



Draft Environmental Assessment

Lemhi County Howarth Multihazard Mitigation Project

Lemhi County, Idaho

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APE	Area of Potential Effects
BA	Biological Assessment
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
B.P.	Before Present
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
cm	centimeter
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
FONSI	Finding of No Significant Impact
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
OHWM	ordinary high water mark
SHPO	State Historic Preservation Office
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

Alluvium: rock debris that has been eroded into fine sediments that are subsequently transported by a stream.

Area of Potential Effects (APE): the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking.

Best Management Practices (BMPs): environmental protective measures for conducting projects in an environmentally responsible manner.

Lacustrine deposits: sediments deposited by lakes.

Loam: well-drained soils composed of sand, silt, and clay in relatively even proportions.

Ordinary high water mark (OHWM): the point on a bank or shore up to which the presence and action of the water leaves a distinct mark by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic.

SECTION ONE INTRODUCTION

Lemhi County, through the Idaho Department of Homeland Security, applied for fiscal year 2009 funding under the Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance (FMA) grant program for a flood/ice scour mitigation project in eastern Idaho. The objective of the FMA grant program is to reduce or eliminate claims under the National Flood Insurance Program (NFIP). The FMA was created as part of the National Flood Insurance Reform Act of 1994 (42 U.S.C. 4101). FEMA provides FMA funds to assist States and communities with implementing measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the NFIP. The mitigation project involves a private residence (Ms. Fredde Howarth) along the banks of the main stem Salmon River that was constructed in 1995 (Appendix A, Figure 1).

This draft Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and FEMA's regulations implementing NEPA (44 CFR Part 10). FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this draft EA is to analyze the potential environmental impacts of the Lemhi County Howarth Multihazard Mitigation Project. FEMA will use the findings in this draft EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). Much of the information about the project in this EA comes from the FMA grant application package.

SECTION TWO PURPOSE AND NEED

The project area is located in eastern Idaho in rural Lemhi County, approximately 6 miles north of the City of Salmon (Appendix A, Figure 1). The Salmon River, which is adjacent to the project area, is a large eroding river system, and its banks have been greatly modified by conversion to cropland, development, and the construction of numerous levees and irrigation diversions. Sparse native riparian vegetation exists along the shoreline in the form of cottonwood trees, grass, and a few shrubs. Agricultural and residential practices have resulted in the loss of much of the riparian buffer along the river. Many of the remaining cottonwoods directly above the ordinary high water mark (OHWM) have been, and continue to be, undermined by seasonal high water. In these areas, soils are loose and eroding severely.

During cold temperatures, the Salmon River is subject to large ice accumulations in the river channel. These ice flows often heave above the OHWM and are capable of eroding and scouring the upper river bank. Ice jams are not an annual event, but they have taken place 3 out of the past 5 years including January 2010. The geomorphologic impacts from these ice flows can result in damage to riparian vegetation, erosion, and ultimately bank failure.

Seasonal high water occurs annually in the spring and early summer due to snow melt runoff. Severe erosion from ice and high water has reduced the riverbank in front of the house to the extent that the deck adjacent to the house is being undermined. Due to erosion, no setback exists between the home and the top of the bank. This slope is unstable and continues to erode toward the foundation. Ms. Howarth provided an estimate that about 485 cubic yards of bank has eroded along the project area (Wade 2011).

Additionally, access to the property's lower pasture is located south of the residence, along the only route to the southern half of the property. This roadbed lies in a narrow corridor between Diamond Creek Road and the Salmon River. The pasture access road is downslope of the county road on a steep gradient. The bank has eroded within 1 foot of this private road and gate post. Within the past year, enough of this bank has eroded from ice scour and flooding to prevent the gate from functioning properly, and support posts have been lost due to this erosion. Further erosion at this site would prevent access to the lower pasture and move the riverbank within the established right of way for Diamond Creek Road, a critical access for homeowners to the north.

The purpose of this project is to mitigate bank erosion in the project area. The need for this action, as discussed in the above background, is to reduce further erosion and scour of the Salmon River bank along the Howarth residence and along Diamond Creek Road, a paved Lemhi County road that provides access for approximately 14 residences.

SECTION THREE ALTERNATIVES

This section discusses the No Action Alternative, the Proposed Action, to which FEMA funding would contribute, and other alternatives that were considered and dismissed.

3.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, FEMA would not provide funding to prevent further erosion of the bank near the Howarth property and Diamond Creek Road. People and nearby structures would continue to be at risk from flooding, erosion, and ice scour events. Continued erosion would eliminate access to the lower portion of the Howarth property, and the river would eventually undermine and flood Diamond Creek Road, a critical access for homeowners north of the project area. This alternative would not meet the project purpose and need.

3.2 PROPOSED ACTION

The Proposed Action would stabilize two main areas totaling about 370 linear feet along the riverbank with rock fill and large woody debris, coupled with native plantings. Fill would be placed both above and below the OHWM of the Salmon River (Appendix A, Figure 2). As work would be done during the low-flow period of the river, in-water work is not anticipated. The areas targeted for bank stabilization include the area adjacent to the Howarth residence (referred to as “Section A”), and areas south of the residence near Diamond Creek Road (referred to as “Section B”) (Appendix A, Figure 3a). Mechanized equipment proposed to be used includes large excavators, bulldozers, dump trucks, and Bobcats. All work would be conducted from the top of the bank and would be performed by private contractors. Ground disturbance would include trenching for placement of two to three large woody root wads (approximately 10 feet by 5 feet each), and disturbance associated with the use of heavy equipment.

Within Section A, approximately 112 linear feet of armoring consisting of approximately 500 cubic yards of rock fill and native vegetation would be planted adjacent to and within two feet of the residence’s back deck. Due to the steepness of the slope in this area, angular rock fill would be of large diameter (1 to 3 feet) to prevent vertical sloughing. Rocks would be placed approximately 1 to 2 feet deep to sufficiently cover exposed soils and to securely anchor the rocks together. The rock riprap would be tied to the toe of the slope to prevent scour by increasing the volume of material in the toe section.

Section B would use the same method of construction and approximately 1,600 cubic yards of rock fill, large woody debris, and native vegetation would be trucked in (approximately 160 truck loads) and installed along about 255 linear feet of bank. New armoring would be anchored into the existing riprap sections.

In both sections, banks would be reshaped and slopes regraded to reduce the bank slope angle (2:1) without a marked change to the location of the toe of slope. This would reduce erosion potential and provide more favorable planting surfaces. Vegetative plantings would be incorporated into the rock riprap to protect them until established. Native trees and shrubs would be planted primarily along the upper portion of the bank to protect them from erosion, water flow, and ice scouring. Native grasses would be planted along areas of exposed soil above the rock riprap.

The project would be conducted during the recommend Idaho Department of Fish and Game (IDFG) work window of July 1 to August 15 or immediately after a qualified fish biologist with the IDFG has surveyed the project area for fish species of concern (see Section 4.3). All work would be completed during times of low water.

3.3 ALTERNATIVES CONSIDERED AND DISMISSED

Relocating the home to another location on the property was considered; however, because the entire Howarth property is in the floodplain the home would remain in the floodplain after relocation. Relocating the home would not prevent the erosion occurring at the south end of the property where Diamond Creek Road is threatened.

Elevating the home would not solve the problem because erosion would continue to undermine the home and foundation.

An in-stream diversion to decrease stream gradient, dissipate stream energy and redirect stream flow was considered. The diversion would consist of a barb or drop structure comprised of rocks, boulders and/or large logs placed within the river channel. These flow deflection structures extend outward from the bank and force water velocity into the stream, instead of into the banks. This alternative was dismissed as it would require extensive in-stream disturbance and would not address the impacts of winter ice flows.

Bioengineered stabilization with natural materials (trees, root wads) was also considered. The use of natural materials or bioengineered bank stabilization structures reduces bank erosion without interfering with channel forming processes. This alternative was dismissed because it may be less effective within a larger river system such as the Salmon River, it would not address the impacts of winter ice flows, and it was considered cost prohibitive without strong indicators for long term success.

SECTION FOUR AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

This section discusses the affected environment by resource, and the potential effects of the No Action Alternative and the Proposed Action.

For each resource category, the impact analysis follows the same general approach. When possible, quantitative information is provided to establish impacts. Qualitatively, these impacts will be measured based on the criteria below.

Impact Scale	Criteria
None/Negligible	The resource area would not be affected, or changes would be either non-detectable or if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, although the changes would be small and localized. Impacts would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
Moderate	Changes to the resource would be measurable and have both localized and regional scale impacts. Impacts would be within or below regulatory standards, but historical conditions are being altered on a short-term basis. Mitigation measures would be necessary and the measures would reduce any potential adverse effects.
Major	Changes would be readily measurable and would have substantial consequences on a local and regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

Impacts are predicted based on the degree of change or loss of the resource from the baseline conditions. Impacts may be direct or indirect. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by the action and occur later in time or are farther removed from the area, but are still reasonably foreseeable (40 CFR Part 1508). Cumulative impacts are discussed in Section 4.6.

4.1 PHYSICAL RESOURCES

4.1.1 Geology and Soils

Much of Lemhi County is underlain by Mesoproterozoic strata of the Belt Supergroup, deposited between 1470 and 1370 years ago. These rocks include the Yellowjacket Formation, Lemhi Group, and Swauger and Gunsight Formations, and make up most of the northern Lemhi and Beaverhead Ranges and the Salmon River Mountains. A major thrust fault, the Brushy Gulch thrust, is exposed northwest of Salmon, Idaho (Link 2002).

Soils in the project area are predominantly alluvium, overlaying lacustrine deposits. This type of soil is vulnerable to accelerated erosion caused by disturbance of natural conditions through flooding and scour. A combination of wind and water typically present the greatest source of erosion in the project area. The soil in the project area is Bursteadt-Tohobit complex, a moderately well-drained sandy loam (USDA 2010).

The Farmland Protection Policy Act (FPPA, 7 U.S. Code 4201 et seq.) requires that Federal agencies minimize the extent to which their programs contribute to the unnecessary conversion of prime farmland, unique farmland, and land of statewide or local importance to non-agricultural uses. There are no prime and unique farmlands designated within the project area.

4.1.2 Climate Change

The CEQ has recently released guidance on how Federal agencies should consider climate change in their action decision-making. The suggested threshold whereby quantitative analysis should be done in NEPA documents is for an action to release over 25,000 metric tons of greenhouse gases per year (CEQ 2010). Given the nature and small scale of the Proposed Action, and its lack of greenhouse gas releases, no detailed analysis was completed because it would not meet the above threshold.

Generally, the climate in Lemhi County can be described as hot, dry summers with cold, snowy winters. The average annual precipitation is 10 inches of rainfall and 26 inches of snowfall. Temperatures range from highs in the 80s in the summer to the 30s in winter, and lows of 50s in the summer to the teens for the winter (WRCC 2010).

Global and regional climate change is expected to accelerate in the coming decades. Temperatures in Idaho could increase by 4 to 8°F by 2100. Precipitation changes may include an increased variability in precipitation and more frequent summer droughts (Von Waldern 2007).

4.1.3 Consequences of Alternatives

No Action Alternative

Under the No Action Alternative, FEMA would not provide funding to stabilize the river bank near the Howarth residence or Diamond Creek Road. Installation of levees and irrigation diversion structures along the river have modified natural fluvial geomorphologic processes, including channel migration. In addition, maintenance of the existing irrigation water Point of Diversion is common during the growing season and involves the use of heavy equipment in the river to modify the channel to ensure sufficient flows into the diversion structure. Erosion and the loss of soil in the project area would be anticipated associated with further ice scour and flooding. The adverse impact would range from minor to major, depending on the amount of ice scour and flooding. Given the nature of the problem, localized bank erosion, the No Action Alternative is not expected to affect climate conditions.

Proposed Action

Natural fluvial geomorphologic processes (including channel migration) would be further modified due to installation of riprap. Ongoing seasonal maintenance of the irrigation water Point of Diversion would continue to contribute accelerated water flow towards the property. Adverse impacts would likely be minor.

Construction. There would be minor adverse impacts to soils in the project area due to limited ground disturbance and use of heavy equipment. Very little native vegetation would be removed for this project, and no woody plants would be removed. Trenching along the bank would occur to install two to three large woody stems (approximately 10 feet by 5 feet wide). Project design features such as bank reshaping and grading to reduce the bank slope angle would reduce future erosion of soils. Replanting vegetation in areas of exposed soil would anchor the soil. Direct,

indirect, and cumulative effects to soil productivity, stability, or infiltration capacity would be at or below the level of detection. Adherence to Best Management Practices (BMPs) and applicable permit conditions during construction, including installation of temporary erosion control measures such as sediment curtains, along with work timing; will minimize potential adverse effect from soil erosion. There would be no impacts to prime and unique farmlands, as there are none in the project area.

Given the nature and small scale of the proposed action, and its lack of greenhouse gas releases; no detailed analysis has been completed and no impact to climate change would be anticipated.

4.2 WATER RESOURCES

4.2.1 Surface Water

The project area is adjacent to the main stem of the Salmon River, a Water of the United States. At this stretch, the Salmon River is characterized as a broad river with short, narrow banks. It originates in the Sawtooth and Lemhi Valleys of central and eastern Idaho, and snows from the Sawtooth and Salmon River Mountains in the south and the Clearwater and Bitterroot Mountains in the north feed the river (USFWS 2010a). The average annual discharge from the past 20 years at the Salmon, Idaho, station (the closest station to the project area, approximately 6 miles downstream) ranges from a low of 1,024 cubic feet per second (cfs) in 1994 to a high of 2,550 cfs in 1996. The highest discharge in January 2010 during the ice flow damage event was 1,180 cfs (USGS 2010). Seasonal high water occurs annually in the spring and early summer due to snow melt runoff. Historical records for river/stream flooding indicate that flooding occurs every 5 to 25 years within Lemhi County (Lemhi County 2008).

The floodplain and banks along this stretch of the Salmon River have been modified considerably over time by conversion to cropland, including the Howarth property. It has also been common practice in Lemhi County to armor river and stream banks with small diameter, angular rock riprap to stabilize banks. While less expensive, this practice goes against current recommended guidance (Aspect 2009). Installation of levees and irrigation diversion structures along the river have also modified natural fluvial geomorphologic processes, including channel migration.

The Howarth property is located along the outside curve of a western meander of the river. An existing irrigation water Point of Diversion, directly upriver on the opposite bank from the Howarth residence, is likely contributing to accelerated water flow towards the property (Aspect 2009). Maintenance of this diversion is common during the growing season and involves the use of heavy equipment in the river to modify the channel to ensure sufficient flows into the diversion structure.

During the winter, large ice accumulations build up on the Salmon River, scouring the banks near the project area. Ice jams are not an annual event, but they have taken place 3 out of the past 5 years including January 2010. These ice flows often heave above the OHWM. Severe erosion from ice flows and floodwaters have reduced the riverbank directly in front of the Howarth residence (Appendix A, Figure 3b).

4.2.2 Water Quality

Section 303(d) of the Clean Water Act establishes requirements for States and Tribes to identify and prioritize water bodies that do not meet water quality standards. The Salmon River from Carmen Creek to the North Fork Salmon River, including the project area, is listed as impaired for fish, shellfish, and wildlife protection/ propagation by the U.S. Environmental Protection Agency (EPA 2008). Probable sources contributing to the impairment have not been reported. Sedimentation, runoff and erosion are factors that may cause poor water quality in the project area (Aspect 2009).

4.2.3 Wetlands

Executive Order (EO) 11990, Protection of Wetlands, requires Federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

The National Wetland Inventory does not show any wetlands in the project area (USFWS 2010b). The banks of the Salmon River in the project area are too steep in most areas for wetland conditions to develop. However, in a few areas, where the banks are less steep, very narrow wetlands may have developed below the OHWM of the river.

4.2.4 Floodplains

EO 11988, Floodplain Management, 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. Furthermore, Lemhi County regulates its floodplain through its NFIP floodplain ordinance. According to the Flood Insurance Rate Map (FIRM) for the project area, Panel 1600920415B, effective 1990, the entire Howarth property is located in Zone A21, an area that may be inundated by a 100-year flood (Appendix A, Figure 4). The FIRM panel does not designate a floodway for the Salmon River at this location. As noted above, the natural floodplain and banks along this stretch of the Salmon River have been modified considerably by conversion to cropland, including the Howarth property. The hillsides surrounding the project area are characterized by semi-arid upland composed of low-elevation shrub communities.

Severe erosion from both flooding and ice scour events have reduced the riverbank directly in front of the Howarth residence. Recent flood events in 2010 flooded the residence crawl space with 3 feet of water. Historical records for river/stream flooding indicate that flooding occurs every 5 to 25 years within the county (Lemhi County 2008).

4.2.5 Consequences of Alternatives

No Action Alternative

No bank armoring would occur. Localized changes to the Salmon River's channel and its floodplains would range from minor to major, depending on the severity of a flood or ice scouring event and subsequent bank erosion. Ongoing maintenance practices for the upstream irrigation diversion would also continue to be a factor in localized bank erosion patterns. Continued erosion could damage the Howarth residence and close Diamond Creek Road, a critical access for homeowners to the north. There would also be no change in flooding

conditions over the existing riverbank, thus the improvements would remain at risk from future events, damage could range from minor to major.

Proposed Action

Construction. Riverbank armoring would be installed, approximately 2,100 cubic yards of rock fill, as described in Section 3.2. Construction equipment would be limited to the top of the bank. Work would occur above and below the OHWM, however in-water work is not proposed (Appendix A, Figure 2). In accordance with Section 404 of the Clean Water Act, Ms. Howarth has received a Nationwide Permit 13 (Bank Stabilization) from the U.S. Army Corps of Engineers (USACE) to place fill in Waters of the U.S., and a stream alteration permit from the Idaho Department of Water Resources (IDWR). A Floodplain Construction Development Permit was approved by the County in January 2011. Idaho Water Quality Certification provisions also apply. Short-term impacts from sedimentation during construction would be minor, as utilizing BMPs per permit conditions, such as silt fencing and other erosion and sedimentation control devices, would minimize release of sediments into the Salmon River. Impacts from work below the OHWM and in the water would be minor, as BMPs would be followed and work would be done during the low-flow period. Refueling and staging areas for construction equipment would be located more than 150 feet from the Salmon River. Native trees and vegetation would be planted along the bank to provide greater long-term stability and reduce sedimentation from flood- and scour-related erosion. Bank stabilization measures listed in the Nationwide Permit, including not impairing surface water flow and placing material in a manner that would not be eroded by normal or expected high flows, would minimize impacts to water resources and floodplains.

Long-Term. Installation of rock riprap and root wads would enhance habitat, increase slope stability and reduce water velocity by creating an irregular shoreline. Long-term adverse impacts to these resources would be minor. Ongoing maintenance practices for the upstream irrigation diversion would also continue to be a factor in localized bank erosion patterns.

Based on Wade's estimated amount of bank that has eroded in the project area (485 cubic yards) and the amount of proposed rock fill (2,100 cubic yards), there is a potential for flood levels to rise as a result of the project's fill. Based on the County's issuance of a Floodplain Construction Permit, the increase in water surface elevation of the base flood level is not expected to cumulatively be more than 1 foot above current levels in the project area when combined with other existing or anticipated floodplain actions in the project vicinity (Wade 2011). Improvements in the project area, including the Howarth residence, would remain at risk from future flood events, and damage could range from minor to major depending on the severity of the flood event.

4.3 BIOLOGICAL RESOURCES

4.3.1 Vegetation

The section of the Salmon River near the project area flows through a broad valley bordered by steep mountain ranges. The valley is characterized by private landholdings associated with residential and agricultural interests. The hillsides surrounding the project area are characterized by semi-arid upland composed of low-elevation shrub communities consisting primarily of

native bunch grasses, sagebrush (*Artemisia* spp.), non-native grasses, and knapweed (*Centaurea* spp.) (Aspect 2009).

In the project area, sparse native riparian vegetation exists along the riverbank in the form of cottonwood (*Populus balsamifera* ssp. *trichocarpa*) trees (less than 10 altogether), grass, and a few shrubs (Appendix A, Figure 3a). Agricultural and residential practices have resulted in the loss of much of the riparian buffer along the river. Many of the remaining cottonwoods directly above the OHWM are being undermined by seasonal high water (Aspect 2009).

4.3.2 Wildlife and Fish

Lemhi County hosts one of the largest fish and wildlife habitats in the State and is home to over 360 species, including 240 different bird species (Lemhi County 2007). The project area is in and adjacent to the OHWM of the Salmon River. The project corridor is developed with residences and farmland, and has little available habitat. Anadromous fish live in this stretch of the Salmon River, which is noted as Essential Fish Habitat for Chinook salmon (*O. tshawytscha*). Fish species listed as federally threatened or endangered are described below. The site is located in the Pacific Flyway, a major migration route for waterfowl in the United States, Canada and Mexico. Migratory birds likely use this stretch of the river and may perch and nest in the cottonwood trees and shrubs that grow along the bank. Opsrey (*Pandion haliaetus*) have been observed approximately 1 mile south of the project site at Morgan Bar Recreation Area.

4.3.3 Threatened and Endangered Species and Critical Habitat

The Endangered Species Act (ESA) was established to conserve, protect, and restore Threatened and Endangered species and their habitats. Section 7 of the ESA (50 CFR 402) requires Federal agencies to ensure their actions do not jeopardize the continued existence of listed species and do not result in adverse modification to designated critical habitat. Analysis is completed through a biological evaluation of the Proposed Action.

The U.S. Fish and Wildlife Service (USFWS) identify four ESA-listed fish species occurring in the portion of the Salmon River within the project area. Three of these species are listed as Threatened: bull trout (*Salvelinus confluentus*), steelhead trout (*Oncorhynchus mykiss*), and spring/summer Chinook salmon. One species is listed as Endangered: sockeye salmon (*O. nerka*). Critical Habitat is designated for steelhead trout, spring/summer Chinook salmon, and sockeye salmon. In addition, one wildlife species is listed as Threatened in Lemhi County: Canada lynx (*Lynx canadensis*).

4.3.3.1 Bull Trout

Bull trout are listed as Threatened under the ESA. Bull trout are native to Washington, Oregon, Idaho, Nevada, Montana, and western Canada. Compared to other salmonids, bull trout have more specific habitat requirements which influence their distribution and abundance. They need cold water to survive and require stable stream channels, clean spawning and rearing gravel, complex and diverse cover, and unblocked migratory corridors (USDI 2011). The Salmon River provides migratory pathways for bull trout (Aspect 2009).

4.3.3.2 Steelhead Trout

Steelhead trout is an ESA-threatened species. Steelhead are a native type of anadromous rainbow trout that are common to the Clearwater, Snake and Salmon rivers in Idaho.

Steelhead spawn in streams from mid-April to late June, using areas of gravel or cobble, depending on the size of the fish. The eggs hatch in early to midsummer. Young fish live in the stream and migrate to the ocean, usually after two years of rearing. The juvenile fish that migrate to the ocean grow rapidly. When they mature and are ready to spawn, the steelhead migrate back to the place they were born. They enter the lower river drainages in the fall (September to October) and winter over to spawn the following spring (IDFG 2011a). The Salmon River is identified as critical habitat for steelhead spawning and rearing.

4.3.3.3 Spring/Summer Chinook Salmon

Spring/summer Chinook salmon are listed as Threatened under the ESA. Snake River spring/summer Chinook salmon historically were found spawning in the Snake River tributaries of the Clearwater, Salmon, Weiser, Payette and Boise rivers. Spring/summer Chinook salmon normally spawn in late July–September using gravel bars in smaller river and tributary streams. As with most salmon, adults die after spawning providing a large nutrient source for juvenile fish. Juvenile spring/summer Chinook salmon behave differently than fall Chinook in that they remain in headwater streams for a year and out-migrate the following spring (IDFG 2005a). Chinook salmon use the Salmon River for migration, spawning, and rearing. All waters that drain into the Salmon River, except for those located above a natural migration barrier, have been designated by NMFS as critical Chinook salmon habitat and Essential Fish Habitat for Chinook salmon (Aspect 2009).

4.3.3.4 Sockeye Salmon

Sockeye salmon are listed as Endangered under the ESA. Snake River sockeye salmon are unique among sockeye, as they travel more than 900 miles and climb more than 6,500 feet in elevation. Anadromous Sockeye salmon are currently found in Idaho's Stanley Basin lakes, which are linked to the Salmon River. The Salmon River is designated critical sockeye salmon habitat as a migration corridor to and from the Stanley Basin (Aspect 2009).

4.3.3.5 Canada Lynx

Canada lynx (*Lynx canadensis*) is an ESA-threatened species. In Idaho, the Canada lynx inhabits montane and subalpine coniferous forests typically above 4,000 feet. Habitat used during foraging is usually early successional forest. Dens are usually in mature forests. Individuals are wide-ranging and require large tracts of forest. The Canada lynx preys on the snowshoe hare, particularly during the winter, as well as variety of birds and other small mammals (IDFG 2005b). Since the project area does not contain coniferous forests, there is a low likelihood of Canada lynx in the area.

4.3.4 Special Status Species

The greater sage-grouse (*Centrocercus urophasianus*), wolverine (*Gulo gulo*), and yellow-billed cuckoo (*Coccyzus americanus*) are listed in Lemhi County as Candidate species under the ESA. Candidate Species are those that have been petitioned and are actively being considered for

listing as Endangered or Threatened under the ESA. Candidate Species are afforded no protection under the ESA.

Data from the Idaho Conservation Data Center (ICDC) was queried for known special-status species in and near the project site (ICDC 2011). ICDC has records of one Idaho State species of special concern within the project vicinity: white sturgeon (*Acipenser transmontanus*).

4.3.4.1 Greater Sage-Grouse

The greater sage-grouse is a large, rounded-winged, ground-dwelling bird found at elevations ranging from 4,000 to over 9,000 feet. They are highly dependent on sagebrush for cover and food. Sagebrush and shrub-steppe habitat are absent in the immediate project area; therefore the greater sage-grouse is unlikely to occur in the project area.

4.3.4.2 Wolverine

Wolverines have been nearly eliminated in the United States and presently can only be found in the northern parts of both hemispheres. In North America, they occupy remote habitats from the high mountainous interior of the Rockies to the arctic coastal tundra and are extensions of Canadian populations. Idaho and Montana are the only states to report known populations of wolverines (IDFG 2011b). Wolverine habitat (mid-elevation conifer forest in the winter and subalpine areas in the summer) is absent from the project area; therefore they are unlikely to occur in the project area.

4.3.4.3 Yellow-Billed Cuckoo

The yellow-billed cuckoo is an ESA candidate species. In Idaho, the yellow-billed cuckoo is considered rare and occurs in scattered drainages primarily in the southern portion of the state (IDFG 2005c). It is a riparian-obligate species requiring large tracts of willow and cottonwoods, which are not present in the immediate project area. Due to lack of appropriate habitat in the project area, they are unlikely to occur.

4.3.4.4 White Sturgeon

The white sturgeon is a protected game species that is currently listed as a State of Idaho species of special concern and documented as critically imperiled in Idaho. White sturgeon are the largest and longest-lived freshwater fish in North America and are known to reside in the Snake and lower Salmon Rivers. White sturgeon normally use areas with a fast current, such as rapids or areas with hard substrates, for spawning, which usually takes place in May and June.

Although there are no barriers on the Salmon River, white sturgeon are rare upstream of the North Fork Salmon River confluence (IDFG 2008). The smaller size of white sturgeon captured in the Salmon River indicates that spawning is either minimal or does not occur in the Salmon River, and may suggest that these fish are a migrant component of the mid-sized white sturgeon population found in the Snake River (Everett et al. 2004).

4.3.5 Consequences of Alternatives

No Action Alternative

Under the No Action Alternative, FEMA would not provide funding to armor two sections of the Salmon River near the Howarth property and Diamond Creek Road. Some vegetation would likely be removed by erosion and flooding. Some wildlife habitat could also be removed if riparian vegetation is washed away. The scale of any adverse impacts to vegetation and wildlife resources, including protected species, would be minor.

Proposed Action

Vegetation. Very little native vegetation would be removed for this project, and no woody plants would be removed. Native plantings are incorporated into the design of this project and would result in a net gain of native and riparian buffer vegetation. Vegetative plantings would be incorporated into the rock riprap. In addition, native trees and shrubs would be planted along the upper portion of the bank. Native grasses would also be planted along any areas of exposed soil above the rock riprap. Enhancing the riparian buffer with plantings would also improve the wildlife habitat along the banks of the river. Thus impacts to vegetation from the Proposed Action would be negligible.

Wildlife, Fish and Threatened and Endangered Species. Generally, streams with healthy riparian vegetation communities may be harmed ecologically from the addition of riprap or armoring structures. However, systems with excessive erosion and habitat alteration, like this stretch of the Salmon River, are more likely to benefit ecologically from bank armoring. Stabilizing stream channels with riprap can reduce sediment loads, improve water quality, and allow reestablishment of riparian vegetation (USACE 2003).

As part of Ms. Howarth's USACE and IDWR Joint Application for Permit, a Biological Assessment was prepared per the ESA for the Proposed Action, which determined that the project may affect, but is not likely to adversely affect listed fish species. The USFWS concurred with this determination (Appendix B). The National Marine Fisheries Service (NMFS) was unable to provide concurrence due to the amount of in-water work and initiated formal consultation with the USACE.

A subsequent Biological Opinion (BO) was issued by the NMFS in December 2009. The BO concluded that the action, as proposed, is not likely to jeopardize the continued existence of Snake River spring/summer Chinook salmon and Snake River Basin steelhead, and is not likely to destroy or adversely modify their designated critical habitat (NMFS 2009). This conclusion was based on short-term impacts to water quality through temporary turbidity increases due to construction activities. Fish present near the construction site could flee the area for less turbid locations, and mortality would be unlikely.

Section 9(a)(I) of the ESA prohibits the taking of endangered or threatened species without a specific permit or exemption. An action is considered a taking if it harasses, wounds, or kills an individual of a listed species or harms a species by altering habitat in a way that significantly impacts its essential behavioral patterns (50 CFR 222.102). Along with the BO, NMFS issued an Incidental Take for the project. The extent of the take allowed is considered exceeded if turbidity is observed beyond 600 feet downstream of the project area, or any fish are found dead as a result of project activities.

The Proposed Action may locally improve Critical Habitat for Chinook, sockeye, and steelhead trout by reducing sediment introductions from the chronically eroding stream bank (NMFS 2009). In addition, the Proposed Action may also locally improve Essential Fish Habitat for Chinook salmon.

Populations of ESA-listed salmonids and other aquatic species within this stretch of the Salmon River are already adversely impacted by a number of limiting factors, particularly increased water temperature, poor water quality, and sedimentation (Aspect 2009). Although some adverse impacts may occur due to the limits of BMPs, the Proposed Action would not disturb existing woody vegetation, would include planting additional native trees and shrubs, and in the long-term would stabilize the banks to locally improve overall conditions relative to sedimentation, erosion, and runoff. Therefore while the Proposed Action may locally worsen these key limiting factors during construction, effects to ESA-listed salmonids and other aquatic species would be negligible with conservation and mitigation measure (BMPs) implementation. Adverse impacts to all fish, listed and non-listed, would be minor and stream habitat conditions may slightly improve locally given conservation and mitigation measure incorporated into stabilization design features.

Impacts to non-listed wildlife, including migratory birds, are not anticipated because habitat modification/vegetation removal would not occur. In addition, proposed work would occur after most birds have finished nesting. New habitats for non-listed wildlife and migratory birds would be created in the project area by replanting native vegetation. BMPs are also incorporated into the design and implementation to minimize the impact of the project (see Section Six).

4.4 CULTURAL RESOURCES

Cultural resources consist of locations of human activity, occupation, or use identified through field inventory, historic documentation, or oral evidence. The term encompasses historic properties as defined by the National Register of Historic Places (NRHP), including archaeological and architectural properties, as well as sites or places of traditional cultural or religious importance to Native American Tribes or other social or cultural groups. Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires that activities needing Federal permits or using Federal funds undergo a review process to consider historic properties that are listed in or may be eligible for listing in the NRHP. The State Historic Preservation Office (SHPO) is the Federal agency's primary Section 106 partner. Because Section 106 is a process by which the Federal government assesses the effects of its undertakings on historic properties, it is the primary regulatory framework used in the NEPA process to determine impacts on cultural resources.

In accordance with Section 106, FEMA has delineated that the Area of Potential Effects (APE) for the proposed project (undertaking) consists of approximately 370 linear feet of discontinuous areas along the Salmon riverbank (Appendix A, Figure 1). The APE contains two sections (A and B) proposed for improvement, described in Section Three, Proposed Action. The APE is for both archaeology and above-ground resources. All proposed improvement activities would occur within this APE.

4.4.1 Prehistoric Context

The project area is located in the Eastern Plateau culture area of the Columbia Plateau. Eastern Plateau prehistory (Roll and Hackenberger 1998), specifically the Salmon-Clearwater Region, is divided into three major chronological units that embody broad trends of subsistence and settlement: the Early (10,000 to 7,000 Before Present [B.P.]) and Middle (7,000 to 1,500 B.P.) Prehistory Periods, and the Late (1,500 B.P. to A.D. 1750) Prehistoric Period.

Prehistorically, lithic scatters and associated lithic artifacts are the most common type of site found. These sites can also contain stone tools, projectile points, or solely lithic debitage waste flakes produced during the manufacture or maintenance of stone tools. The evidence left behind in the archaeological context is indicative of specific types of activities or sites. As both the ethnographic and the archaeological record of the region conclude, although dependent on environmental variability, prehistoric lifeways saw a relatively high resource abundance of both vegetative plants and game for subsistence (Plew 2008; Steward 1938).

4.4.2 Ethnographic and Historic Context

The project area is located along the Salmon River near the City of Salmon, Idaho, within the Lemhi Valley. Ethnic groups of the Lemhi Valley and along the Salmon River during the early nineteenth century were comprised initially of the Agaidika, or Salmon Eaters, and the Tukudika, or Sheepeaters, who lived in the surrounding mountains. The two groups subsisting in the Salmon River country participated in organized buffalo hunts across the Bitterroots, traveled to the Camas Prairie near Nez Perce country, and traded with their allies, the Flatheads, to the north (Svingen 2010). The U.S. National Park Service's (2011), Native American Consultation Database lists the following tribes as having ancestral interest in Lemhi County: the Nez Perce Tribe of Idaho, Confederated Salish-Kootenai Tribes, Shoshone-Bannock Tribes, and Shoshone Tribe of the Wind River Reservation.

Euro-American exploration of the region began with the Lewis and Clark Corps of Discovery in 1805. Shortly thereafter, fur traders began to explore the area. Mormon missionaries arrived in the Salmon River Valley in 1855. They established the Fort Lemhi Mission near Tendoy, Idaho, so named for a king "Limhi" cited in the Book of Mormon. The City of Salmon is situated at the fork of the Salmon and Lemhi Rivers and was established in 1867 as a supply center for the Leesburg basin, an area about 14 miles west of Salmon where gold was discovered in 1866 (Idaho GenLab 2010). Intensive gold and lead mining ensued.

General Land Office maps were reviewed to determine if any late-nineteenth or early-twentieth century historic features are present in the project area. The 1892 plat map depicts one wagon road extending north to south along the west side of the Salmon River. The current alignment of Diamond Creek Road appears to generally overlap the historic alignment and falls adjacent to the APE (BLM 2010).

The project area is located along the Salmon River in an area important to ancestral and contemporary tribes who intensively used, and continue to use, this region for travel, resource acquisition, and residential activities. Historic development of the region indicates nineteenth century exploration, fur trading, and gold mining occurred along the Salmon River, and evidence of such activities may exist within the project area. The project area does not appear to have been permanently settled until the early twentieth century. No extant historic properties, with the exception of a possible wagon road, have been previously documented within or adjacent to the

APE based on the background research. No evidence of the wagon road is present on the subject parcel.

4.4.3 Identification of Historic Properties

A review of the confidential archaeological records on file at the Idaho SHPO office in Boise, Idaho, was conducted in November 2010 to determine the presence or absence of previously recorded historic properties and the extent of survey coverage in and near the APE.

4.4.3.1 Above-ground Resources

The results of the record search indicate that 12 cultural resource surveys have been conducted, with one inventory (Petersen 1999) possibly overlapping the APE. At present it is unknown if the survey overlaps the APE as the information received from SHPO only lists tabular data. A total of four resources were identified within 1 mile of the APE: an irrigation feature known as the Sanderson Ditch (10LH1798); a section of the Lewis and Clark Trail (10LH685); the US 93 Highway and Older Alignment (10LH811); and the Carmen Creek Bridge (59-16982). No previously recorded above-ground historic properties were found within the APE. A Metsker map reviewed from 1940 did not reveal the presence of historic-era buildings within the APE (Historic Map Works 2010).

The Fredde Howarth private residence was constructed in 1995. The modest residence is a single-story, wood-frame, ranch dwelling. To the south of the residence is a single-story wood-frame barn, which appears to have been constructed in the past 10 to 15 years, and pasture land. The building does not appear to possess the exceptional importance required for properties less than 50 years of age to be eligible for listing in the NRHP under Criterion Consideration G. The area is sparsely developed with residential properties that post-date 1970. Based on the Bird Creek, Idaho, USGS Quadrangle, dated 1927 and revised in 1996, no buildings are located in the project area, on adjacent parcels, or on the east bank of the Salmon River. Based on this information, there is a low potential for above-ground historic properties in the project area and viewshed.

4.4.3.2 Archaeological Resources

No previously recorded archaeological properties were found within the APE. An intensive cultural resource survey was conducted of the two areas (Section A and B) targeted for stream bank protection for the Howarth residence on October 23, 2010 by an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for the discipline. On average, surface visibility was generally good (50-75 percent) and excellent (100 percent) where the cut bank was exposed. In general, manicured grass surrounded the house and pasture land and exposed soil was visible throughout the remainder of the property.

A single transect spanning 5 meters (16 feet) or less was employed along the riverbank of the project area, which includes approximately 370 linear feet of discontinuous areas along the Salmon riverbank. Within Sections A and B, areas that contain existing rip rap were not inspected sub-surface. The remaining areas yet to be protected were subject to archaeological examination, which included troweling a portion of the exposed bank to a width of 50 centimeters (cm) (19 inches) to an average horizontal depth of 25 cm (9.8 inches), from the top of the bank to as near the base of the bank as possible. Removed sediment was screened through

1/8-inch mesh screen and examined for cultural materials. Shovel testing was not conducted, as this approach provided excellent examination of the bank from the surface to its base, in some areas exceeding 2.0 meters in height. No cultural materials were observed within the bank sediments or along the well-washed cobbles at the base of the bank.

4.4.4 Consequences of Alternatives

No Action Alternative

Under the No Action Alternative, FEMA would not provide funding to reduce erosion of the riverbank. Although no archaeological resources were identified in the APE, there remains a possibility that unidentified subsurface resources are present. If riverbank erosion continues, potential archaeological sites not yet identified could be affected. Adverse impacts would range from negligible to moderate. These resources would continue to be affected by erosion and fluvial inundation in as much as they have been since deposited. Because no Federal activity would occur, Section 106 would not apply.

Proposed Action

Although the above-referenced investigations did not reveal extant archaeological resources within the APE, the project is located along the Salmon River, an area considered to have general archaeological sensitivity, and within a floodplain setting where deeply buried cultural resources could be present. If so, these resources could be exposed by the Proposed Action. Adverse impacts could range from negligible to moderate. In the event of an unanticipated discovery, and in compliance with State and Federal laws protecting cultural resources, including Section 106, all work is required to cease in the immediate vicinity of a find until the appropriate parties (including the SHPO and Tribes) are consulted and an appropriate resolution plan is established. Based upon findings of the cultural resource investigations described above, FEMA has determined that the Proposed Action would have no effect on historic properties.

Consultation with the SHPO has been initiated and concurrence is pending (Appendix B). The cultural resources investigation was also provided to the following tribes to determine if there may be historic properties of religious or cultural interest within or near the APE: the Nez Perce Tribe of Idaho, Confederated Salish-Kootenai Tribes, Shoshone-Bannock Tribes, and Shoshone Tribe of the Wind River Reservation (Appendix B). No tribal responses were received.

4.5 SOCIOECONOMIC RESOURCES

4.5.1 Environmental Justice

EO 12898, Environmental Justice, directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations resulting from Federal programs, policies, and activities. Socioeconomic and demographic data for residents in the project vicinity were studied to determine if the Proposed Action would have disproportionate impacts on minority or low-income persons.

Data from the 2000 Census for Lemhi County was used to identify the minority¹ and low-income² compositions of the project area, which is located in Block Group 3 (in Census Tract 9801). In the project area, the minority population was approximately 5 percent. The poverty rate of the study area population was approximately 15 percent (U.S. Census Bureau 2000). Because these levels are consistent with the County and State as a whole, minority and low-income populations are not considered to be present.

4.5.2 Consequences of Alternatives

No Action Alternative

Under the No Action Alternative, FEMA would not provide funding to reduce ice scour and flood risks to the Howarth property and Diamond Creek Road. There are no minority or low-income populations in the project area; therefore, no disproportionately high and adverse effect would occur.

Proposed Action

The project area was chosen as high-priority for a mitigation project based solely on the need to protect the Howarth residence and Diamond Creek Road; demographics was not a factor in the decision. Furthermore, there are no minority or low-income populations in the project area.

4.6 CUMULATIVE IMPACTS

CEQ regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for Federal projects. Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects were determined by combining the effects of these alternatives with other past, present, and reasonably foreseeable future actions.

At the time the Howarth residence was built in 1995, Lemhi County did not have any setback requirements from the Salmon River. Now, the setback requirement is 50 feet. This increased setback requirement may help reduce future damage from flooding and ice scour events to newly constructed homes in the County.

Channelization and other types of hydrologic modifications, such as similar bank alteration or stream bank alterations, could result in the cumulative loss and degradation of waterways in the watershed. However, bank stabilization reduces sediment loads, improves water quality, and allows reestablishment of riparian vegetation (USACE 2003). The existing condition of the

¹ A minority person is “a person who is: (1) Black (a person having origins in any of the black racial groups of Africa); (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (4) American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).”

² Low-income is identified as “one whose median household income is at or below the Department of Health and Human Services poverty guidelines.” Income data based on Department of Health and Human Services guidelines are difficult to gather, so Census Bureau data are often used for environmental justice analyses.

Affected Environment and Potential Impacts

project area is considerably altered from its natural state by urbanization and agricultural practices. The riverbank associated with the project has been subject to erosion primarily due to flooding, ice scour, and loss of vegetation. Preventing further erosion and incorporating the use of native plants and large woody debris into the project design may decrease cumulative negative impacts to the Salmon River (Aspect 2009).

Potential cumulative effects to wildlife and fish include on- and off-site habitat degradation associated with construction and development of private property, increased sedimentation associated with continued use of the road system, and increased channelization with further development of the river corridor (Aspect 2009; NFMS 2009).

Although there is a potential for floodwater surfaces to increase as a result of the fill action, when combined with other floodplain actions in the project vicinity, the County through issuance of its Floodplain Development Permit has determined that the cumulative rise of the base flood would not exceed one foot.

SECTION FIVE AGENCY COORDINATION AND PUBLIC INVOLVEMENT

During project development, the property owner contacted the following agencies for review and concurrence with the project: IDWR, NMFS, USACE, and USFWS; and the Lemhi County Planning and Zoning Department. During preparation of this EA, the SHPO and the following Tribes were also contacted for comment: Nez Perce, Shoshone-Bannock Tribes, Confederated Salish and Kootenai Tribes, and Shoshone Tribe.

A public notice is required for the draft EA and in response to EO 11988 because of the project's location in the floodplain (Appendix C). The public, Tribes, and agencies will have the opportunity to comment on the EA for 30 days after publication of the notice. The notice identifies the action, location of the proposed site, participants, location of the draft EA, and who to write to provide comments. FEMA will review all substantive written comments for issues that need to be addressed with the County and will incorporate any resolutions into the final EA, as appropriate.

Permitting, Project Conditions, and Mitigation Measures

SECTION SIX PERMITTING, PROJECT CONDITIONS, AND MITIGATION MEASURES

The subapplicant has received a Nationwide Permit from the USACE, permitting from the IDWR, and USFWS concurrence, and a BO with an Incidental Take Statement from NMFS. Activities at the Proposed Action site will comply with the project's permitted scope of work. The project subapplicant will comply with the following project conditions and mitigation measures:

- The County shall ensure its subapplicant obtains all required local, state, and federal permits and approvals prior to implementing the Proposed Action Alternative and comply with any and all terms and conditions imposed.
- The County is responsible for ensuring its subapplicant complies with the January 29, 2010 USACE NWP 13 and March 22, 2010 Idaho Department of Water Resources Stream Alteration Permit; including but not limited to selecting, implementing, monitoring, and maintaining BMPs to control erosion and sediment, reduce spills and pollution, and provide habitat protection.
- During project implementation, the County shall ensure its subapplicant complies with the conservation and reasonable and prudent measures, and terms and conditions outlined in the December 30, 2009 NMFS BO issued to the USACE under its NWP.
- During project implementation, the County shall ensure its subapplicant complies with the conservation measures outlined in the August 1, 2009 Amended BA prepared as part of the USACE NWP.
- In the event that potentially significant cultural resources are discovered during project activities, and in compliance with State and Federal laws protecting cultural resources, including Section 106 of the NHPA, work in the immediate vicinity will cease, the area will be secured, and the SHPO and FEMA will be notified.
- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other laws and EOs, before implementation.

SECTION SEVEN CONCLUSION

The draft EA evaluated environmental and historic resources that could be affected by the Proposed Action. The evaluation did not identify any significant adverse impacts associated with the resources of geology, soils, and climate; water resources, wetlands, and floodplains; wildlife, fish, and vegetation (including ESA-listed species and critical habitat); historic, archaeological, and cultural resources; and socioeconomic and environmental justice. Implementing the Proposed Action, along with any conditions associated with permits or approvals, is expected to avoid or minimize adverse effects associated with the action. Following public involvement, FEMA will determine whether to issue a FONSI for the Proposed Action.

SECTION EIGHT LIST OF PREPARERS

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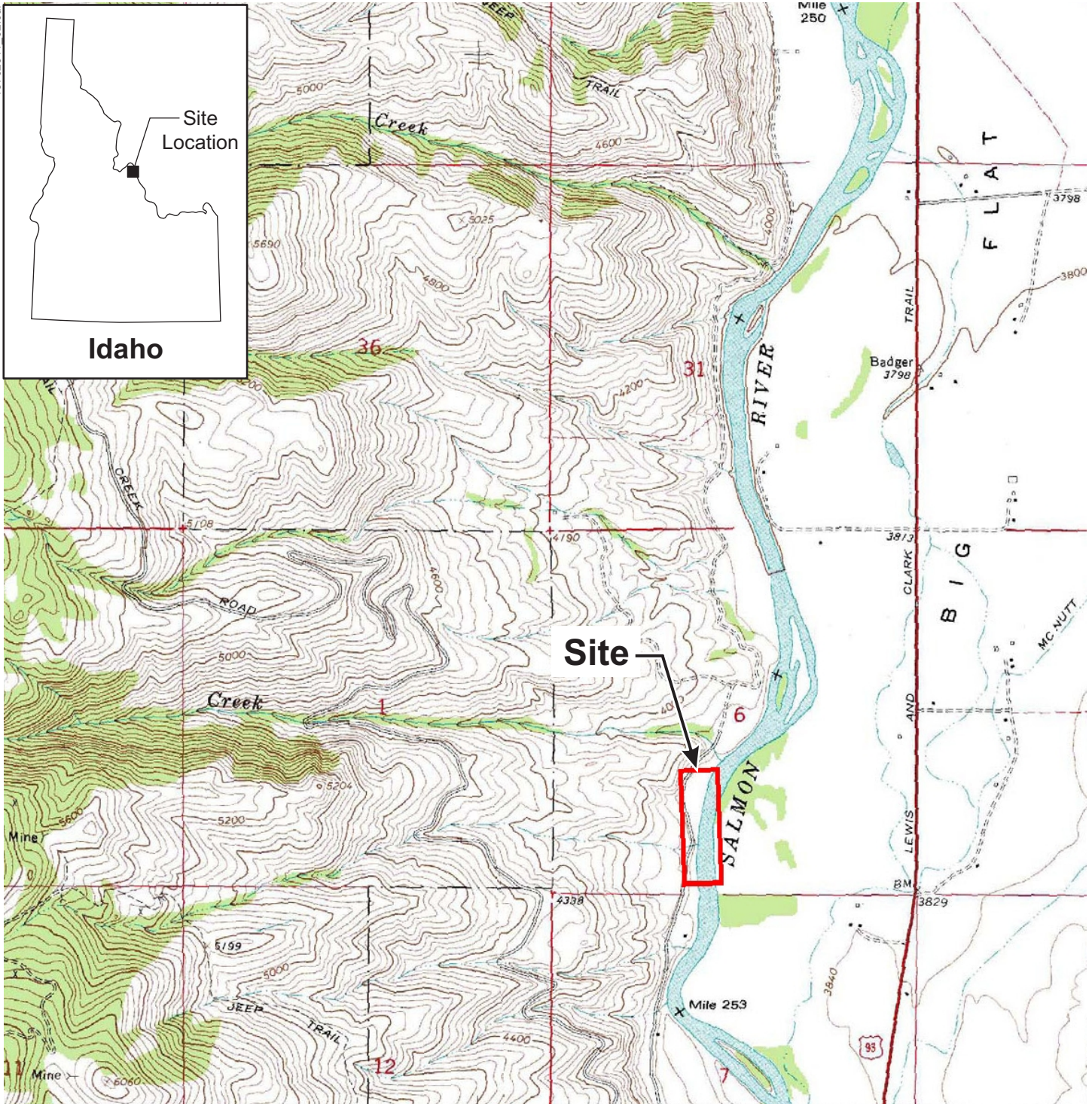
Appendix A
Figures

Figure 1 – Project Vicinity Map

Figure 2 – Cross Sections of Proposed Armoring

Figures 3a and 3b – Site Photographs

Figure 4 – FEMA Flood Insurance Rate Map



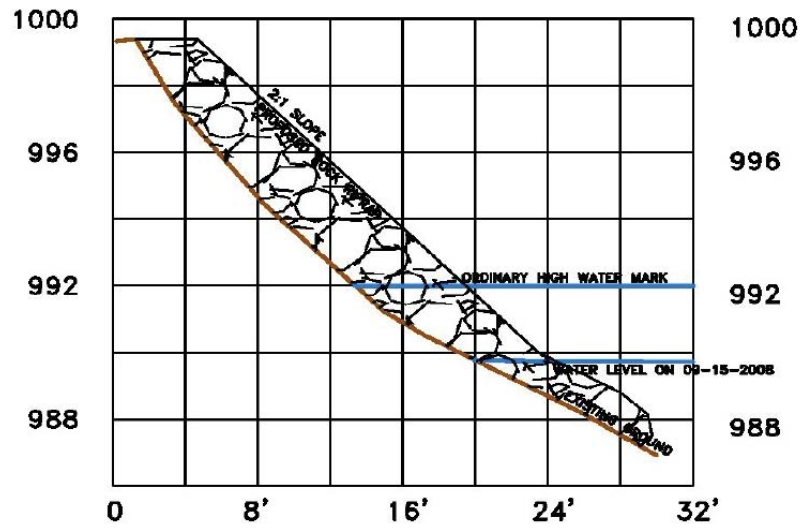
Source: USGS 7.5 minute quadrangle map Bird Creek, Idaho dated 1966.



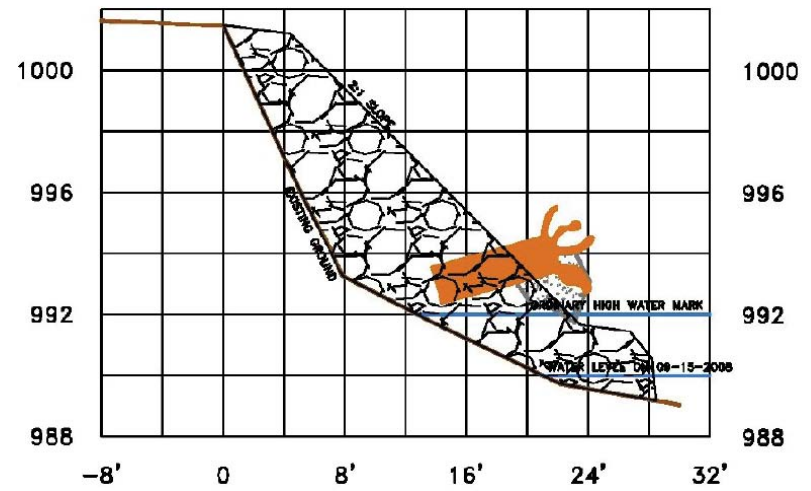
Approximate Scale in Miles

Figure 1
Project Vicinity Map

AREA 1 SECTION VIEW



AREA 2 SECTION VIEW



Source: Aspect Consulting, LLC

Figure 2
Cross Sections of Proposed Armoring



Proposed Project - Section A



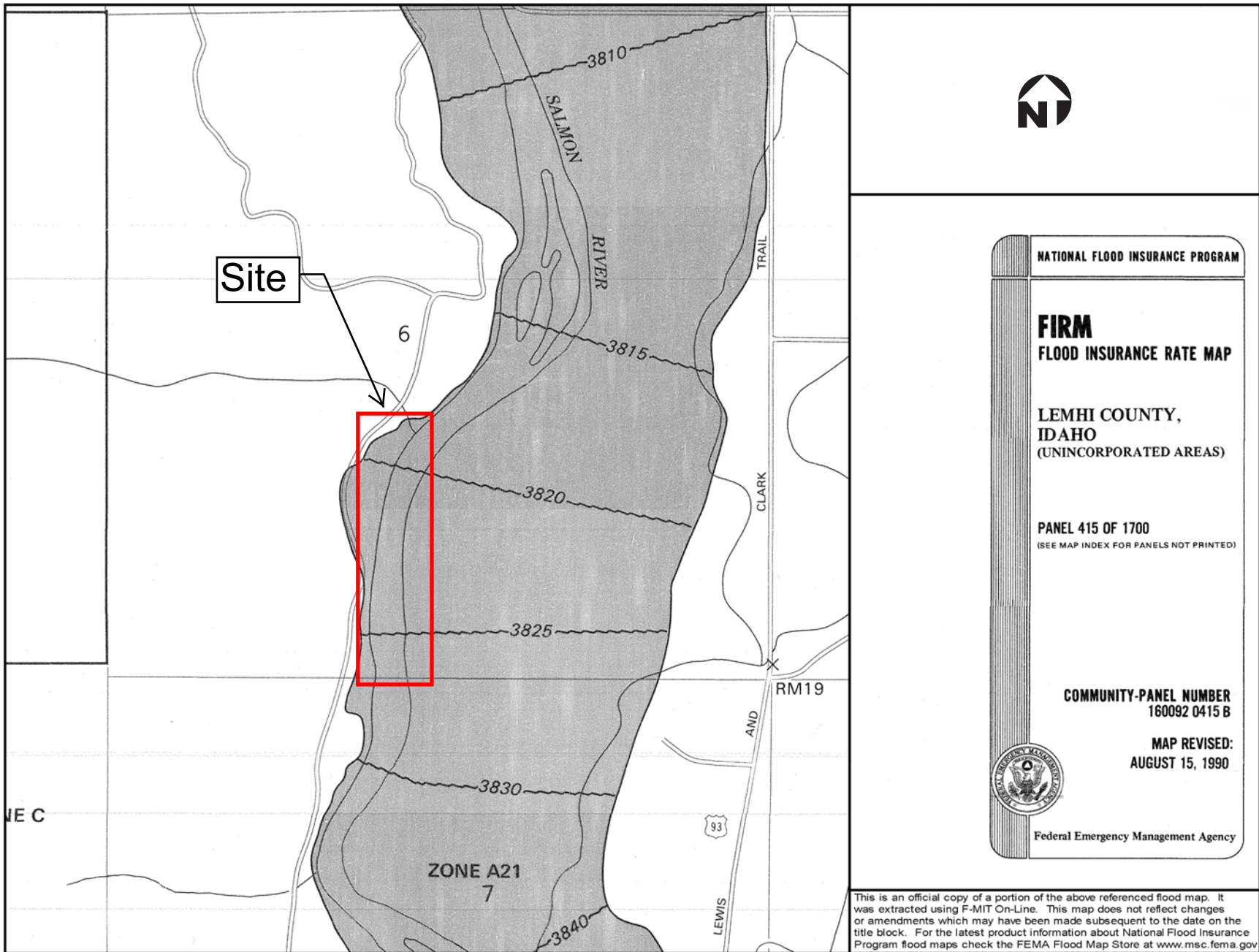
Proposed Project - Section B



Ice jams (looking North from residence)



Ice jams (adjacent to deck)



Appendix B
SHPO/Tribal Coordination



FEMA

February 4, 2011

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210 Main Street
Boise, Idaho 83702

**Re: FEMA Flood Mitigation Assistance Program - Section 106 Consultation – F Howarth
Multihazard Mitigation Project, Lemhi County, Idaho**

Dear Dr. Reid:

Lemhi County, through the Idaho Department of Homeland Security, applied for funding under the Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance (FMA) grant program for a flood /ice scour mitigation project in eastern Idaho. The need for this Undertaking is to prevent further erosion and scour of the riverbank adjacent to the Howarth residence and along Diamond Creek Road, a Lemhi County road. The proposed Undertaking is being reviewed pursuant to the ongoing FEMA/Idaho Programmatic Agreement (Agreement) among FEMA and your office, executed in accordance with the Section 106 of the National Historic Preservation Act. Concurrent with the Section 106 process, FEMA is preparing an Environmental Assessment (EA) for the action in compliance with the National Environmental Policy Act.

Proposed Undertaking

The proposed Undertaking would stabilize two main areas along the Howarth property's riverbank, located 6 miles north of the town of Salmon in Lemhi County, Idaho (Figure 1), with rock and large woody debris, coupled with native plantings. The areas targeted for bank stabilization include the area adjacent to the Howarth residence (referred to as "Section A"), and areas south of the residence near Diamond Creek Road (referred to as "Section B") (Figure 2). The enclosed archaeological survey report has a detailed description of the Undertaking and work methodology.

Area of Potential Effect (APE)

The project area lies along the west bank of the main stem Salmon River, 6 miles north of the town of Salmon, in Lemhi County, Idaho, as found in the southwest quarter of Section 6, Township 22 North, Range 22 East on the Bird Creek, Idaho, USGS quadrangle (1966). The project area is

Dr. Reid

Re: Section 106 Consultation – F Howarth Multihazard Mitigation Project, Lemhi County, Idaho
February 4, 2011

Page 2

located west of Highway 93 and adjacent to Diamond Creek Road. The project site features a private residence, constructed in 1995 and owned by Ms. Fredde Howarth (Photo 1).

The Area of Potential Effect (APE) for archaeological resources for the proposed mitigation project consists of six discontinuous areas (Areas 1-6) located in two sections (Sections A and B) totaling approximately 367 linear feet along the Salmon River, consisting of approximately 0.14 acre (Figure 1 and 2). A larger area (also indicated on Figures 1 and 2) was established for above-ground resources. As noted above, the subject residence was constructed in 1995, and all additional structures in the vicinity are of similar age. The proposed project is within a modern subdivision, with recent and newly-constructed residences, outbuildings, and streambank improvements; no evidence of historic structures is present within 0.5 miles or more of the subject property. Consequently, all direct and indirect impacts will be confined to the archaeological APE.

Identification of Historic Properties

Above-ground Resources. The Howarth residence is a single-story, wood-frame, ranch dwelling that was constructed in 1995. To the south of the residence is a single-story wood-frame barn, which appears to have been constructed in the past 10 to 15 years, and pasture land. The buildings do not appear to possess the exceptional importance required for properties less than 50 years of age to be eligible for listing in the National Register of Historic Places under Criterion Consideration G. The area is sparsely developed with residential properties that post-date 1970. Based on the Bird Creek, ID USGS Quadrangle, dated 1927 and revised in 1996, no additional buildings are located in the project area on adjacent parcels, or on the east bank of the Salmon River in this vicinity.

Archaeological Resources. Mike Kelly, MA, RPA, an archaeologist with URS Group Inc. (URS) and qualified under the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) for archaeology, conducted an assessment of the project's potential to affect historic properties within the APE. Given the topographic location of the project area and the historic and ancestral use of the area by Native American Tribes, the potential for presence of archaeological resources in the project area was considered.

Mr. Kelly completed a Phase 1 cultural resources survey within the project area on October 23, 2010. The enclosed archaeological survey report provides details on field methodology and findings. No cultural materials were observed within the bank sediments or along the well-washed cobbles at the base of the bank. URS recommended no additional investigation. Tribal consultation has been initiated to determine if there are any historic properties of religious or cultural significance to the Tribes in the APE.

Determination of Effects to Historic Properties

Based on identification efforts, barring additional information from your office or provided by Tribes, FEMA has determined that no historic properties, either above-ground or archaeological, will

Dr. Reid

Re: Section 106 Consultation – F Howarth Multihazard Mitigation Project, Lemhi County, Idaho

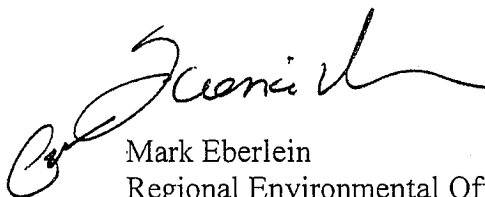
February 4, 2011

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be affected by the proposed Undertaking. If unexpected discoveries are made during the course of project execution, FEMA will proceed in compliance with State and Federal laws protecting cultural resources, including Section 106 of the NHPA, and all work shall cease in the immediate vicinity of the find until appropriate parties (including the SHPO and Tribes) are consulted and an appropriate plan for resolution is established.

We appreciate any information you are willing to provide. To assist your review please find enclosed an archeological survey report that has project figures and photos. We respectfully request your concurrence with this finding or additional comment. Please contact Ms. Science Kilner, Deputy Regional Environmental Officer, at (425) 487-4713 if you need assistance or have questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Eberlein", written in a cursive style.

Mark Eberlein
Regional Environmental Officer

Attachments: Archaeological and Historic Survey Report

SK:bb



FEMA

May 12, 2011

Kenneth C. Reid, Ph.D.
State Archaeologist and Deputy SHPO
Idaho State Historic Preservation Office
210 Main Street
Boise, ID 83702
Attention: Suzi Pengilly

**Re: FEMA Flood Mitigation Assistance Program - Section 106 Consultation – FHowarth
Multihazard Mitigation Project, Lemhi County, Idaho
Follow-up**

Dear Dr. Reid:

Please consider this follow up to your letter dated March 8, 2011, regarding the cultural resources evaluation on the above undertaking. We have revised the enclosed report to address the additional information you requested. Also, as an update, we provided the Nez Perce, Salish-Kootenai, and Shoshone-Bannock Tribes with information about the undertaking in January to determine if they had comments regarding historic properties of religious or cultural significance in the Area of Potential Effect. No responses have been received to date.

We respectfully request your concurrence with our finding or additional comment. Please contact Ms. Science Kilner, Deputy Regional Environmental Officer, at (425) 487-4713 if you need assistance or have questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Eberlein".

Mark Eberlein
Regional Environmental Officer

Attachments: Archaeological and Historic Survey Report
Photo 1

ME:bb



FEMA

January 13, 2011

Samuel N. Penney
Executive Committee Chairman
Nez Perce Tribe
P.O. Box 305
Lapwai, Idaho 83540

Re: FEMA Flood Mitigation Assistance Grant Program - Section 106 Consultation – Howarth
Multihazard Mitigation Project, Lemhi County, Idaho

Dear Mr. Penney:

Lemhi County, through the Idaho Department of Homeland Security, applied for funding under the Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance (FMA) grant program for a flood /ice-scour mitigation project in eastern Idaho. The need for this undertaking is to prevent further erosion and scour of the riverbank adjacent to the Howarth residence and along Diamond Creek Road, a Lemhi County road. The proposed undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act. Concurrent with the Section 106 process, FEMA is preparing an Environmental Assessment (EA) for the action in compliance with the National Environmental Policy Act.

Proposed Undertaking

The proposed undertaking would stabilize two main areas along the Howarth property's riverbank, located 6 miles north of the town of Salmon in Lemhi County, Idaho (Figure 1), with rock and large woody debris, coupled with native plantings. The areas targeted for bank stabilization include the area adjacent to the Howarth residence (referred to as "Section A"), and areas south of the residence near Diamond Creek Road (referred to as "Section B") (Figure 2). The enclosed archaeological survey report has a detailed description of the undertaking and work methodology.

Area of Potential Effect

The project area lies along the west bank of the main stem Salmon River, 6 miles north of the town of Salmon, in Lemhi County, Idaho, as found in the southwest quarter of Section 6, Township 22 North, Range 22 East on the Bird Creek, Idaho, USGS quadrangle (1966). The project area is located west of Highway 93 and adjacent to Diamond Creek Road. The project site features a private residence, constructed in 1995 and owned by Ms. Fredde Howarth (Photo 1). The Area of Potential Effect (APE) for archaeological resources for the proposed mitigation project consists of six discontinuous areas (Areas 1-6) located in two sections (Section A and B) totaling approximately 367 linear feet along the Salmon River, consisting of approximately 0.14 acre (Figure 1 and 2).

Mr. Penney
January 13, 2011
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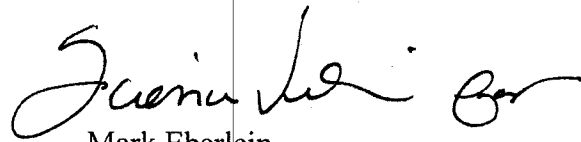
Historic Property Identification

Given the topographic location of the project area and the historic and ancestral use of the area by Native American Tribes, FEMA determined there is a potential for presence of archaeological resources. Mike Kelly, MA, RPA, an archaeologist with URS Group Inc. (URS) and qualified under the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) for archaeology, conducted an assessment of the project's potential to affect historic properties within the APE.

Mr. Kelly completed a Phase 1 cultural resources survey within the project area on October 23, 2010. The enclosed archaeological survey report provides details on field methodology and findings. No cultural materials were observed within the bank sediments or along the well-washed cobbles at the base of the bank. The report has been submitted to the Idaho State Historic Preservation Office for review. If you have information that the APE has historic properties of religious or cultural significance to the Tribe, we respectfully request such information to further evaluate undertaking impacts. Furthermore, FEMA conditions all its funded ground-disturbing projects to protect any unexpected discoveries of historic or archaeological remains during the site work.

We appreciate any information you are willing to provide at your earliest opportunity. To assist your review please find enclosed the archaeological survey report that has project figures and photos. Once the draft EA is complete, we will provide the Tribe with opportunity to comment on the document as well. Please contact Ms. Science Kilner, Deputy Regional Environmental Officer, at (425) 487-4713, if you need assistance or have questions.

Sincerely,



Mark Eberlein
Regional Environmental Officer

Enclosure

SK:bb



FEMA

January 13, 2011

John Washakie
Chairman, Shoshone Business Council
P.O. Box 217
Fort Washakie, Wyoming 82514

Re: FEMA Flood Mitigation Assistance Grant Program - Section 106 Consultation – Howarth
Multihazard Mitigation Project, Lemhi County, Idaho

Dear Mr. Washakie:

Lemhi County, through the Idaho Department of Homeland Security, applied for funding under the Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance (FMA) grant program for a flood /ice-scour mitigation project in eastern Idaho. The need for this undertaking is to prevent further erosion and scour of the riverbank adjacent to the Howarth residence and along Diamond Creek Road, a Lemhi County road. The proposed undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act. Concurrent with the Section 106 process, FEMA is preparing an Environmental Assessment (EA) for the action in compliance with the National Environmental Policy Act.

Proposed Undertaking

The proposed undertaking would stabilize two main areas along the Howarth property's riverbank, located 6 miles north of the town of Salmon in Lemhi County, Idaho (Figure 1), with rock and large woody debris, coupled with native plantings. The areas targeted for bank stabilization include the area adjacent to the Howarth residence (referred to as "Section A"), and areas south of the residence near Diamond Creek Road (referred to as "Section B") (Figure 2). The enclosed archaeological survey report has a detailed description of the undertaking and work methodology.

Area of Potential Effect

The project area lies along the west bank of the main stem Salmon River, 6 miles north of the town of Salmon, in Lemhi County, Idaho, as found in the southwest quarter of Section 6, Township 22 North, Range 22 East on the Bird Creek, Idaho, USGS quadrangle (1966). The project area is located west of Highway 93 and adjacent to Diamond Creek Road. The project site features a private residence, constructed in 1995 and owned by Ms. Fredde Howarth (Photo 1). The Area of Potential Effect (APE) for archaeological resources for the proposed mitigation project consists of six discontinuous areas (Areas 1-6) located in two sections (Section A and B) totaling approximately 367 linear feet along the Salmon River, consisting of approximately 0.14 acre (Figure 1 and 2).

Mr. Washakie
January 13, 2011
Page 2

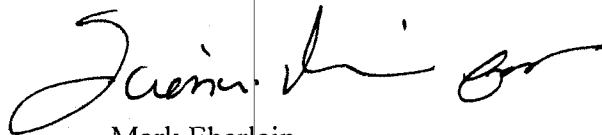
Historic Property Identification

Given the topographic location of the project area and the historic and ancestral use of the area by Native American Tribes, FEMA determined there is a potential for presence of archaeological resources. Mike Kelly, MA, RPA, an archaeologist with URS Group Inc. (URS) and qualified under the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) for archaeology, conducted an assessment of the project's potential to affect historic properties within the APE.

Mr. Kelly completed a Phase 1 cultural resources survey within the project area on October 23, 2010. The enclosed archaeological survey report provides details on field methodology and findings. No cultural materials were observed within the bank sediments or along the well-washed cobbles at the base of the bank. The report has been submitted to the Idaho State Historic Preservation Office for review. If you have information that the APE has historic properties of religious or cultural significance to the Tribe, we respectfully request such information to further evaluate undertaking impacts. Furthermore, FEMA conditions all its funded ground-disturbing projects to protect any unexpected discoveries of historic or archaeological remains during the site work.

We appreciate any information you are willing to provide at your earliest opportunity. To assist your review please find enclosed the archaeological survey report that has project figures and photos. Once the draft EA is complete, we will provide the Tribe with opportunity to comment on the document as well. Please contact Ms. Science Kilner, Deputy Regional Environmental Officer, at (425) 487-4713, if you need assistance or have questions.

Sincerely,



Mark Eberlein
Regional Environmental Officer

Enclosure

SK:bb



FEMA

January 13, 2011

Marcia Pablo
Tribal Preservation Department
Confederated Salish and Kootenai Tribes
P.O. Box 278
Pablo, Montana 59855

Re: FEMA Flood Mitigation Assistance Grant Program - Section 106 Consultation – Howarth
Multihazard Mitigation Project, Lemhi County, Idaho

Dear Ms. Pablo:

Lemhi County, through the Idaho Department of Homeland Security, applied for funding under the Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance (FMA) grant program for a flood /ice-scour mitigation project in eastern Idaho. The need for this undertaking is to prevent further erosion and scour of the riverbank adjacent to the Howarth residence and along Diamond Creek Road, a Lemhi County road. The proposed undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act. Concurrent with the Section 106 process, FEMA is preparing an Environmental Assessment (EA) for the action in compliance with the National Environmental Policy Act.

Proposed Undertaking

The proposed undertaking would stabilize two main areas along the Howarth property's riverbank, located 6 miles north of the town of Salmon in Lemhi County, Idaho (Figure 1), with rock and large woody debris, coupled with native plantings. The areas targeted for bank stabilization include the area adjacent to the Howarth residence (referred to as "Section A"), and areas south of the residence near Diamond Creek Road (referred to as "Section B") (Figure 2). The enclosed archaeological survey report has a detailed description of the undertaking and work methodology.

Area of Potential Effect

The project area lies along the west bank of the main stem Salmon River, 6 miles north of the town of Salmon, in Lemhi County, Idaho, as found in the southwest quarter of Section 6, Township 22 North, Range 22 East on the Bird Creek, Idaho, USGS quadrangle (1966). The project area is located west of Highway 93 and adjacent to Diamond Creek Road. The project site features a private residence, constructed in 1995 and owned by Ms. Fredde Howarth (Photo 1). The Area of Potential Effect (APE) for archaeological resources for the proposed mitigation project consists of six discontinuous areas (Areas 1-6) located in two sections (Section A and B) totaling approximately 367 linear feet along the Salmon River, consisting of approximately 0.14 acre (Figure 1 and 2).

Ms. Pablo
January 13, 2011
Page 2

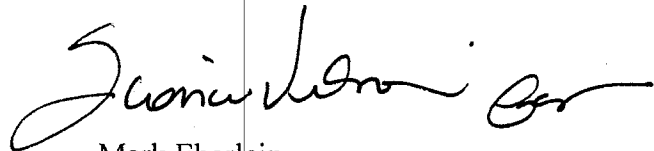
Historic Property Identification

Given the topographic location of the project area and the historic and ancestral use of the area by Native American Tribes, FEMA determined there is a potential for presence of archaeological resources. Mike Kelly, MA, RPA, an archaeologist with URS Group Inc. (URS) and qualified under the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) for archaeology, conducted an assessment of the project's potential to affect historic properties within the APE.

Mr. Kelly completed a Phase 1 cultural resources survey within the project area on October 23, 2010. The enclosed archaeological survey report provides details on field methodology and findings. No cultural materials were observed within the bank sediments or along the well-washed cobbles at the base of the bank. The report has been submitted to the Idaho State Historic Preservation Office for review. If you have information that the APE has historic properties of religious or cultural significance to the Tribe, we respectfully request such information to further evaluate undertaking impacts. Furthermore, FEMA conditions all its funded ground-disturbing projects to protect any unexpected discoveries of historic or archaeological remains during the site work.

We appreciate any information you are willing to provide at your earliest opportunity. To assist your review please find enclosed the archaeological survey report that has project figures and photos. Once the draft EA is complete, we will provide the Tribe with opportunity to comment on the document as well. Please contact Ms. Science Kilner, Deputy Regional Environmental Officer, at (425) 487-4713, if you need assistance or have questions.

Sincerely,



Mark Eberlein
Regional Environmental Officer

Enclosure

SK:bb



FEMA

January 13, 2011

Carolyn Boyer Smith
Cultural Resource Program
Shoshone-Bannock Tribes
P.O. Box 306 Pima Drive
Fort Hall, Idaho 83203

Re: FEMA Flood Mitigation Assistance Grant Program - Section 106 Consultation – Howarth
Multihazard Mitigation Project, Lemhi County, Idaho

Dear Ms. Smith:

Lemhi County, through the Idaho Department of Homeland Security, applied for funding under the Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance (FMA) grant program for a flood /ice-scour mitigation project in eastern Idaho. The need for this undertaking is to prevent further erosion and scour of the riverbank adjacent to the Howarth residence and along Diamond Creek Road, a Lemhi County road. The proposed undertaking is being reviewed pursuant to Section 106 of the National Historic Preservation Act. Concurrent with the Section 106 process, FEMA is preparing an Environmental Assessment (EA) for the action in compliance with the National Environmental Policy Act.

Proposed Undertaking

The proposed undertaking would stabilize two main areas along the Howarth property's riverbank, located 6 miles north of the town of Salmon in Lemhi County, Idaho (Figure 1), with rock and large woody debris, coupled with native plantings. The areas targeted for bank stabilization include the area adjacent to the Howarth residence (referred to as "Section A"), and areas south of the residence near Diamond Creek Road (referred to as "Section B") (Figure 2). The enclosed archaeological survey report has a detailed description of the undertaking and work methodology.

Area of Potential Effect

The project area lies along the west bank of the main stem Salmon River, 6 miles north of the town of Salmon, in Lemhi County, Idaho, as found in the southwest quarter of Section 6, Township 22 North, Range 22 East on the Bird Creek, Idaho, USGS quadrangle (1966). The project area is located west of Highway 93 and adjacent to Diamond Creek Road. The project site features a private residence, constructed in 1995 and owned by Ms. Fredde Howarth (Photo 1). The Area of Potential Effect (APE) for archaeological resources for the proposed mitigation project consists of six discontinuous areas (Areas 1-6) located in two sections (Section A and B) totaling approximately 367 linear feet along the Salmon River, consisting of approximately 0.14 acre (Figure 1 and 2).

Ms. Smith
January 13, 2011
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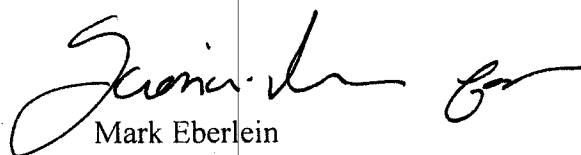
Historic Property Identification

Given the topographic location of the project area and the historic and ancestral use of the area by Native American Tribes, FEMA determined there is a potential for presence of archaeological resources. Mike Kelly, MA, RPA, an archaeologist with URS Group Inc. (URS) and qualified under the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) for archaeology, conducted an assessment of the project's potential to affect historic properties within the APE.

Mr. Kelly completed a Phase 1 cultural resources survey within the project area on October 23, 2010. The enclosed archeological survey report provides details on field methodology and findings. No cultural materials were observed within the bank sediments or along the well-washed cobbles at the base of the bank. The report has been submitted to the Idaho State Historic Preservation Office for review. If you have information that the APE has historic properties of religious or cultural significance to the Tribe, we respectfully request such information to further evaluate undertaking impacts. Furthermore, FEMA conditions all its funded ground disturbing projects to protect any unexpected discoveries of historic or archaeological remains during the site work.

We appreciate any information you are willing to provide at your earliest opportunity. To assist your review please find enclosed the archaeological survey report that has project figures and photos. Once the draft EA is complete, we will provide the tribe with opportunity to comment on the document as well. Please contact Ms. Science Kilner, Deputy Regional Environmental Officer, at (425) 487-4713, if you need assistance or have questions.

Sincerely,



Mark Eberlein
Regional Environmental Officer

Enclosure

SK:bb

Appendix C
Public Notice

PUBLIC NOTICE

**Federal Emergency Management Agency
Draft Environmental Assessment
Flood /Ice Scour Mitigation Project in Eastern Idaho**

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide funding to Lemhi County for a bank protection project in eastern Idaho. Funding would be provided as authorized by §203 of the Robert T. Stafford Disaster Assistance and Emergency Relief Act (Stafford Act), 42 U.S. Code.

FEMA prepared a draft Environmental Assessment (EA) for the proposed project pursuant to the National Environmental Policy Act of 1969 and FEMA's implementing regulations found in 44 Code of Federal Regulations (CFR) Part 10. The EA evaluates alternatives for compliance with applicable environmental laws, including Executive Orders 11990 (Protection of Wetlands), 11988 (Floodplain Management), and 12898 (Environmental Justice). The alternatives evaluated in the EA are (1) no action; and (2) bank protection and re-vegetation through mechanical means on the Howarth property, located within Lemhi County on the Salmon River (Proposed Action).

The EA is available for review online at the FEMA environmental Web site at: www.fema.gov/plan/ehp/envdocuments under Region X. If no significant issues are identified during the comment period, FEMA will finalize the EA, issue a Finding of No Significant Impact (FONSI), and fund the project. Unless substantive comments are received, FEMA will not publish another notice for this project. However, should a FONSI be issued, it will be available for public viewing at www.fema.gov/plan/ehp/envdocuments under Region X.

The draft EA is also available for review on July 21, 2011 at the Lemhi County Courthouse at 206 Courthouse Drive, Salmon, ID.

Written comments on the draft EA should be directed no later than 5 p.m. on August 22, 2011 to Mark Eberlein, Regional Environmental Officer, FEMA Region X, 130 228th Street SW, Bothell, WA 98021, or by e-mail to mark.eberlein@dhs.gov. Comments also can be faxed to 425-487-4613.