

2008 Levee Rehabilitation Program Big Cherry Creek (Granite Creek Levee)

Lincoln County, Montana



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Seattle District

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**2008 Big Cherry Creek (Granite Creek Levee) Rehabilitation
Lincoln County, Montana**

Responsible Agency: The responsible agency for the levee rehabilitation project is the U.S. Army Corps of Engineers, Seattle District.

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1. Introduction

1.1. Background

The 1,365 foot Granite Creek levee is located along the left bank of Big Cherry Creek and is a tributary of Libby Creek near the City of Libby, in Lincoln County, Montana. The levee protects residential and public use land including 10 residential structures and Highway 2.

The levee is constructed of earthen materials. The riverward slope is armored with Class IV riprap with a 3-foot thick riprap blanket consistent with the repairs performed by the Corps in 1996 (project no. KOO-1-95). In addition to Class IV riprap, Class V riprap would be placed at the site where flows are directed perpendicular to the levee. The existing levee prism has a riverward slope of approximately 2.5H:1V (horizontal to vertical) and a slope of 3H:1V on the landward side. The toe of the levee is approximately 15 feet in width by 5 feet in height. The top width ranges from 15 to 20 feet and includes gravel access road. This levee protects residential structures and public infrastructure for the City of Libby, Montana. It is estimated that the undamaged levee would be overtopped with a flood event corresponding to an event greater than a 100-year return period. Lincoln County performs annual maintenance including the periodic removal of vegetation and thinning or removal of trees that would jeopardize levee integrity.

The purpose of the proposed PL 84-99 rehabilitation is to reestablish authorized levels of protection. During November 2006, rainfall and snowmelt resulted in a flood event on Big Cherry Creek. The estimated flood peak is between approximately 950 and 3,000 cubic feet per second (cfs)¹. The flood peak corresponds to a return interval between 50 and 100-year event. The levee was not overtopped. There is currently 350 linear feet (LF) of levee without sufficient toe material to provide an equivalent pre-flood level of protection at the Granite Creek levee. The thalweg of the channel at the project site is located against the damaged section resulting in high velocities caused by flow impingement. It is highly possible the segment of levee repaired would erode further during subsequent flood events without sufficient protection to prevent scouring.

The proposed repair would consist of reestablishing the toe protection and replacing the lost riprap.

1.2. Location

The project is located on the right bank of Big Cherry Creek outside the City of Libby, Montana at River Mile 1.6 (Section 23, T30N, R31W).

¹ Granite Creek gage (USGS Gage No. 12302500) was discontinued in 1969. Discharge and frequency are based on regional regression equations.

1.3. Authorization

The proposed Granite Creek Levee Rehabilitation is authorized by Public Law 84-99 (33 USC 701n). Corps rehabilitation and restoration work under this authority is limited to flood control works damaged or destroyed by flood. The rehabilitated structure would be designed to provide the same degree of protection as the original structure. The Corps has determined that if the existing levee is not properly repaired by the next flood season, the levee would represent a potential for unacceptable hazard to human life, a significant loss of property, or significant economic hardship.

1.4. NEPA Requirements

As the federal Action Agency for this project, the Corps is required by the National Environmental Policy Act (NEPA) (40 CFR § 1500 et. seq.) to assess the effects to the human environment of proposed agency actions, determine the significance of those effects, and coordinate with other agencies, Tribes, and the interested public in that assessment. The Corps has implemented NEPA through its ER 200-2-2 regulation. This EA has been prepared in accordance with this regulation, which allows for description of project features and an analysis of potential environmental affects for public disclosure. Comments on the proposed project will be taken and incorporated as appropriate.

2. Alternatives

Multiple alternatives were considered including the No-Action Alternative, the Non-Structural Alternative, and the Repair the Damage Alternative (the recommended plan). In order for any alternative to be acceptable for consideration it must meet certain objectives. The alternative must provide for flood protection similar to the rest of the levee segment, it must be economically justified, it should be environmentally acceptable, and it should minimize costs for both the public sponsor and the Federal government.

2.1. Alternative 1- No Action Alternative

The No Action alternative consists of allowing existing damage and associated repairs to remain in place. The No-Action alternative would leave the levee in its current damaged condition. This alternative was discarded because of the high potential of flood damages to the protected public use lands, and residential structures in and near the City of Libby. Long term sustainability and protection at this location requires proper rehabilitation of the existing condition and therefore, the no action alternative was dropped from detailed consideration.

2.2. Alternative 2- Non Structural Alternative

The Non-Structural alternative would relocate all existing residential structures, utilities, and public use facilities. The costs associated with relocating or flood proofing existing structures within the potential inundation area behind the levee would significantly exceed the costs associated with repairing the levee and therefore, this alternative was not considered further.

2.3. Alternative 3- Rehabilitate the Damaged Levee (Preferred Alternative)

The recommended repair would restore the levee back to pre-flood conditions and would require repairing toe damage for approximately 350 linear feet. The riverward toe slope would be reestablished at a 2.5H:1V to provide continued stability. Class IV riprap would be placed up to a vertical height of 5 feet measured from the apparent toe. Additionally Class V riprap would be placed at the downstream site where flows are directed perpendicular to the levee. Toe rock placement would occur at or below the ordinary high water mark. All work would be conducted within the pre-existing levee structure footprint, substantially similar construction methods and materials. The pre-flood levee profile and orientation would not be substantially altered. Staging and stock piling would occur on the levee itself and material would be delivered via the access point off Highway 2.

Equipment utilized would be similar to those employed during normal bankside armoring projects and likely to include a hydraulic excavator, dump truck(s), and bulldozer. Any nighttime operations would require a temporary light plant. Construction is expected to occur within the July 1 – August 31, 2008 work window established by the US Fish and Wildlife Service and corroborated by the Montana Department of Fish, Wildlife and Parks (FWP) as a time when juvenile salmonids are least likely to be in the area. Construction vehicles would access the site by the existing road located on top of the levee. Construction vehicles would stage in the field on the backside of the levee, away from the river. Work is expected to take approximately 10-14 working days.

3. Existing conditions

3.1. Elements of the Natural Environment

3.1.1. Geology/Soil

The Northern Rocky Mountains were formed by extensive folding and thrust-faulting of a series of metamorphic and sedimentary rocks. Glacial action profoundly altered the valleys of northern and eastern sections of the northern Rockies. Except for the relatively broad, flat valleys where the terrain is moderate such as along the Kootenai River valley. The greater project area is typified by narrow valleys and rugged steep slopes with frequent rock outcroppings. Bedrock is chiefly folded and faulted crustal blocks of metamorphosed, sedimentary rock materials of the Precambrian Belt series—erosion-resistant siliceous argillites, quartzites, and impure limestones that have been subjected to low-grade metamorphism. Granitic intrusions (sills, stocks, and batholiths) occur throughout the subbasin (Kootenai 2004). Boulder and cobble sized substrates characterize the project area bedload.

The area has a rich history of mining for precious metals and commercial placer mines for silver and gold and vermiculite. Several mines were located in the Big Cherry Creek watershed including the Snowstorm Mine but; of particular note, are the vermiculite mines found in the nearby hills and around the City of Libby, Montana. These mines

extracted vermiculite and asbestos derivatives for years and have contributed to human health hazards in the vicinity of Troy and Libby, Montana. Rocks and building materials containing vermiculite and its derivatives were used throughout the region for various reasons including flood control. In 1996, rocks from an existing mine containing vermiculite were placed for flood control purposes on Big Cherry Creek. Some of this material was placed in the immediate project footprint. The Environmental Protection Agency is working on a remediation plan for this area which may include removal of contaminated material from the banks of Big Cherry Creek.

3.1.2. Water Quality

Big Cherry Creek is an eight mile long mountain stream that originates above the city of Libby, Montana. Big Cherry Creek flows average 46 cfs on an average annual basis. Streamflow patterns in the basin are typical for mountain streams in northern Montana with snowpack driving the heaviest flows in the spring months. Summer flows may drop substantially. Montana DEQ has determined that Big Cherry Creek fully supports agricultural, industrial, and primary contact recreation uses, and partially supports aquatic life and cold water fishery uses. Zinc concentrations within Big Cherry Creek, forest roads, habitat modification, and impacts from abandoned mine lands are noted by the DEQ has possibly affecting aquatic life (Montana DEQ, 2008).

3.1.3. Plant Communities

Portions of the Granite Creek levee not protected by rock are exposed to colonization by grasses, weeds and woody riparian vegetation. The existing vegetative community consists primarily of sparse grasses and narrow bands of native deciduous plants between 5 and 10 feet high. The vegetative community is mixed and not continuous across the levee face. A mixed cottonwood and coniferous stand is located on the landward side of the levee. A mix of native understory plants and grasses accompany the overstory.

3.1.4. Fish Resources

Big Cherry Creek system is inhabited by a number of native fish species including the redband rainbow trout, longnose dace, mountain whitefish, rainbow trout, sculpin, westslope cutthroat trout and bull trout. The project reach provides a migration corridor for fish species requiring access to the upper river basin or moving into Big Cherry Creek from the lower reaches of Libby Creek and the Kootenai River. Resident fishes use the main river and its numerous side channels area as spawning habitat. Juvenile rearing could take place within all accessible waters in the reach.

3.1.5. Wildlife

Wildlife presence in the project area is considered typical of rural areas of western Montana. Mule deer, white-tailed deer, coyote, fox and small furbearers such as raccoon and opossum reside in riparian areas and near outbuildings. Large carnivores such as cougar and black bear are present in the greater Big Cherry Creek watershed but infrequent visitors to the project area due to moderate levels of human activity and traffic. Bird life includes raptors such as the bald eagle and red tailed hawk. Waterfowl are frequently observed flying along Libby Creek and the Kootenai River. Waterfowl may

possibly nest in the riparian areas around the project. Small mammals may feed on existing vegetation or take temporary shelter in the rocks.

3.1.6. Federally Listed Species

Five species protected under the Endangered Species Act of 1973 (16 USC 1531-1544) and one species protected under the Bald and Golden Eagle Protection Act amended 1978 potentially occur in the project vicinity. A list of species potentially affected by the proposed project was requested from the USFWS. Table 1 summarizes the information received from USFWS. The following section briefly summarizes relevant life history information for the protected species and synthesizes current knowledge on the presence and utilization of the project and action areas by these species. Detail on potential effects to ESA listed species is found in Section 4.0.

Table 1. Protected Species Potentially Occurring in the Project Vicinity

Species in Boundary County	Federal Status	Presence in the Action Area
Gray wolf (<i>Canis lupus</i>)	Endangered	Absent from the action area. No suitable habitat. Nearest presence is more than 5 miles outside of the action area.
Grizzly bear (<i>Ursus arctos horribilis</i>)	Threatened	Absent from the action area. No suitable habitat. Nearest presence is more than 5 miles outside of the action area.
Canada lynx (<i>Lynx canadensis</i>)	Threatened	Absent from the action area. Occurs at elevations above 4,000 feet in forested habitats. No suitable habitat. Nearest presence is more than 5 miles outside of the action area.
Kootenai River white sturgeon (<i>Acipenser transmontanus</i>)	Endangered	Documented in the mainstem Kootenai River below Kootenai Falls are downstream of the project site.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Protected under the Bald Eagle Protection Act	Present in the action area. No active nests located within ¼ miles from the project area.
Bull trout (<i>Salvelinus confluentus</i>)	Threatened	Documented in the Kootenai River and Big Cherry Creek.

Gray Wolf

The gray wolf is listed as an endangered species in Montana and can utilize a broad spectrum of habitats provided there is an abundance of prey (generally ungulates), and that suitable denning and rendezvous sites exist away from human disturbance. The availability of prey may be the primary factor in determining habitat suitability (Stevens and Lofts 1988). Den sites are most commonly burrows in sandy soils, but can be located

in a variety of settings from downed logs and hollow trees to rock caves. Rendezvous sites tend to be near a source of open water in small meadows with limited visibility.

Gray wolf pack #15 is the closest pack to the project area with a core range generally within the undisturbed forests approximately 10 miles to the north and northeast of the project site.

Grizzly Bear

The grizzly bear was listed as threatened by the USFWS in 1975. Historically, the grizzly bear occurred from the mid-plains west to the coast of California and south into Texas and Mexico. Currently, grizzly bears remain in only five areas in the conterminous United States: the Greater Yellowstone Ecosystem, the Northern Continental Divide, the Cabinet-Yaak area, the Selkirk Mountains, and the Northern Cascade Mountains. Two additional areas, the San Juan Mountains in Colorado, and the Selway-Bitterroot Mountains in Idaho, may also support grizzly bears (USFWS 1993). The spatial and temporal distribution of food has a pronounced influence on grizzly bear movements. In general, grizzlies seek lower elevations and drainage bottoms upon emergence from the den where ungulate winter ranges and new plant growth are most abundant. Through spring and early summer, the bears will follow plant growth back up to higher elevations. Thus, an abundant and varied food supply and large tracts of land providing relative isolation and freedom from human encroachment are important components of grizzly bear habitat.

Cover is another important component of grizzly bear habitat. Although grizzly bears occur most often in a mosaic of forested habitat interspersed with open parks for foraging, the majority of locations of radio-collared bears are from dense forest habitat. In addition, the vast majority of grizzly bear bedding sites are in forest habitats less than 2 yards from a tree (USFWS 1993).

Denning habitat is an essential component of grizzly bear habitat because grizzly bears do not enter true hibernation (body temperature remains constant in grizzly bears during hibernation). Bears have been documented to abandon denning sites in response to disturbance. Dens are excavated from September to November, typically on steep slopes where wind and topography cause large accumulations of deep snow. Den sites usually occur at higher elevations well away from development and human activity (USFWS 1993).

The mountains to the north of Libby, Montana contain suitable habitat for Grizzly Bear and lies within the greater Selkirk/Cabinet/Yaak Grizzly Bear recovery zones. Grizzly bears are known to be present in these ranges and are occasionally found outside the City of Libby, Montana. Grizzly bear use of areas more routinely disturbed by human presence is considered rare.

Canada Lynx

Canada Lynx have been documented, historically and currently, throughout the Rocky Mountains of Montana, from the Canadian Border through the Yellowstone area (Ruediger et al., 2000). Lynx occur in mesic coniferous forests that have cold, snowy winters. In the western U.S., most lynx occurrences (83%) are associated with Rocky Mountain conifer forest, and most (77%) occur within the 1,500-2,000 m (4,920-6,560 ft) elevation zone (McKelvey et al., 2000). Primary vegetation that contributes to lynx habitat is lodgepole pine, subalpine fir, and Engelmann spruce (Aubry et al., 2000). In extreme northern Idaho, northeastern Washington, and northwestern Montana, cedar-hemlock habitat types may also be considered primary vegetation. Secondary vegetation that, when interspersed within subalpine forests, may also contribute to lynx habitat, includes cool, moist Douglas-fir, grand fir, western larch, and aspen forests. Dry forest types (e.g., ponderosa pine, climax lodgepole pine) do not provide lynx habitat.

Lynx seem to prefer to move through continuous forest, and frequently use ridges, saddles, and riparian areas (Koehler 1990, Staples 1995). Lynx require cover for stalking and security, and usually do not cross openings wider than 100 meters (Koehler and Brittell 1990, *in* Montana Fish, Wildlife, and Parks, 2005).

Canada lynx use of the project area is most likely nonexistent. This project lies in close proximity to well traveled highways and rural, agricultural, and industrial development. The summer construction season coincides with the least use of low elevation habitats by lynx. The short duration and lack of long term impacts to habitat or prey resources of lynx further reduce any potential for effect should they be periodically present in the project area but undocumented.

Kootenai River White Sturgeon

The Kootenai River population of white sturgeon inhabits and migrates freely in the Kootenai River from Kootenai Falls in Montana downstream into Kootenay Lake, British Columbia (B.C.), Canada (USFWS 1999). The Kootenai River population of white sturgeon is one of 18 land-locked populations of white sturgeon found in the Pacific Northwest. It is restricted to approximately 168 miles (270 kilometers) of the Kootenai River in Idaho and Montana and Kootenay Lake in British Columbia, Canada, primarily upstream from Cora Linn Dam at the outflow from Kootenay Lake (USFWS 1999). The Kootenai River population has been declining since the mid-1960. By 1997 the population was estimated to be approximately 1,468 wild fish with few individuals less than 25 years of age (USFWS, 1999). Since that time, the wild population has been augmented with the release of nearly 2,800 hatchery-reared juvenile white sturgeon from the Kootenai Tribal Hatchery in Bonners Ferry, Idaho and approximately 2 miles downstream of the project site (USFWS, 1999).

White sturgeon utilize the Kootenai River in reaches below Kootenai Falls. Kootenai Falls at river mile 193 is considered the upstream population boundary the white sturgeon (Federal Register, 1994). In 2000, the Idaho Department of Fish and Game (IDFG) estimated that that there were about 760 adult sturgeon remaining in the Kootenai River population (Paragamian et al. 2006). This is down from an estimated 5,000 to 6,000

adults in the early 1980s. These adults are now being lost to natural causes at the rate of 9 percent per year, leading to a 2005 population estimate of fewer than 500 adults (Paragamian et al. 2006). Based on recently revised aging information, females are not expected to reach sexual maturity until 16 to 35 years of age (Devore et al. 1995). Thus, there is increasing urgency in restoring the spawning and incubation habitat to again allow the sturgeon to recruit naturally and to begin rebuilding a healthy population structure. Utilization of Big Cherry Creek by juvenile and adult sturgeon do not occur near the project area because Kootenai Falls blocks their migration.

Columbia River Bull Trout

The Columbia River bull trout population segment was listed as a threatened species in October 1999. Bull trout populations have declined throughout much of the species' range; some local populations are extinct, and many other stocks are isolated and may be at risk (Rieman and McIntyre, 1993). Combinations of factors including habitat degradation, expansion of exotic species, and exploitation have contributed to the decline and fragmentation of indigenous bull trout populations.

Bull trout are known to exhibit four types of life history strategies. The three freshwater forms include adfluvial, which migrate between lakes and streams; fluvial, which migrate within river systems; and resident, which are non-migratory. The fourth and least common strategy, anadromy, occurs when the fish spawn in fresh water after rearing for some portion of their life in the ocean.

The majority of migratory bull trout spawning in Montana occurs in a small percentage of the total stream habitat available. Spawning takes place between late August and early November, principally in third and fourth order streams. Spawning adults use low gradient areas (less than 2%) with gravel/cobble substrate and water depths between 0.1 and 0.6 meters (4 to 24 inches) and velocities from 0.09 to 0.61 m/sec (0.3 to 2.0 ft./sec) (Carnefix, 2003).

Bull trout are apex predators that remain in places where prey is abundant. Bull trout will also follow prey around, such as migrating juvenile salmon. It is unlikely that bull trout would be located adjacent to the project area because the existing conditions (fast water and little cover) are not favorable for juvenile salmonids or other bull trout prey items.

3.1.7. Bald and Golden Eagle Protection Act

The bald eagle was de-listed from the Federal List of Threatened and Endangered Species effective August 8, 2007. In order to assure that bald eagles are not adversely affected, the US Fish and Wildlife Service also published guidance under the Bald and Golden Eagle Protection Act (BGEPA), including a definition of "disturb". The following analysis is prepared to identify whether a permit under the BGEPA would be necessary.

Most bald eagles are capable of breeding at 4 or 5 years of age (USFWS 2007). In the west, breeding and nesting activities occur between January 1 and August 15. Nests are most common near marine shorelines, but also occur on rivers and lakes. The nest is a massive structure (up to 5 feet wide and 3 feet deep) of sizable sticks lines with leaves

and grass. The nest is often located near the top of the largest tree and offers an unobstructed view. The nest is usually built within easy flight distance of an ocean, lake, pond, or stream. Eagles may use the same nest for many years, adding to it each season. It is not unusual for a nesting pair to create one or more alternate nests (USFWS 2007). Nesting activity usually occurs in January and February and culminates with laying of one to three eggs. Eggs generally hatch in April and May. Fledglings will typically leave the nest in mid-July, but often remain at or near the nest until mid-August (USFWS 2007).

In winter, bald eagles congregate at specific wintering (non-nesting) sites that are generally close to open water and offer an abundant and readily available food supply with good perch trees and suitable night roosts. When foraging, bald eagles select dominant trees with branches large enough to support their weight as perches to view foraging areas. Night roosts typically offer isolation and thermal protection.

Habitat loss continues to be the most important long-term threat to the bald eagle. Disturbance of nesting areas is another concern. Eagles may abandon a nest due to loud inconsistent noise, such as the type produced by construction activities. Management guidelines, issued by the USFWS to maintain protection after delisting, recommend a buffer of 660 feet from an active nest during the nest season, if the nest site is visible from the project area (USFWS 2007). Outside of the nesting season, activity may be carried out adjacent to a nest; however, communal roost sites should be protected by limiting disturbance (USFWS 2007).

Bald eagles are both year-round residents and winter visitors in northwestern Montana. The project occurs within bald eagle management zone 7 which extends from southern Washington to western Montana and includes the Kootenai Valley and the Pend Oreille River drainage. Zone 7 is one of three primary nesting areas in the state. In 2006, there were 49 active nest territories in zone 7 (IDFG, 2006). Zone 7 includes northwestern Montana. Thirty-two, or 65 percent, of the active nests successfully fledged one or more eaglets compared to a statewide average of 55 percent success (IDFG, 2006).

3.2. Elements of the Built Environment

3.2.1. Land Use and Shorelines

Land use adjacent to and in the vicinity of the project includes transportation, human residences and small agricultural farms. Mineral and timber extraction also occurs in the greater project area. River use in the project area is limited but includes trout fishing, walking and other minor and short-term recreational activities. Big Cherry Creek has several sections of levee on both sides of its banks near the City of Libby. These structures reduce flood risks to the City of Libby and outlying properties.

3.2.2. Socioeconomics and Aesthetics

Libby, Montana is a moderate sized rural City within the state of Montana. The City is located on the banks of the Kootenai River and on either side of its' main transportation corridor, Highway 2. The city of Libby has remained a rural community supported

largely by the timber industry and seasonal work. The City has dedicated educational and community support facilities.

The City of Libby is surrounded by a mountainous landscape characterized by forest in the upper reaches and agriculture in the lower reaches. Spectacular views of the Cabinet Mountains can be seen from several points. Hiking trails meander through the forested regions to be enjoyed by nature enthusiasts. The Kootenai River and its tributaries are accessible by car and foot. Big Cherry Creek and the Kootenai River are utilized by anglers, picnickers, and hikers. Local residents use existing trails or levees to walk along the river edge.

3.2.3. Cultural Resources

The Corps determined that the proposed levee rehabilitation is the type of undertaking with the potential to affect properties eligible for listing in the National Register of Historic Places (NRHP) if they exist in the project's area of potential effects (APE). Accordingly, a Corps staff archaeologist contacted the Montana State Archaeologist and requested any information they had on file regarding documented historic properties and prior archaeological assessment surveys in or adjacent to the APE. In addition, a letter soliciting knowledge and concerns was sent to the Tribal Historic Preservation Officer (THPO) of the Confederated Salish and Kootenai Tribes of the Flathead Reservation (Tribes) on 19 February 2008.

3.2.4. Native American Issues

The project area lies on land ceded to the United States by the Libby Band of the Upper Kootenai Tribes by the Hellgate Treaty of 1855. In return, the United States promised to provide specified goods and services and guaranteed that the Tribes could continue their traditional way of life. To effectuate this guarantee, the Tribes retained exclusive possession of the Flathead Indian Reservation as their homeland and also expressly reserved in perpetuity the right to fish at all of their usual and accustomed places and to hunt, gather plants, build temporary shelters, and pasture stock in open and unclaimed lands located throughout their aboriginal territory. The Kootenai River and its floodplain, including the proposed project location, is one of the places subject to the Tribes' treaty-reserved fishing and hunting rights. The Corps solicited the affected Tribes for any concerns and knowledge of resources of Native American interest. During construction of the levee rehabilitation project, tribal representatives will be asked to provide input and a chance to further express any interests. Corps archeologists will continue coordination with the Tribes to discuss any relevant cultural resources issues should they be identified.

3.2.5. Recreation

Local recreation adjacent to the project site consists of fishing and hiking along the river. The levee is adjacent to public land and therefore directed public recreation can occur at the site. In general recreational use of the project site is opportunistic and short-term.

3.2.6. Noise

Few noise pollution producing sources exist in the project vicinity. There are no industrial noise sources, or other loud activities. Human disturbance and nearby highway

2 through Libby, Montana are likely the largest sources of potential and persistent noise in the project area,

3.2.7. Air Quality

Air quality in Lincoln County and at the site is regulated by the Montana Department of Environmental Quality. Motor vehicles are the largest source of air pollutants in Lincoln County, although wood-burning stoves contribute during the winter. Problems generally occur during the dry late summer when minimal wind conditions persist for long periods of time, or during mid-winter thermal inversions. Libby, is in a “non-attainment” area for particulates (PM-10). Carbon monoxide, and other particulates (PM-2.5) are also of concern.

3.2.8. Environmental Health/ Hazardous and Toxic Waste

A source of contamination is present in the general project area. In 1999, the EPA responded to local news about asbestos contamination began to investigate conditions around the City of Libby. The efforts lead to the designation of Libby and its surroundings as a Superfund site. The on-going Superfund cleanup covers old mine sites, residential and commercial properties damaged by asbestos and other related sources of contamination. The EPA reports the existence of rock contaminated with asbestos in the lower Big Cherry Creek basin. This rock was placed along Big Cherry Creek during the 1996 levee and bank stabilization efforts. The source of the rock used on Big Cherry Creek and creeks throughout the Libby vicinity were supplied by an established quarry and only after the 1996 was the quarry rock found to contain asbestos. The proposed action would occur at several discrete locations within the footprint of the 1996 levee repairs.

4. Environmental Effects of the Selected Alternative

The following section provides an analysis of impacts potentially occurring as a result of the proposed project. The section focuses on environmental effects of the selected alternative only. Environmental impacts from the no action alternative were found to maintain existing conditions within the natural and built environments. In cases where the no-action alternative is found to result in notable environmental effects, those effects would be described within this section.

4.1. Elements of the Natural Environment

4.1.1. General Setting/ Climate

The Corps believes there would be no significant effects to the climate or general setting of the project. The work would maintain flood damage reduction function of the existing levee to its previous level.

4.1.2. Geology/ Soils

The proposed project is a replacement in kind of a pre-existing levee structure. The Corps believes arresting future erosion at the project site will be an affect of the proposed project that will not result in measurable affects to local geology and soils. The river

would continue to provide necessary gravels to the river reach. Substrate sizes through the reach would not be significantly affected.

4.1.3. Water Quality

The Corps expects no significant effects to surface waters from this levee rehabilitation. Lessons from similar rehabilitations show that flows in Big Cherry Creek would not be significantly altered or result in a shift in the thalweg. Turbidity monitoring during similar rehabilitation projects generally resulted in turbidity not being observed beyond a 300 ft mixing zone. The proposed project would be constructed using similar methods as the 1996 repair so that excessive turbidity during construction can be avoided. Summer flows cause Big Cherry Creek to recede towards its thalweg causing some river banks to dry. It is possible that water flow in front of the proposed project would be dry or nearly dry over portions of the construction.

4.1.4. Plant Communities

The rehabilitation of Big Cherry Creek would require removal of grasses and other vegetative species associated with the along face of the levee. All work is expected to occur on the waterward side of the levee, leaving the forest community landward of the levee undisturbed. Willows and other beneficial native plants often found in diverse riparian communities are underrepresented within the levee work footprint due to excessive erosion and previous rock placements. There is an existing but discontinuous community of riparian vegetation along the Granite Creek levee. The three repair sites proposed will not result in significant loss of this community. Therefore, the amount of vegetation to be removed at this location is minor and represents no significant loss of streamside habitat.

The project site is located waterward of a previously rocked levee structure. The levee is not considered a jurisdictional wetland. Access roads and staging areas are also not located in jurisdictional wetlands. No significant effects are anticipated.

4.1.5. Fish Resources

The levee rehabilitation project would result in placement of rock along the waterward face of an existing levee with heavy equipment. Impacts associated with this type of activity are generally short-term and minor. Long-term impacts to aquatic resources are generally indirect resulting from a simplification of the riparian corridor. This project would result in minor vegetative loss.

No significant impacts are expected. Environmental monitoring of similar small levee rehabilitation projects have resulted in only short-term and minor construction related increases in turbidity; causing insignificant impacts, if any, to otherwise healthy fish species adjacent or downstream of the project. It is also possible that the late summer months would cause water levels to recede from the work site allowing partial construction in the dry. Any realized increases in turbidity would be temporary and minor.

4.1.6. Wildlife

No significant effects to local wildlife are expected from the proposed project. Local wildlife including raccoon, mule deer and white-tailed deer do frequent the project area and surrounding farms along with other species. These species are primarily nocturnal and are not normally observed at the project site during work hours. Other daytime species are smaller and can readily escape for short periods to nearby riparian areas or timber.

4.1.7. Endangered Species

Construction work is scheduled for the USFWS fish window for in-water work, July 1 through August 31. This fish window corresponds to the portion of the year when juvenile and adult bull trout are least likely to be present in the project reach of Big Cherry Creek. Although some adult bull trout are likely to be in the mainstem Kootenai River system at the time of construction, the use of the project reach in late summer months is presumed rare as the low flow and elevated temperatures are less preferred by bull trout than more suitable upper reaches of Big Cherry Creek. Big Cherry Creek is located above Kootenai Falls which prevents access for white sturgeon to the project area.

The proximity of Big Cherry Creek to established human settlement and routine disturbances from cars and other commerce is likely to dissuade large carnivores such as the lynx, bear and wolf from visiting the immediate area. A Biological Assessment was submitted to the USFWS in March of 2008 initiating Section 7 consultation on the proposed action. The Corps' has completed its Section 7 consultation. Recommendations provided to the Corps by the USFWS have been incorporated into the project as appropriate. Table 2 summarizes the effect determinations made in the Biological Assessment for which the USFWS has concurred.

Table 2. ESA Determination Summary

Species	Effect Determination	Critical Habitat Determination
Gray Wolf	No Effect	-----
Grizzly Bear	No Effect	-----
Canada Lynx	No Effect	No effect
Kootenai River White Sturgeon	No Effect	No effect
Bull Trout	Not likely to adversely affect	No Effect

4.2. Elements of the Built Environment

4.2.1. Land and Shoreline Use

As this project proposed to rehabilitate an existing levee, there should be no observable effect to land and shoreline use or character from this project. No significant effects are anticipated.

4.2.2. Socioeconomics and Aesthetics

Minor disruptions to surrounding aesthetics may be perceived during construction due to movement of vehicles and trucks but no short-term or long term impacts are anticipated. Following construction, the site will look as it did pre-flood and will not affect the socioeconomic outlook of surrounding communities. The proposed project will have no significant affects to existing Socioeconomic or Aesthetic values.

4.2.3. Cultural Resources

The Corps determined that the undertaking would result in “No Historic Properties Affected” and received concurrence from the Montana State Historic Preservation Officer on 19 June 2008. Standard supplementary construction data clauses instructing the construction contractor and Corps construction representative what to do in the extremely unlikely event human remains or undisturbed archaeological deposits are encountered will be inserted into the plans and specifications and construction contract. No further work to identify historic properties is recommended and no construction monitoring of construction activities by a professional archaeologist is recommended. No impacts to cultural resources are anticipated.

4.2.4. Native American Issues

There will be no harmful effects to Native American issues or interests from this project. The Corps coordinated habitat and cultural resource issues with local Tribes and continues to coordinate on tribal issues. No significant affects are anticipated.

4.2.5. Recreation

Recreational foot traffic would not be impeded by project construction. However, opportunities to utilize the site for passive recreation may be reduced temporarily during construction. The presence of asbestos containing materials within the lower reaches of Big Cherry Creek is a disincentive to human recreation. No significant affects are anticipated.

4.2.6. Noise and Air Quality

Noise and air quality impacts in the immediate area of the construction may occur but would be minor, temporary and consistent with previous actions at the project site. Noise and air quality disturbances from the construction, primarily from construction equipment, would not occur at levels considered a significant impact to fish and wildlife resources. The construction noise and air quality disturbances would not cause direct mortality, latent mortality or other physiological damage. No significant affects are anticipated.

During construction, there would be a temporary and localized reduction in air quality due to emissions from earthmoving equipment and dump trucks operating during soil excavation and disposal activities. These emissions would not exceed EPA’s de minimis threshold levels (100 tons/year for carbon monoxide and 50 tons/year for ozone) or affect the implementation of Washington’s Clean Air Act implementation plan. Significant impacts are not anticipated.

4.2.7. Environmental Health/ Hazardous and Toxic Waste

Vermiculite and asbestos contaminated rock is known to be present within the footprint of the proposed project. This material is proposed for removal by the EPA following additional surveys to locate contaminated material but it is possible that the material would not be fully removed prior to construction. Human health concerns from asbestos stem from disturbance of contaminated rocks and subsequent release of friable asbestos fibers which then are breathed and can cause respiratory illness. Currently, the proposed project is most likely to encounter contaminated material at the downstream most 50 foot section of levee rehabilitation but could occur at all three sites. The EPA intends to remediate the Granite Creek site prior to construction. If this remediation does not occur or if residual material is found on site during construction the Corps would work directly with EPA during construction to control exposure.

Construction of the proposed project will be focused on protecting worker health and safety. The Corps has coordinated directly with EPA to obtain initial guidance and establish training and response procedures to identify asbestos containment methods and remediate exposure hazards during construction. The Corps will obtain results from the EPA surveys to better understand areas of potential contamination and follow any remediation action. If contamination is uncovered during the levee rehabilitation, the Corps would not move the material but instead contact EPA to direct further action. Human visitation and presence at the site will also be controlled to avoid exposure. Given these conditions, it is expected that impacts to the environment and human health as a result of this project would remain controlled and insignificant. No significant affects are anticipated.

5. Cumulative and Indirect Effects

The NEPA defines cumulative effects 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 in the project vicinity, regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR §1508.7).

Past activities at the project site and surrounding areas of Big Cherry Creek include timber harvest, agricultural conversion, vegetative maintenance and human settlement. These activities resulted in the loss and/or degradation of upland forests, riparian forests and wetlands as well as disconnecting areas from the active flood plain. This resulted in loss of habitats for resident and migratory fish and wildlife species, especially salmonids. In addition, upland forestry practices also resulted in dramatic changes to river sedimentation and hydrologic processes. The most dramatic changes in habitat quality and function likely occurred during the early parts of the 20th century. The trend of habitat loss and conversion continued at a less accelerated rate throughout the remainder of the 20th century and to present day. Current habitat and water quality impacts are generally localized and small in scale, with an overall stable trend though accelerated human growth needs in the area may alter the trend in the near future. The future trend is partially offset by improved forestry, land use practices, flood protection strategies as well as habitat restoration projects, in localized areas.

Timber and agricultural practices will likely continue to occur throughout the Big Cherry Creek basin in the foreseeable future, consistent with current practices. There are no known developments proposed for the immediate area, although there may be increased need for erosion control at this site and elsewhere as human activities increase on adjacent lands. Future development may be influenced from improved knowledge of river systems and processes and reduce reliance upon flood control projects elsewhere in the basin.

The current project is located in converted timber land, which would not result in additional riparian forest losses. The project would continue to constrain active flood plain migration within the affected reach. Impact avoidance and reduction efforts would further reduce the extent of short and long term effects.

The proposed project would not result in an additional loss of active floodplain area. Floodplain connectivity at the project site has been precluded by previous levee construction projects. When evaluated in the context of past, present, and reasonably foreseeable actions, the proposed project would not result in significant cumulative effects to Big Cherry Creek.

Indirect effects are effects to the human and ecological environment that are incidental to the proposed project and not as a direct effect of construction or maintenance. Indirect effects from the proposed project are restricted to a loss of recreational use along the levee.

6. Effects Summary

6.1. Avoidance and Minimization.

Adverse impacts are avoided by constructing the proposed project during established in-water work windows and using appropriately sized equipment and materials. Efficient work scheduling will reduce the length of construction and associated disturbances. Potential adverse impacts can also be minimized using on-site methods. Construction best management practices (BMPs) as suggested by the Montana State Department of Ecology during previous rehabilitations and flood fights would be included during the construction to minimize potential impacts. See Table 3.

Table 3. BMPs Implemented During Construction

1. Equipment used near the water would be cleaned prior to construction.
2. Work would be conducted during a period of low flow.
3. Biodegradable hydraulic fluids would be used in machinery where appropriate.
4. Refueling would occur on the backside of the levee.
5. Construction equipment shall be regularly checked for drips or leaks.
6. At least one fuel spill kit with absorbent pads would be onsite at all times.

7. Drive trains of equipment would not operate in the water.
8. At least one biologist would remain available for oversight during construction.
9. Water quality would be monitored during construction.

6.2. Unavoidable Effects.

Potential unavoidable adverse effects associated with this project include:

- (1) minor temporary increases in river turbidity,
- (2) temporary dislocation of resident fish to other parts of the river channel
- (3) temporary and localized increase in noise, which may disrupt wildlife in the area, as well as causing some disturbance to local residents,
- (4) temporary and localized disruption of, and increase in, local traffic by construction vehicles
- (5) minor temporal loss of wildlife/fish habitat due to removal of vegetation within the footprint of the repair.

7. Legal, Policy, Regulatory Constraints/Compliance and Relationship to other Plans

Compliance with the following laws and regulations are required for the proposed action:

Table 4. Environmental Compliance Summary

Law/Policy/Regulation- Federal Acts	Compliance Action
1. American Indian Religious Freedom Act	Satisfied- No effect. See Section 7.1.1 of this document.
2. Bald and Golden Eagle Protection Act	Satisfied- Determination of no harm. See Section 7.1.2 of this document.
3. Clean Air Act (PI 91-604)	See Section 4.2.6 and 7.1.3 of this document.
4. Endangered Species Act (Sec 7)	Consultation completed 25 April 2008. See Section 4.1.7 of this document.
5. Federal Water Pollution Control Act (§ 401 & 404)	Exempt per section 404(f)(1)(B) of the Clean Water Act. Emergency reconstruction of recently damaged parts, of currently serviceable structures such as levees (33CFR 323.4)
6. Federal Water Project Recreation Act	Satisfied- No effect
7. National Environmental Policy Act	Satisfied: FONSI signed following public review and consolidation of comments received on draft EA.
8. Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001)	Consultation Initiated- Coordination with affected tribes in process. No significant concerns identified. See Section 4.2.4 of

	this document.
9. National Historic Preservation Act (16 USC 470)	Concurrence with SHPO received. No significant concerns identified. See Section 4.2.3 of this document.
Law/Policy/Regulation- Other	Compliance Action
1. Executive Order 11990 Protection of Wetlands	No effect. No impacts to jurisdictional wetlands anticipated.
2. Executive Order (E.O.) 11988 Flood Plain Management	Satisfied – no additional damage to or building within the floodplain will occur
3. E.O. 12898 Environmental Justice in Minority populations	Satisfied –coordination with local Tribe initiated and ongoing throughout project. Project not a permanent facility requiring a siting study.
4. Executive Order 13007, Native American Sacred Sites, May 24, 1996	Consultation Initiated- coordination with affected tribes in process. See Section 4.2.3 of this document.

7.1. Federal Statutes

7.1.1. American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 (AIRFA) (42 U.S.C. 1996) establishes protection and preservation of Native Americans’ rights of freedom of belief, expression, and exercise of traditional religions. Courts have interpreted AIRFA to mean that public officials must consider Native Americans’ interests before undertaking actions that might impact their religious practices, including impact on sacred sites.

No alternative is expected to have any effect upon Native Americans’ rights of freedom of belief, expression, and exercise of traditional religions. There are no known cultural resources, or any sacred sites, at the project locations.

7.1.2. Bald and Golden Eagle Protection Act

The BGEPA (16 U.S.C. 668-668d) prohibits the taking, possession or commerce of bald and golden eagles, except under certain circumstances. Amendments in 1972 added to penalties for violations of the act or related regulations.

No take of either bald or golden eagles is likely through any of the actions discussed in this EA; since there are no known nests near any of the work locations.

7.1.3. Clean Air Act

The Clean Air Act (CAA) (42 U.S.C. 7401 et seq.), amended in 1977 and 1990, was established “to protect and enhance the quality of the nation’s air resources so as to promote public health and welfare and the productive capacity of its population.” The CAA authorizes the EPA to establish the National Ambient Air Quality Standards to protect public health and the environment. The CAA establishes emission standards for stationary sources, volatile organic compound emissions, hazardous air pollutants, and vehicles and other mobile sources. The CAA also requires the states to develop implementation plans applicable to particular industrial sources.

This EA analyzes effects on air quality from the two alternatives; effects would be minimal, and the proposed project is exempted from the conformity requirements of the CAA because of the de minimus levels of emissions.

7.1.4. Endangered Species Act

The ESA (16 U.S.C. 1531-1544) establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the habitat upon which they depend. Section 7(a) of the ESA requires that Federal agencies consult with the USFWS and NOAA Fisheries, as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or to adversely modify or destroy their critical habitats.

The EA, and embedded language on effects determinations concerning species listed or proposed for listing under the Endangered Species Act, addresses effects on those species and their critical habitat. Coordination with the US Fish and Wildlife Service was initiated through the submission of a Biological Assessment on 24 March 2008.

Consultation under ESA was completed on 25 April 2008 with receipt of a letter of concurrence on the effects determinations for Callahan Creek. The Corps will continue to work with USFWS at the time of construction to ensure project features and impacts are consistent with the impacts described.

7.1.5. Federal Water Pollution Control Act

The Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) is more commonly referred to as the Clean Water Act (CWA). This act is the primary legislative vehicle for Federal water pollution control programs and the basic structure for regulating discharges of pollutants into waters of the United States. The CWA was established to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” The CWA sets goals to eliminate discharges of pollutants into navigable waters, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment.

This EA evaluates possible impacts to water quality, primarily with respect to suspended solids, turbidity and temperature. There are no other water quality effects anticipated. The project is exempt per Section 404(f)(1)(B) of the Clean Water Act, which allows for emergency reconstruction of recently damaged parts of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. For each of the seven rehabilitation sites, the proposed work will not result in changes to the character, scope, or size of the original fill design and occurs within a reasonable period of time after damage occurred. During the April 2008 site visit, the Corps concluded that no jurisdictional wetlands are present along the riverward toe, face, or top of the respective levees, and no wetlands will thus be impacted as a result of this project. Because no work subject to Section 404 regulation is being conducted, a Section 401 certification is not required.

7.1.6. Federal Water Project Recreation Act

In the planning of any Federal navigation, flood control, reclamation, or water resources project, the Federal Water Project Recreation Act, as amended (16 U.S.C. 460(l)(12) et seq.) requires that full consideration be given to the opportunities that the project affords for outdoor recreation and fish and wildlife enhancement. The Act requires planning with respect to development of recreation potential. Projects must be constructed, maintained, and operated in such a manner if recreational opportunities are consistent with the purpose of the project.

This EA assesses impacts of alternative actions on recreation, but the proposed actions are not intended to provide recreational benefits. The EA also addresses effects on fish and wildlife, and the preferred alternative is not likely to adversely affect threatened and endangered fish species, nor should it negatively impact other fish species.

7.1.7. Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), (16 U.S.C. 1801 et. seq.) requires Federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). The objective of an EFH assessment is to determine whether or not the proposed action(s) “may adversely affect” designated EFH for relevant commercial, federally-managed fisheries species within the proposed action area. The assessment also describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed action. The project area, located in a portion of the Columbia River basin that is several hundred miles upstream of accessible habitat for Pacific salmon or other anadromous fish, and is not within EFH for any fish.

7.1.8. National Environmental Policy Act

The NEPA (42 U.S.C. 4321 et seq.) provides a commitment that Federal agencies will consider the environmental effects of their actions. It also requires that an EIS be included in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. The EIS must provide detailed information regarding the proposed action and alternatives, the environmental impacts of the alternatives, appropriate mitigation measures, and any adverse environmental impacts that cannot be avoided if the proposal is implemented. Agencies are required to demonstrate that these factors have been considered by decision makers prior to undertaking actions. Major Federal actions determined not to have a significant effect on the quality of the human environment are evaluated through an EA. This EA has been undertaken to satisfy the requirements of NEPA.

7.1.9. Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001) addresses processes and requirements for federal agencies regarding the discovery, identification, treatment, and repatriation of Native American and Native Hawaiian human remains and cultural items (associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony). Consistent with procedures set forth in applicable Federal laws, regulations, and policies, the Corps will proactively

work to preserve and protect natural and cultural resources, and establish NAGPRA protocols and procedures.

No evidence of Native American graves, human remains or associated cultural items are known or anticipated in the project area.

7.1.10. National Historic Preservation Act

Section 106 of the NHPA (16 U.S.C. 470) requires that Federal agencies evaluate the effects of Federal undertakings on historical, archeological, and cultural resources and afford the Advisory Council on Historic Preservation opportunities to comment on the proposed undertaking. The lead agency must examine whether feasible alternatives exist that would avoid eligible cultural resources. If an effect cannot reasonably be avoided, measures must be taken to minimize or mitigate potential adverse effects.

In accordance with Section 106 of the NHPA, the Corps has prepared a Section 106 compliance report and submitted it to the Montana State Historic Preservation Office (SHPO), and affected tribes for their review. The Montana SHPO concurred with the Corps findings of “No Historic Properties Affected” in a letter dated 19 June 2008. No cultural resources have been identified in the project area, and no archaeological monitoring is recommended at any of the repair sites.

If, during construction activities, the Corps’ contractor observes items that might have historical or archeological value, such observations shall be reported immediately to the Corps construction supervisor so that the appropriate authorities may be notified and a determination can be made as to their significance and what, if any, special disposition of the finds should be made. The contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such resources.

7.2. Executive Orders

7.2.1. Executive Order 11990, Protection of Wetlands

Executive Order 11990 encourages Federal agencies to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands when undertaking Federal activities and programs.

No wetlands would be destroyed, lost, or degraded by the proposed action.

7.2.2. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898, dated February 11, 1994, requires Federal agencies to consider and address environmental justice by identifying and assessing whether agency actions may have disproportionately high and adverse human health or environmental effects on minority or low-income populations. Disproportionately high and adverse effects are those effects that are predominantly borne by minority and/or low-income populations

and are appreciably more severe or greater in magnitude than the effects on non-minority or non-low income populations.

Based on the census data and preliminary survey of adjacent property uses during the April 2008 site visit, it does not appear that the proposed project is located in an area occupied by minority or at risk populations at levels disproportionate to those at the state level. Adverse conditions produced by the proposed project are generally related to slightly notable degradations in noise, air and discharges of water that would not be adverse to human health. No permanent structures are proposed that have the potential to produce long-term noise, air or water quality impacts to humans. The proposed project does not require a siting study to ensure proper location of the levee within the community. This EA has satisfied its requirement to consider environmental justice effects of the alternatives evaluated.

7.2.3. Executive Order 13007, Native American Sacred Sites, May 24, 1996
Executive Order 13007 directs Federal agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners. Agencies are to avoid adversely affecting the physical integrity of such sacred sites and to maintain the confidentiality of sacred sites when appropriate. The act encourages government-to-government consultation with tribes concerning sacred sites. Some sacred sites may qualify as historic properties under the NHPA.

No sacred sites in the project area have been previously reported; however, the Corps sent letters to the Kootenai Tribe and Confederated Salish/Kootenai Tribe on 19 February 2008 soliciting any knowledge or concerns or religious significance for the APEs.

8. Coordination and Comments

A copy of the Project Information Report (PIR) and draft EA was provided to the following agencies, Tribes and the interested public for public review and comment:

- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- City of Troy
- Montana Department of Fish, Wildlife and Parks
- Montana Department of Environmental Quality
- Kootenai Tribe
- Confederated Salish/Kootenai Tribe
- U.S. Army Corps of Engineers- Omaha District

During the planning and design of this project, the Corps coordinated with various state, federal, Tribal, and local agencies to discuss design alternatives and potential impacts to the project vicinity. The final PIR was submitted to several agencies for comment. In April of 2008, a draft EA was transmitted to affected entities and cities for review and comment. No substantive comments were received on the draft EA. Telephone contacts were made to the USFWS, affected tribes, the State of Montana, EPA and local

municipalities to solicit comments. A site visit was conducted on 9 April 2008 to confirm site conditions and obtain additional agency comment. Representatives from the USFWS, Montana DEQ, EPA and USACE attended.

This document serves the public coordination mandates under NEPA. Public comments received on this document have been solicited and incorporated as appropriate. Current agency contacts are listed in Table 5.

Table 5. Project Coordination Contact List

Agency	Contact	Title
Montana Fish, Wildlife and Parks	Mike Hensler	Habitat Biologist
US Fish and Wildlife Service (USFWS)	Tim Bodurtha	Supervisory Biologist
EPA	Mike Cirian	Project Manager
Kootenai Tribe of Indians	Sue Ireland	Natural Resources Manager
Confederated Salish-Kootenai Tribe	Lynn DuCharme	Natural Resources Manager
Montana Dept of Environmental Quality	Cathy LeCrous	Biologist
US Army Corps of Engineers (NWO)	Allen Steinle	Environmental Protection Specialist

9. Conclusion

Based on the above analysis, the proposed 2008 Granite Creek Levee Rehabilitation Project is not a major Federal action significantly affecting the quality of the human environment and therefore does not require preparation of an environmental impact statement.

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APPENDIX A

Project Vicinity Map

APPENDIX B

Project Drawings

APPENDIX C

Project Photos



Source: USACE 2007

Photo 1. Upstream erosion of toe and levee.



Source: USACE 2007

Photo 2. Middle segment with minor toe erosion and settlement



Source: USACE 2007

Photo 3. Lower section showing steepened toe and proximity of river to levee.

APPENDIX D

Concurrence Letters



United States Department of the Interior

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HELENA, MONTANA 59601
PHONE (406) 449-5225, FAX (406) 449-5339

M.06 (COE) Big Cherry Creek Levee Rehabilitation April 25, 2008

Mr. Ronald Kent
Environmental Resources Section
Department of the Army
Corps of Engineers, Seattle District
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Mr. Kent:

This is in response to your March 24, 2008, request for correspondence regarding the biological evaluation (BE) for the rehabilitation of the Big Cherry Creek flood control structure near Libby, Montana. The U.S. Fish and Wildlife Service (Service) received your request and the accompanying BE on March 31, 2008.

The Service has reviewed your BE and concurs with your determinations that the proposed project "may affect, but will not likely adversely affect" bull trout (*Salvelinus confluentus*) provided that the conservation measures to minimize impacts to listed species identified as part of the proposed action are implemented (e.g., timing restrictions, BMPs, etc). Our concurrence is based, in part, on information and analysis in the project's BE and on informal consultation discussions with your staff. In addition, we attended an on-site visit with your staff on April 9, 2008.

The project site has already undergone significant modifications due to the highway overpass and initial levee installation. This has resulted in a more simplified stream channel that no longer provides bank edge habitat or woody debris contribution for bull trout and other aquatic species. In addition, at high stream flows, or lower flows where the thalweg is adjacent to the levee walls, there is likely increased stream velocity above natural conditions. Therefore, wherever possible we recommend implementing soft armoring and bioengineered stream-bank protection techniques and adding design elements that will increase stream channel complexity (e.g., rock vanes, anchored logs and root wads, etc.) thereby improving habitat conditions in the affected reaches.

This concludes section 7 consultation on the proposal unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered. In addition, if the final project design is changed so as to have effects on threatened or endangered species, a revised evaluation may be required. We value the dialogue between our offices that seeks to minimize impacts to listed species and aid their recovery. If you have further questions about this

letter or your responsibilities under the Endangered Species Act, please contact Tim Bodurtha at 406-758-6882 or Lowell Whitney at 406-758-6871.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Mark Wilson", written over a horizontal line.

Just R. Mark Wilson

Copy to: USFWS, Kalispell, MT (Attn: Tim Bodurtha)



DEPARTMENT OF THE ARMY
 SEATTLE DISTRICT, CORPS OF ENGINEERS
 P.O. BOX 3755
 SEATTLE, WASHINGTON 98124-3755

REPLY TO
 ATTENTION OF

**CONCUR
 MONTANA SHPO**

MAY 22 2008

Environmental Resources Section

DATE 4/24/08 SIGNED [Signature]

Dr. Stan Wilmoth
 State Archaeologist
 Montana Historical Society
 Post Office Box 201201
 Helena, Montana 59620-1201

RECEIVED
 BY: [Signature]

Joseph
 2008 / 12
 Levee - [unclear]
 [unclear] - [unclear]
 Granite Creek
 E. of Libby
 [unclear]

Dear Dr. Wilmoth:

The U.S. Army Corps of Engineers, Seattle District (Corps) has been requested to repair existing flood control structures (levees) along Callahan Creek in the city of Troy, Lincoln County, Montana and the Granite Creek levee along Big Cherry Creek south and east of Libby, Lincoln County, Montana. We have:

- determined that these projects have the potential to affect historic properties and are undertakings;
- delineated the Area of Potential Effects (APE) for the undertakings;
- sought information about the undertakings and APE from the Montana Historical Society and the concerned Indian tribe;
- inventoried the APE to assess the undertaking's effects on historic properties;
- prepared a report of investigations; and
- determined the undertakings will result in No Historic Properties Affected.

A copy of the draft final report is included for your consideration, review and comment, and records (enclosure). We would appreciate your comments on the report and/or concurrence with our determination at your earliest convenience.

If you have any questions about our request, please feel free to contact me by telephone at 206-764-3620, by fax at (206) 764-4470 or by e-mail at ronald.j.kent@usace.army.mil.

Enclosure

Sincerely,

[Signature]

Ronald J. Kent, Acting Chief
 Environmental Resources Section

A copy of this correspondence with enclosure is being sent to:

Ms. Clarinda Burke
Acting Director
Tribal Preservation Office
Confederated Salish and Kootenai Tribes of
the Flathead Reservation
Post Office Box 278
Pablo, Montana 59855-0278

APPENDIX E

Public Comments on Draft EA

1. USFWS – Telephone Conversation 5 May 2008. Mr Lowell Whitney requested that impact descriptions between the ESA biological evaluation and the NEPA EA be consistent.

Response: Editorial changes were made in the EA to remove inconsistent descriptions of vegetation impacts. This was done to align impact determinations between the two documents.

No other comments follow.

APPENDIX F

Finding of No Significant Impact



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Environmental Resources Section

2008 Granite Creek Levee Rehabilitation Lincoln County, Montana

FINDING OF NO SIGNIFICANT IMPACT

1. Background. The Seattle District, U. S. Army Corps of Engineers, plans to rehabilitate the Granite Creek levee (on Big Cherry Creek) outside the City of Libby, Montana. During November 2006, rainfall and snowmelt resulted in a flood event on Big Cherry Creek. The estimated flood peak was between approximately 950 and 3,000 cubic feet per second. The flood peak corresponds to a return interval between 50 and 100-year event. The levee was not overtopped. There is currently 350 linear feet of levee without sufficient toe material to provide an equivalent pre-flood level of protection. The levee is constructed of earthen materials. The riverward slope is armored with Class IV riprap with a 3-foot thick riprap blanket consistent with the repairs outlined for the 1996 repair. The existing levee prism has a riverward slope of approximately 2.5H:1V (horizontal to vertical) and a slope of 3H:1V on the landward side. The toe of the levee is approximately 15 feet in width by 5 feet in height. The top width ranges from 15 to 20 feet and includes a 20-foot wide gravel access road.

2. Proposed Action. The repair as described in the preferred alternative is to repair three discontinuous sections totaling 350 linear feet of the Granite Creek levee to its pre-flood condition. The recommended plan consists of reestablishing a weighted toe and replacing lost armor rock where required.

3. Impacts Summary. The attached environmental assessment provides an evaluation of the potential environmental impact as a result of repairing the Granite Creek levee. Impacts from the rehabilitation action are minor and temporary in nature. Specifically, minor vegetation loss will occur in the placement of new toe and levee rock. The levee prism being rehabilitated is not considered high quality spawning habitat or a special aquatic site. Temporary impacts are expected from noise disturbance created by use of machinery. Air quality impacts will be de minimus. The work will occur within the established fish window ensuring minimal fish impacts. The Corps has received concurrence from the U.S. Fish and Wildlife Service (25 April 2008) on a finding of No Effect, May Affect, Not Likely to Adversely Effect for threatened and endangered species in the area. The EPA has been closely coordinated with to ensure remediation is completed for onsite contaminated materials and will not result in human health impacts at the time of construction. The Corps coordinated the necessary cultural resources investigations and compliance with the Kootenai Tribe, Confederated Salish/Kootenai Tribe, and the Montana State Historic Preservation Officer. Montana SHPO concurrence with the Corps

determination was recorded in by letter dated 19 June 2008. No wetlands will be filled or impacted during the rehabilitation of the levee.

The proposed action constitutes repair of existing structures, within their original footprints. Under Section 404(f)(1)(B), the Corps' emergency reconstruction of recently damaged parts of levees does not require a Clean Water Act Section 404 evaluation, provided that the work is conducted for maintenance purposes. Analogizing to 33 Code of Federal Regulations section 323.4(a)(2), rehabilitation may not include any modification that changes the character, scope, or size of the original fill design in a manner that affects waters of the U.S.. Concerning scope and size, the proposed repairs that falls within waters of the Unites States is no larger than the pre-damage footprint. All work on these projects will be conducted outside the limits of Section 404; or will result in restoration of the pre-existing levee profile, will remain within the existing footprint, and will be conducted with the same character and materials. Since the application of the Section 404 is not required, a Section 401 water quality certification from the Department of Environmental Quality is not required.

4. Conclusion. I have determined that the proposed action is in accordance with the environmental documentation, and that planning for this project complies with all applicable laws, regulations, and agency consultations, including the Clean Water Act, Endangered Species Act, and National Environmental Policy Act. Based on the analysis described above and provided in more detail in the accompanying Environmental Assessment, this project is not a major Federal action significantly affecting the quality of human environment, and therefore, does not require preparation of an environmental impact statement.

Date 15 July 2008

/S/
Michael McCormick, Colonel
Corps of Engineers Commanding

APPENDIX G

Authors and Contributors

Primary Author: Jeffrey F. Dillon, Environmental Resources Section, Seattle District, U.S. Army Corps of Engineers

Contributors: Charles Ifft, Emergency Management Branch, Seattle District, U.S. Army Corps of Engineers

David Grant, Environmental Resources Section, Seattle District, U.S. Army Corps of Engineers