on the frozen riverbed because low pool will be 2055’. The access will be from elevation 2055 to elevation 2053 (it is assumed the riverbed will be frozen, and 15 feet wide. Clean Class V riprap (up to 27 inches in diameter, with a median diameter of 20 inches) will be placed on the riverbed and on any existing ice or in water up to two feet deep. This material will be covered with filter fabric and 3” minus material placed on top for access across the J cove (from station 11 + 40 to station 12 + 80). The material will be removed from the water or ice once the access is no longer necessary, and worked into the armor protection. There, the 3” minus rock will be placed first and the larger stone over that. There are a few large voids where the Class V rock will be suitable very near the J cove.

Wetland boundaries will be delineated and construction fencing installed to prevent any road encroachment in the wetland area. Staging will occur at the terminus of the access road near the top of bank where an existing clearing in vegetation occurs. In order to reduce clearing of riparian vegetation, rock placement will be accomplished from the shoreline instead of top of bank. A temporary haul road will be accessed from the staging area and be aligned near the toe of slope within the exposed shoreline.

Habitat features incorporated into the design will include riparian vegetation planting. Six to 12 inches of topsoil will be placed on top of the revetment on exposed rock above the 2062.5’ high-pool elevation line. Smaller diameter rock will aid in soil retention by reducing interstitial spaces created by larger diameter riprap. Native riparian shrub species will be planted into the soil. Where possible, shrubs will also be planted in the native bank where the plantings do not interfere with recreational purposes. Species to be planted include: scouler willow (*Salix scouleriana*), red-osier dogwood (*Cornus sericea*), nootka rose (*Rosa nutkana*), and Douglas spirea (*Spirea douglasii*). Planting will occur in early spring. The plant material will benefit from spring precipitation as irrigation is not feasible on this site.

Up to approximately 2,800 cubic yards of riprap, plus about 1,200 cubic yards of 3-inch-minus gravel, will be placed largely but not entirely below the ordinary high water mark. Some excavation into the substrate will be necessary, totaling up to about 750 cubic yards of material. This material will be used to bury the toe of the stabilization structure. A total of up to about 0.9 acre of riverbed will be covered by the proposed fill.

No other alternative action was less damaging to the environment than the preferred alternative.

6.0 POTENTIALLY ADVERSE EFFECTS (INDIVIDUALLY OR CUMULATIVELY) ON THE AQUATIC ENVIRONMENT

a. Effects on Physical, Chemical, or Biological Characteristics of the Aquatic Ecosystem

The major impact to the ecosystem will include some riverbed habitat loss, which will occur when the riprap is placed. However, to mitigate this loss, large woody debris will be incorporated into the stabilization structure to enhance fish habitat; also, soil and native plantings will be incorporated into the rocky bank stabilization structure. Furthermore, without bank stabilization, the current erosion problems are expected to continue and could jeopardize not only public property, but also the existing riparian and wetland habitat. Therefore, the benefits of the structure are expected to outweigh the changes to the riverbed during and after construction.

b. Effects on Recreational, Aesthetic, Historical, and Economic Values

There will be some loss of recreational, aesthetic, and economic value to the public and USACE during construction. These impacts will be short-term because the area will return to existing uses after project completion, and construction is to take place during the off-season when the recreation area is closed. Thereafter, the bank stabilization will improve recreational, aesthetic, and economic values by preventing erosion and preserving riparian and wetland habitat.

In accordance with the National Historic Preservation Act (16 USC 470), historic properties have been investigated, and consultation has taken place with the Idaho State Historic Preservation Office (SHPO)/Idaho State Historical Society, which on November 17, 2007, concurred with a “no adverse effect” finding.

c. Findings

There will be only minor, temporary adverse impacts to aquatic ecosystem functions and values.

7.0 ALL APPROPRIATE AND PRACTICABLE MEASURES TO MINIMIZE POTENTIAL HARM TO THE AQUATIC ECOSYSTEM

a. Impact Avoidance Measures

Five project alternatives were evaluated in order to select the best alternative for minimizing cost and impact to the environment. The proposed project action was selected because it will have the least negative impact on the environment and will prevent loss to chronic bank failure of a small wetland area, campsites, and culturally sensitive materials.

b. Impact Minimization Measures

USACE will take all practicable steps during construction of the project to minimize impacts to aquatic and terrestrial resources. Contingencies will be in place if any of the water quality protection measures fail to achieve their intended function. USACE will ensure that impacts to migratory fish and eagles will be avoided or minimized. The minimization measures will be as follows:

- Project design will incorporate habitat improvement into construction, such as planting shrubs and placing root wads and large trees within the riprap to potentially provide habitat for fish;
- A Corps biologist will check for perched bald eagles before construction begins to avoid and minimize disturbance due to operation of large machinery. If an eagle is sighted on a perch in the vicinity, work may be delayed.
- Best management practices (BMPs), such as stormwater runoff prevention, will be used to ensure that no unnecessary damage to the environment occurs; and
- Work will occur only during winter. The work area will be dry, except for one confined corner where rock will need to be individually placed on ice or in shallow water up to two feet deep to create a temporary foundation for equipment to drive on.
- A Corps biologist will periodically check on construction progress to ensure BMPs are in place and environmental impacts are properly avoided and minimized.
- Idaho Dept. of Environmental Quality stipulations will be met as follows:
 - Riparian vegetation planted for this project will be watered until it can survive on its own.
 - [The project design has ensured that] riprap will be minimized in all locations as much as possible.
- U.S. Fish and Wildlife Service (USFWS) recommendations will be met as follows:
 - Native vegetation at the project site should be retained to the extent possible to avoid or minimize degradation of fish and wildlife habitat.
 - If removal of native vegetation is unavoidable, and to avoid or minimize impacts to nesting avian species protected under the Migratory Bird Treaty Act, removal of vegetation should occur outside typical nesting season, typically April through July each year.
 - To provide habitat for wildlife, including migratory birds, and to reduce sediment delivery to the aquatic ecosystem originating from disturbed sites (e.g., project footprint, access roads and equipment staging areas), the proponent should plant trees, shrubs, grasses and forbs that are native to the project site. The revegetation effort should be designed [to] meet an 80% survival criterion after five years, and should also include a contingency plan in case of plant failure. A list of plants used in the revegetation effort should be submitted to the Service within one year after completion of work.
 - To ensure the success of the revegetation effort, the proponent should monitor the restoration site for a minimum of five years. After three years a status report should be submitted to the Service indicating plant survival.
 - If livestock are present in the work area, the project area should be fenced to prevent trampling and subsequent loss of vegetation and degradation of fish and wildlife habitat. (Note that per 36 CFR 327.11, livestock are not permitted in the recreation area, so this measure will not be necessary.)

c. Compensatory Mitigation Measures

Although the project will result in the loss of approximately 0.9 acres of mudflat habitat, no direct mitigation measures are planned other than incorporating large woody debris as well as soil and native plantings into the stabilization to enhance fish habitat. However, the stabilization structure is expected to provide long-term benefits by preserving valuable

riparian and wetland habitat at the recreation area.

d. Findings

USACE has determined that all appropriate and practicable measures have been taken to minimize potential harm to the environment.

8.0 OTHER FACTORS IN THE PUBLIC INTEREST

a. Fish and Wildlife

USACE has coordinated construction activities with local Native American Tribes and state and Federal resource agencies to ensure that only minimal impacts to fish and wildlife resources will occur. The project will take place during the winter when the project area is dry to avoid impacts to fish, and large woody debris will be placed within the stabilization structure to enhance fish habitat upon project completion. A Corps biologist will check for perched bald eagles before construction begins to avoid and minimize disturbance due to large machinery. Work may be delayed if it appears that there will be a disturbance to eagles. USACE has submitted a Biological Evaluation to the U.S. Fish and Wildlife Service for their review of this project. The USFWS has concurred with a finding of not likely to adversely affect threatened bull trout, as of January 24, 2008. See recommendations above under 7.b.

b. Water Quality. USACE concluded that this project will not violate state water quality standards and has received a waiver under Sec. 401 of the Clean Water Act from the Idaho Department of Environmental Quality, as of 31 January 2008. See stipulations above under 7.b.

c. Historical and Cultural Resources

See 6.b. above.

e. Environmental Benefits.

This project will help preserve existing wetland habitat.

9. Conclusions. USACE finds that this project is within the public's interest and complies with the substantive elements of Section 404 of the Clean Water Act and the Rivers and Harbors Act.

Attachment A

Clean Water Act 404(b)(1) Evaluation [40 CFR §230] Permit Application Evaluation [33 CFR §320.4]

404(b)(1) Evaluation [40 CFR §230]

Potential Impacts on Physical and Chemical Characteristics [Subpart C]:

1. Substrate [230.20]

The placement of riprap along the shoreline will bury some of the existing lake-bed substrate; however, the work will be mostly conducted during the dry period and thus is not expected to disturb any bottom dwelling organisms.

2. Suspended particulates/turbidity [230.21]

Little or no turbidity is expected during construction since the work will occur during the winter months when the project area will be dry due to the low lake level. Any in-water work that may occur will involve individually placed rocks with no uncontrolled dumping. Best management practices (BMPs) will be in place during construction to minimize any potential turbidity issues. There should be minimal residual sediment that could be suspended at a later date, since the riprap rocks placed will be quite large (approximately three feet in diameter) and filter fabric will be used to minimize the amount of fine particles that enter the lake.

3. Water [230.22]

The project is not expected to add any nutrients to the water that could affect the clarity, color, odor, or aesthetic value of the water, or that could reduce the suitability of the Pend Oreille River for aquatic organisms or recreation. Instead, coniferous large woody debris, which is resistant to breakdown (and therefore has low biochemical oxygen demand), will be placed to enhance fish habitat.

4. Current patterns and water circulation [230.23]

USACE expects no disruption of current patterns or water circulation at this site during or after construction.

5. Normal water fluctuations [230.24].

Since the water levels in Lake Pend Oreille and the upper Pend Oreille River are controlled by operation of the Albeni Falls Dam, the bank stabilization structure is not expected to have any effect on normal water fluctuations.

6. Salinity gradients [230.25]

Not applicable, since the Pend Oreille River is freshwater.

Potential Impacts on Biological Characteristics of the Aquatic Ecosystem [Subpart D]:

1. Threatened and endangered species [230.30]

USACE has prepared a Biological Evaluation for this project. As of January 24, 2008, the USFWS concurred with the USACE's assessment that the project is not likely to adversely affect threatened bull trout. See recommendations above under 7.b.

- 2. Fish, crustaceans, mollusks and other aquatic organisms in the food web [230.31]**

There will be no immediate impacts to fish since there will be little or no in-water work for this project. Following construction there will be a loss of shallow water habitat during summer pool elevation, since former muddy substrate will now be covered with riprap. However, to mitigate this loss, large woody debris will be placed as part of the project design to enhance fish habitat.
- 3. Other wildlife [230.32]**

Birds and other wildlife may be temporarily displaced during construction due to noise, construction vehicles, and riprap placement. Because these impacts will only occur during the three weeks of construction, they are expected to be inconsequential and temporary. Disturbance to bald eagles will be avoided, through delay of machinery use if necessary when any bald eagles are spotted in the project vicinity on perches. The stabilized bank will also help retain potential eagle perch trees and other vegetation that may have otherwise continued to fall or erode into the river.

Potential Impacts on Special Aquatic Sites [Subpart E]:

- 1. Sanctuaries and refuges [230.40]**

Not applicable, since the Pend Oreille River is not designated by local, state or federal regulations to be managed principally for the preservation and use of fish and wildlife resources.
- 2. Wetlands [230.41]**

A field inspection of the bank stabilization project area determined that no impact to the palustrine, emergent wetlands will occur because these are located above the height of the proposed stabilization structure. These wetlands will actually be preserved by the bank stabilization rather than decrease due to erosion. The riverbed that is classified as lacustrine, permanently flooded wetland is discussed below, and described as mudflat habitat.
- 3. Mud flats [230.42]**

Approximately 0.9 acres of mudflat habitat will be lost when the stabilization structure is built, assuming the structure is approximately 20 feet wide and 1,600 feet long.
- 4. Vegetated shallows [230.43]**

There will be little or no loss of vegetated shallows when the stabilization structure is built. The benefits from preventing the long-term erosion loss of existing riparian, wetland, and understory habitat are considered to outweigh the loss of the vegetated shallows.
- 5. Coral reefs [230.44]**

Not applicable.
- 6. Riffle and pool complexes [230.45]**

Not applicable, since riffle and pool complexes are characteristics of streams.

Potential Effects on Human Use Characteristics [Subpart F]:

- 1. Municipal and private water supplies [230.50]**

The project will protect water supply and other utilities at the recreation area from the effects of long-term erosion.
- 2. Recreational and commercial fisheries [230.51]**

With the intended mitigation measures, the project work will have little or no effect on any recreational fisheries. There are no known commercial fisheries at or near the project area.

3. Water-related recreation [230.53]

Because the work will be conducted during the winter when water sport activities are usually minimal, the project is not expected to affect water-related recreation. Long-term maintenance of boating access at the recreation area will be preserved, and the negative effects of this activity will be greatly diminished because erosion from boat wakes will be stemmed.

4. Aesthetics [230.53]

During construction there will be some minor disturbance from heavy equipment noise and exhaust. After construction the shoreline will look different because the riprap bank stabilization structure will have replaced fallen trees. The new structure will look less natural initially, but in time should develop foliage that will allow it to blend in more easily with the surroundings. In addition, the structure will prevent further loss of trees and will ensure the stability of the existing habitat.

5. Parks, national and historic monuments, national seashores, wilderness areas, research sites and similar preserves [230.54]

The stabilization work is expected to benefit the historic properties on the site by preventing further erosion or catastrophic bank failure that could degrade them.

Evaluation and Testing [Subpart G]:

1. General evaluation of dredged or fill material [230.60]

Bank stabilization material will consist of class III riprap, 3-inch minus crushed stone, and granular fill. All imported material will be free from contamination and obtained from a permitted local quarry.

2. Chemical, biological, and physical evaluation and testing [230.61]

NA

Actions to Minimize Adverse Effects [Subpart H]:

1. Actions concerning the location of the discharge [230.70]

Since USACE is not selecting a disposal site, but rather is building a riprap stabilization structure, the actions that will be taken are necessary for the location.

2. Actions concerning the material to be discharged [230.71]

Bank stabilization material will be required to meet USACE standards for placement of riprap.

3. Actions controlling the material after discharge [230.72]

No actions should be required, as the structure is not expected to move after construction; however, should any structural deterioration occur, it should be evident to Corps park rangers on site, and will be addressed as necessary.

4. Actions affecting the method of dispersion [230.73]

As described above, the structure is expected to be stable after construction and not disperse. Project drawings that show the design of the structure are included in the Environmental Assessment for the project.

5. Actions related to technology [230.74]

No specific advanced technologies will be used to build the stabilization structure.

6. Actions affecting plant and animal populations [230.75]

USACE has coordinated construction activities with local Native American Tribes and state and Federal resource agencies to ensure that minimal impacts to fishery and wildlife resources will occur. The project will take place during the winter when the project area is dry to avoid impacts to fish, and large woody debris will be placed within the stabilization structure to enhance fish habitat upon project completion. A Corps biologist will check for perched bald eagles before construction begins to avoid and minimize disturbance due to large machinery. Work will be delayed if it appears that there will be a disturbance to eagles. Native riparian vegetation will be planted, irrigated and monitored for survival and success.

7. Actions affecting human use [230.76]

The construction of the stabilization structure is not expected to diminish water quality or any other aesthetically pleasing feature of the aquatic site. Instead, the structure will prevent erosion of the shoreline and allow humans to continue to use the site for light recreation.

8. Other actions [230.77]

Best management practices (such as dust suppression measures) will be used to ensure that no unnecessary damage to the environment occurs during construction.

General Policies for Evaluating Permit Applications [33 CFR §320.4]

1. Public Interest Review [320.4(a)]

USACE finds this bank stabilization action to be in compliance with the 404(b)(1) guidelines and not contrary to public interest.

2. Effects on wetlands [320.4(b)]

See 404(b)(1) evaluation above. Some impacts to riverbed wetlands are expected. Project design has been done with the intent of minimizing this impact.

3. Fish and wildlife [320.4(c)]

USACE consulted extensively with state and federal resource agencies, tribes and other interested members of the public on this action. Impacts will be minimized and mitigated—see 17 below

4. Water quality [320.4(d)]

USACE certifies that this project will not violate water quality standards as set forth by the Clean Water Act and has received a 401 Water Quality Certification waiver from the Idaho Department of Environmental Quality, dated January 31, 2008.

5. Historic, cultural, scenic, and recreational values [320.4(e)]

No permit application is necessary for these values, but concurrence on a “no adverse effect” finding from the Idaho SHPO, dated November 17, 2007, has been provided concerning effects on historic properties.

6. Effects on limits of the Territorial Sea [320.4(f)]

Not applicable, since the project will not occur in coastal waters.

7. Consideration of property ownership [320.4(g)]

The property belongs to the Corps of Engineers. Access for construction equipment and materials will be via public rights of way.

8. Activities affecting coastal zones [320.4(h)]

Not applicable, since the project will not occur in coastal waters; Bonner County is not a coastal county as defined under the Coastal Zone Management Act.

9. Activities in marine sanctuaries [320.4(i)]

Not applicable, since the area is not a marine sanctuary.

10. Other federal, state, or local requirements [320.4(j)]

As of January 24, 2008, the U.S. Fish and Wildlife Service has concurred with the USACE's findings of the Biological Evaluation for the site, that the project is not likely to adversely affect threatened bull trout. The USACE has also received a waiver under Sec. 401 of the Clean Water Act from the Idaho Department of Environmental Quality, dated 31 January 2008. No other certifications are required.

11. Safety of impoundment structures [320.4(k)]

Not applicable, since an impoundment structure is not being built.

12. Water supply and conservation [320.4(m)]

The action will protect the recreation area's water supply. No permit is needed concerning water supply.

13. Energy conservation and development [320.4(n)]

Not applicable.

14. Navigation [320.4(o)]

Work will be done above the water line. Recreational boat access to the project site will be preserved as part of the project design. No other navigational effects are anticipated.

15. Environmental benefits [320.4(p)]

This project will prevent erosion of public property and help preserve existing riparian and wetland habitat. See the Environmental Assessment/Biological Evaluation, and the CWA 404(b)(1) evaluation (above) for support for the project.

16. Economics [320.4(q)]

Completion of the project will enable the recreation area to remain operational and to continue serving the local and regional public.

17. Mitigation [320.4(r)].

The following measures will be taken to minimize and mitigate for impacts from the project:

- Project design will incorporate habitat improvement into construction, such as planting shrubs and placing root wads and large logs within the riprap to potentially provide habitat for fish;
- A Corps biologist will check for perched bald eagles before construction begins to avoid and minimize disturbance due to operation of large machinery;
- Best management practices (BMPs), such as stormwater runoff prevention, will be used to ensure that no unnecessary damage to the environment occurs; and
- Work will occur only during winter. The work area will be dry, except for one confined corner where rock will need to be individually placed on ice or in shallow water up to two feet deep to create a temporary foundation for equipment to drive on.
- A Corps biologist will periodically check on construction progress to ensure BMPs are in place and environmental impacts are properly avoided and minimized.
- Idaho Dept. of Environmental Quality stipulations will be met as follows:
 - Riparian vegetation planted for this project will be watered until it can survive on its own.
 - [The project design has ensured that] riprap will be minimized in all locations as much as possible.

- U.S. Fish and Wildlife Service (USFWS) recommendations will be met as follows:
 - Native vegetation at the project site should be retained to the extent possible to avoid or minimize degradation of fish and wildlife habitat.
 - If removal of native vegetation is unavoidable, and to avoid or minimize impacts to nesting avian species protected under the Migratory Bird Treaty Act, removal of vegetation should occur outside typical nesting season, typically April through July each year.
 - To provide habitat for wildlife, including migratory birds, and to reduce sediment delivery to the aquatic ecosystem originating from disturbed sites (e.g., project footprint, access roads and equipment staging areas), the proponent should plant trees, shrubs, grasses and forbs that are native to the project site. The revegetation effort should be designed [to] meet an 80% survival criterion after five years, and should also include a contingency plan in case of plant failure. A list of plants used in the revegetation effort should be submitted to the Service within one year after completion of work.
 - To ensure the success of the revegetation effort, the proponent should monitor the restoration site for a minimum of five years. After three years a status report should be submitted to the Service indicating plant survival.
 - If livestock are present in the work area, the project area should be fenced to prevent trampling and subsequent loss of vegetation and degradation of fish and wildlife habitat. (Note that per 36 CFR 327.11, livestock are not permitted in the recreation area, so this measure will not be necessary.)