BIOLOGICAL ASSESSMENT FOR THE MONTANA DEPARTMENT OF TRANSPORTATION AND THE FEDERAL HIGHWAY ADMINISTRATION

BR 82-1(5)5; UPN: 6850000

FLATHEAD RIVER – 3 M NW BIG FORK

REVISION 1 TOPICAL REPORT RSI-3208

PREPARED FOR
Montana Department of Transportation
2701 Prospect Avenue
Helena, Montana 59620

APRIL 2022

RESPEC

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Project Number 3864

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1.0 INTRODUCTION

This Biological Assessment (BA) addresses the proposed action in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended.

1.1 FEDERAL NEXUS

Section 7 of the ESA requires that, through consultation (or conferencing for proposed species) with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS), federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat. This proposed bridge replacement project will be completed with federal funds. Federal permitting through Section 404 of the Clean Water Act will also be required for this project.

1.2 PROJECT DESCRIPTION AND LOCATION

The proposed Flathead River – 3 M NW Bigfork project is located on Montana Primary Highway 82 (MT 82) and begins approximately 3 miles northwest of Bigfork. The existing bridge across the Flathead River (Structure Number P00082005+05831; known as Sportsman's Bridge) is located at approximately Reference Post (RP) 5.58 and the project limits extend from RP 5.00 to RP 6.42. The proposed project will replace the existing two-lane bridge with a new two-lane bridge on a new alignment that will be located slightly downstream from the existing structure. Built in 1955, the existing bridge is structurally deficient based on deck condition, deck width, and Average Daily Traffic requirements. The structure also ranks high for seismic retrofit because the bridge is a fracture critical, two-girder system. Based on these conditions, the Montana Department of Transportation (MDT) Bridge Bureau has determined that the bridge is functionally obsolete and needs to be replaced. The proposed project will occur in Sections 22 and 23 of Township 27 North, Range 20 West, as shown in Figure 1-1.

Work associated with this project includes construction of new roadway approaches to the bridge, horizontal and vertical alignment shifts, new asphalt surfacing, drainage, gravel, pavement markings, and signing. The proposed project will also include developing a multi-use path over the bridge's length and limited measures to enhance recreational uses in the area. This project is currently proposed for letting in December 2022.

Flathead County and Montana Fish, Wildlife, and Parks (FWP) have requested that a multi-use path be included with the proposed project as part of Flathead County's master trail plan. A 10-foot-wide path will be provided along the north side of the bridge and will taper into the roadway shoulder beyond the guardrail runs at each end of the bridge. A popular FWP Fishing Access Site (FAS) is located immediately south of the existing bridge on the east side of the Flathead River. The FAS will be reconfigured with this project to accommodate shifting the roadway alignment and to mitigate the resulting Section 4f impacts to the FWP property.

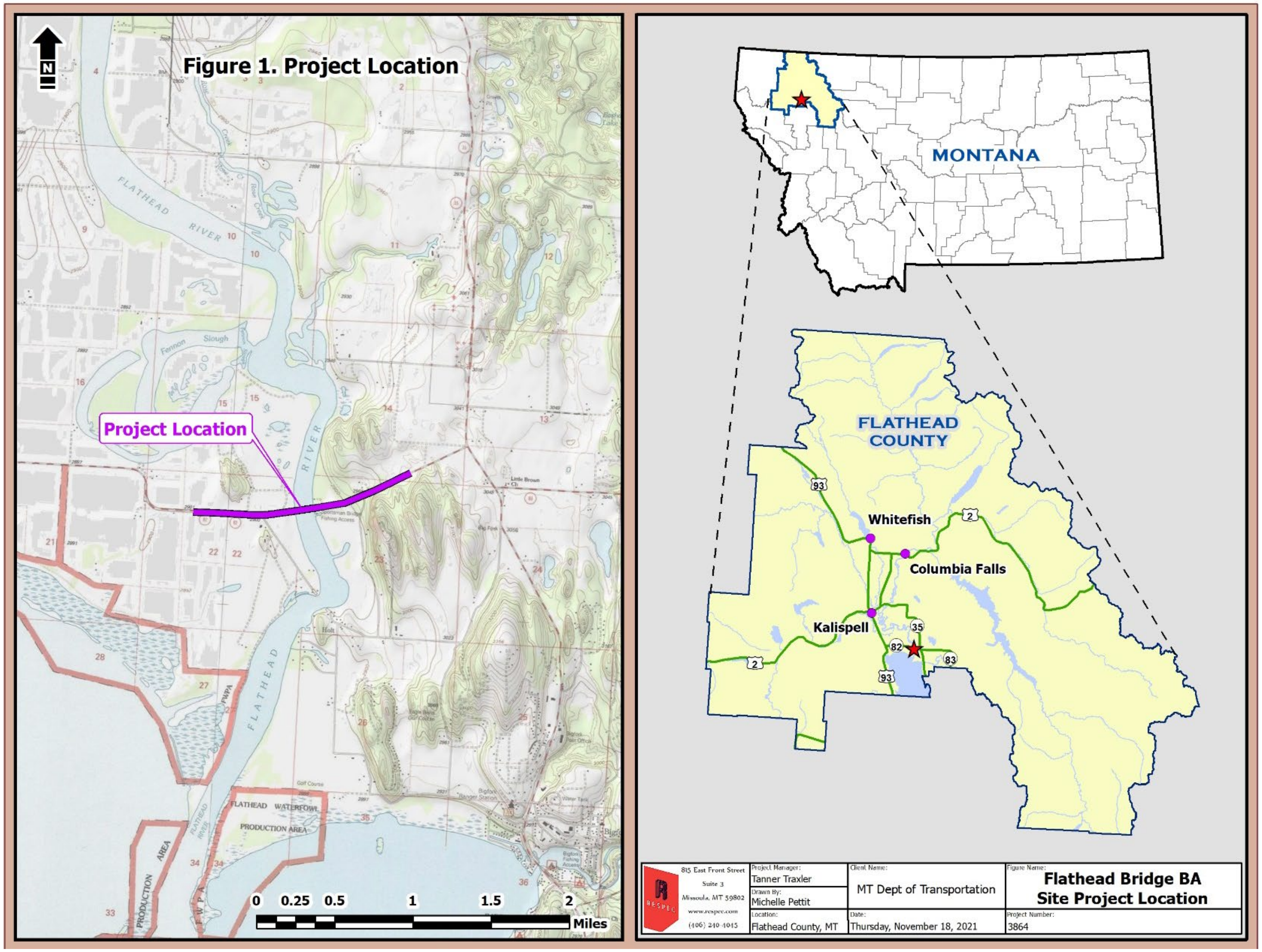

Figure 1-1. Project Location.

1.3 PROPOSED ACTION

The proposed bridge over the Flathead River will be a four-span, 706-foot-long structure with end abutments supported by driven piles and by clusters of 3-foot-diameter stone columns spaced at 5 feet on center. The concrete deck will be installed approximately 57 feet to the south of the existing alignment and supported by three sets of driven pile piers. Driven pile piers were selected over drilled shafts for several reasons, such as the cost, constructability in deep water with unstable soils and high seismic loading, and high degree of construction risk associated with drilled shafts. A preliminary design layout of the proposed bridge is found in Appendix A.

The total deck width will be approximately 54 feet and include two 12-foot-wide driving lanes, two 10-foot-wide shoulders, and a 10-foot-wide shared-use path. Cast-in-place concrete barrier rails and pedestrian rails will be used. The present bridge has a 28-foot deck width that provides two 12-foot-wide driving lanes with no shoulders. Stormwater flows that occur on the surface of the bridge deck will be conveyed to the west abutment where these flows will be discharged onto the north and south embankment protectors. This process will allow sediment and other pollutants to filter out before the water enters the Flathead River. Approximately 0.60 miles of approach roadway work would be required on the west side of the bridge and 0.70 miles on the east side.

Because the new bridge will be constructed downstream of the existing structure, the existing bridge will remain in service and carry traffic during construction, thus eliminating the need for a temporary detour bridge. After construction, traffic will be routed to the new structure and the existing bridge will be removed. A temporary work bridge may be required during construction depending on specific techniques chosen by the contractor. The temporary structure would likely be built of driven steel pile bents and would have a wood deck. Whether the temporary structure would span the entire river or if the contractor would build one half at a time is currently unknown. To provide a safe passageway for boaters on the river, the contractor may be required to leave one half of the river open at all times during the floating season (May through September).

Removal of the existing bridge will occur after the new bridge is complete and operational. Bridge deck removal typically occurs initially and is followed by removal of the super structure pieces and then the in-stream piers. The removal method is unknown at this time, but special precautions will be taken to prevent bridge materials from entering the river. Most large pieces of concrete or steel that enters the river will be lifted from the river rather than dragged out. Based on preliminary agreements between the MDT and various resource agencies, the existing in-stream piers (spread footings) will be removed to a depth of 10 feet below the low-water surface elevation. A majority of the large spread footings will remain beneath the streambed after demolition to avoid major disturbance to the streambed and associated natural resources. Disturbed streambanks and the streambanks immediately adjacent to the new bridge will be stabilized and revegetated. Riprap aprons will be used to protect the end abutments of the new bridge.

Shifting the bridge alignment to the south will impact the Sportsman's Bridge FAS located on the east bank of the Flathead River. To mitigate Section 4f impacts, the project will build a new FAS south of the existing FAS and consist of 28 truck/trailer and 8 standard vehicle parking stalls. Two handicap stalls will be located next to the relocated pit toilet. The access road and facilities associated with the FAS will be relocated with this project. Access to the FAS will be off Hanging Rock Drive. The relocated access road and new FAS will be constructed before the construction of the new bridge to maintain access to the Flathead River during bridge construction. Turn lanes will be added at the intersection of Hanging Rock Drive and MT 82 to improve safety for left- and right-hand turns off the highway at the intersection. The existing boat ramp associated with the FAS will be relocated downstream of the existing ramp and will encroach into the Flathead River.

1.3.1 CONSERVATION MEASURES

The following conservation measures and construction Best Management Practices (BMPs) will be implemented for the project:

- To minimize the risk of barotraumas and fish mortality from driving piles for construction of the new bridge and any temporary work bridges, both on dry land and in water:
  - Limit the periods of impact pile driving to no more than 12 hours per day, except in rare circumstances when safety issues require the work to be completed that day. The Project Manager must be notified and approve pile driving that exceeds 12 hours per day.
  - Conduct hydroacoustic monitoring. Through hydroacoustic monitoring, it is possible that the physical harm thresholds of the peak sound pressure level (SPL) of 206 decibels (dB) (re: 1 micropascal [μPa]) or the cumulative sound exposure level (SEL) of 187 dB (re: 1 μPa) may be attained or exceeded during the calibration exercise. The calibration period will be limited in duration with the purpose of obtaining a representative sample of piles (e.g., size and materials) and locations to ensure that the appropriate sound information is collected for use in the National Marine Fisheries Service Calculator Tool. In combination with hydroacoustic monitoring, use one of the following measures:
    - Use a vibratory hammer to drive piles to a point where an impact hammer will be required to drive the pile to the point of completion OR;
    - For production pile driving, use a “soft start” or “ramp up” pile driving method (e.g., driving does not begin at 100 percent energy) to encourage fish to vacate the surrounding area. Use the information collected during the hydroacoustic monitoring calibration and the National Marine Fisheries Service Calculator Tool to determine how many pile strikes can occur during a day, based on pile type and size, before reaching the cumulative SEL threshold of 187 dB. Once the number of strikes has been attained, impact pile driving must be stopped for the day. If pile driving outside the stated work timeframes with an impact hammer over consecutive days, either do not drive piling between the hours of 9:00 p.m. and 6:00 a.m. OR;
    - Use MDT-approved noise reduction methods, such as those offered in Leslie and Schwertner [2013] (e.g., bubble curtains).
- To the maximum extent possible, disassemble the existing bridge and remove without pieces being allowed to fall into the stream. If portions of the old bridge do fall into the stream during demolition, they will be removed from the stream without dragging the material along the streambed.
- Any blasting required during bridge pier removal will be contained to the maximum extent practicable by using a containment shielding device to attenuate the blast’s pressure wave within the water and prevent debris from entering the river. Meet all applicable requirements contained within the current MDT *Standard Specifications for Road and Bridge Construction,* Section 204 - Blasting.

- In-stream work conducted within the channel shall be kept to the minimum amount necessary, preferably during periods of low flow. This includes, but is not limited to, construction and removal of pilings for any temporary support structures that may be necessary. In-stream construction work shall be completed in the shortest amount of time possible.
- Visually monitor all dewatering activities, if any, to ensure bull trout are not trapped. In the unlikely event a live bull trout is found within a dewatering area, immediately return it to the river.
- The proposed project will be constructed in accordance with the applicable environmental standard specifications found in the current MDT *Standard Specifications for Road and Bridge Construction*. Standard specifications will include:
  - Section 208.03.1 – *Water Pollution Control*
    - The contractor will implement a spill prevention and waste disposal plan.
    - The contractor will implement appropriate erosion and sediment control measures. Includes installation of barriers (e.g., silt fencing, straw wattles) adjacent to waterways prior to any soil disturbance to prevent sediment from leaving the site.
    - The contractor will be responsible for conducting routine site monitoring to ensure all pollution control measures are installed, maintained, and functioning correctly.
  - Section 208.03.2 – *Aquatic Resource Protection*. The contractor will implement the general provisions of this standard specification that include:
    - Do not spill or dump material from equipment into regulated aquatic resources.
    - Do not discharge wastewater from washout of concrete related equipment, concrete finishing, saw cutting, wet concrete, hydraulic demolition, etc., into any regulated aquatic resource.
    - Locate staging or storage areas at least 50 feet (15.2 meters) horizontally from any aquatic resource, top of streambank, or the highest anticipated water level during the construction period, whichever is furthest from the resource.
    - Store and handle petroleum products, chemicals, cement, and other deleterious materials to prevent their entering regulated aquatic resources.
    - Provide sediment and erosion controls for topsoil stockpiles, staging areas, access roads, channel changes, and in-stream excavations.
    - Clean, maintain, and operate equipment so that petroleum-based products do not leak or spill into any regulated aquatic resource.
- The special provision entitled *Protection of Aquatic Resources and Threatened and Endangered Species* will be included in the final construction bid documents to avoid and minimize potential impacts to bull trout and bull trout critical habitat.
  - The special provision identifies aquatic resource locations and requires the construction contractor to prepare and submit an Aquatic Resource Protection Plan (ARPP) to MDT before construction that outlines procedures for implementing and maintaining BMPs. The ARPP will be reviewed by MDT and approved, with modifications as necessary, before construction.
- The special provision entitled *Conservation and Coordination Measures for Bull Trout* will be included in the final construction bid documents as an additional conservation measure to protect bull trout and bull trout critical habitat.

- Additional standard BMPs will be implemented with the project to include the following:
  - Minimizing the site disturbance to only the area absolutely necessary to complete the project.
    - Clearing and grubbing should not be allowed within the ROW beyond the construction limits or required clear zone. Any temporary clearing outside the construction limits (e.g., for culvert installation, etc.) but within the ROW should be kept to the smallest area possible and reclaimed immediately following construction.
  - Minimize impact on riparian vegetation fringing the project area and the Flathead River to the greatest extent practicable.
  - All excavated material that cannot be reused as backfill will be contained and hauled off site.
  - Stabilize exposed soils with a desirable native vegetation community as soon as feasible.

The following standard specifications are intended to avoid project impacts on migratory bird species:

- Section 208.03.4A, *Migratory Bird Treaty Act Compliance*, will be included in the final construction bid documents to avoid and minimize potential impacts on migratory birds resulting from any unforeseen requirement for vegetation removal. The standard specification includes the following construction requirements for vegetation removal and structures:
  - **Vegetation Removal**: Perform required cutting of trees or shrubs between August 16 and April 15, and when no active nests are present. Remove only those trees and shrubs in direct conflict with the permanent construction limits. Where possible, do not remove, but trim trees and shrubs as necessary for equipment access and construction activities.
  - **Structures:** Use one or a combination of the following measures for structure removal or work that may directly impact active nests:
    - a. It is permissible to remove non-active nests (without birds or eggs), partially completed nests, or new nests as they are built (prior to occupation).
    - b. Conduct work that may impact active nests outside of the nesting season, typically between the dates of August 16 and April 15, and when no active nests are present, or
    - c. Install nesting deterrents meeting the requirements below prior to the nesting season as follows:
      - i. Cover or enclose all potential nesting surfaces on the structure tightly with mesh netting or other suitable material to prevent birds from establishing new nests. Use netting or other material with no opening or mesh size greater than ½-inch. Maintain the material/enclosure until the structure is removed or work is completed, or
      - ii. Thoroughly apply a non-toxic, non-lethal bird roosting or landing repellent gel or liquid (do not use smell or taste deterrents) on all potential nesting surfaces on the structure in accordance with the manufacturer's instructions. Reapply the repellant as needed to maintain adequate coverage to prevent new nests from being established, or
      - iii. Prepare a description of alternate methods of effectively keeping birds from establishing nests during the nesting season and submit them along with proposed installation dates and methods to the Project Manager for review.

The following conservation measures are proposed to avoid project impacts on bears in general:

- Standard Specification 208.03.4E – *Work in Bear Habitat* applies to this project and additional language specific to Conservation Measures for Grizzly Bears will be included in the contract documents. The following requirements are included:
  - Promptly clean up any project related spills or debris.
  - Camping is allowed in designated camping areas only.
  - Store all food, food related items, petroleum products, antifreeze, garbage, and personal hygiene items inside a closed, hard-sided vehicle or commercially manufactured bear resistant container.
  - Remove garbage from the project site daily and dispose of it in accordance with all applicable regulations.

The following Special Provision will be included in the contract documents to make clear the requirements above:

- Grizzly Bear – Endangered Species Act (revised 12-09-21m)
  - Description. This project is located within grizzly bear habitat. Comply with this provision to minimize impacts to the grizzly bear, which is a federally listed species under the Endangered Species Act.
  - Requirements
    - Follow the requirements of Subsection 208.03.4(E) for all project activities.
    - Notify the Project Manager of any animal carcasses found in the area. The Project Manager will contact MDT Maintenance to promptly remove and dispose of carcasses.
    - Notify the Project Manager of any bears observed in the vicinity of the project. The Project Manager will promptly inform the MDT District Biologist at (406) 444-9205 of bear observations.
    - Conduct project-related activities outside of construction limits in accordance with the measures above and Subsection 208.03.4(E).
  - Method of Measurement and Basis of Payment. Requirements in this provision are not measured for payment.

2.0 ACTION AREA AND ENVIRONMENTAL BASELINE

2.1 ACTION AREA

The action area for the proposed project is defined as "all areas to be affected directly or indirectly by the proposed action and not merely the immediate area directly adjacent to the action" (50 CFR §402.02). Project components that pose potential effects include construction noise, clearing, and grading that result from construction activities and operation of the highway facility.

2.1.1 AQUATIC PORTION OF ACTION AREA

The aquatic portion of the action area is defined by the furthest extent of effects anticipated as a result of in-stream work. In-stream work for both the construction of the new bridge and removal of the existing bridge will likely involve the use of pile driving. This would produce the greatest impact extent from underwater noise. Ambient underwater noise has not been measured at the bridge location but can be estimated from river characteristics. Ambient noise levels in deep freshwater lakes or deep slow-moving rivers are approximately 135 dB root mean square (RMS). In shallow (1 foot deep or less), fast moving rivers, the ambient noise levels are louder and are approximated at 140 dB RMS in these systems [Washington State Department of Transportation, 2015].

The size and type of pile affects the amount of sound generated by pile-driving activities. Using the practical spreading model [Washington State Department of Transportation, 2015] and 135 dB ambient for a flowing river, if sound from the impact pile driving was unimpeded through the water, it would not dissipate to ambient levels for over 20 miles from the bridge. However, underwater noise propagation in rivers is limited by the sinuosity of a system and generally dissipates at river bends that are beyond the line-of-sight [Washington State Department of Transportation, 2015]. The Flathead River bends to the west both up- and downstream of the bridge. These river bends would disrupt the propagation of the underwater noise where the river curves out of the line-of-sight at approximately 0.6 miles downstream and 0.9 miles upstream from the proposed project. Temporary sediment and turbidity induced from in-stream work during construction of the piers for the new bridge and pier removal for the existing bridge is anticipated to dissipate within the downstream extent of the noise impacts as the river bends to the west up- and downstream of the existing bridge site.

The presence of the proposed bridge piers within the river channel could alter hydraulics downstream. The size of the piers is small in relation to the river at the bridge crossing location; therefore, any hydraulic effects would be expected to dissipate over relatively short distances. Because noise impacts are expected to dissipate to background levels in the river approximately 0.9 miles upstream of the proposed bridge site and approximately 0.6 miles downstream of the bridge (beyond any turbidity or hydraulic effects), the aquatic portion of the action area would be determined by noise impacts.

2.1.2 TERRESTRIAL PORTION OF THE ACTION AREA

The terrestrial portion of the action area is defined based on the potential for noise associated with the operation of construction equipment. The locations of the construction contractors' staging and equipment areas are unknown at this stage in the project, but these sites would likely be located in existing ROW or previously disturbed areas along the existing roadways and agricultural fields landward of riparian areas. Baseline noise levels for the project site were assumed to be approximately 55 dB based on the rural character of the area [Washington State Department of Transportation, 2015].

The loudest equipment potentially used for this project could be an impact pile driver for the installation of the bridge piers. According to the Washington State Department of Transportation (WSDOT) [2015], impact drivers can produce peak decibels of 110 dB (in-air) as measured 50 feet from the device. Decibel addition rules are not applicable since the noise associated with the next loudest noise producing equipment anticipated to be used (excavator at 81dB) differs by more than 10 dB when compared to a vibratory pile driver. Using a point-source sound attenuation model where a 6 dB noise reduction occurs per doubling distance from the activity, with an additional 1.5 dB of reduction due to soft site characteristics in the study area, noise should attenuate to baseline levels approximately 7,925 feet from the proposed bridge crossing when direct impact pile driving is being used. Topography and site characteristics affect the propagation of sound. For example, the hills located to the east of the project site would reduce the extent of noise in that direction. However, for this analysis a simplified uniform distance was used as a conservative area to assess potential impacts. Therefore, the terrestrial portion of the action area extends 7,925 feet (1.5 miles) in all directions from the proposed project.

In summary, the Action Area associated with this project is defined as the following:

- Aquatic Noise: 0.9 miles upstream and 0.6 miles downstream from the project footprint
- Terrestrial Noise: 1.5 miles in all cardinal directions from the proposed bridge over the Flathead River.

2.2 ENVIRONMENTAL BASELINE

Regulations that implement the ESA (50 CFR §402.02) define the environmental baseline as the past and present impacts of all federal, state, or private actions and other human activities in the action area.

2.2.1 PROJECT SETTING

Information reported within the following sections were obtained from a combination of literature, database searches, and the Biological Resource Report for this project dated October 2013 [Morrison-Maierle, Inc., 2013].

2.2.1.1 LAND USE AND LAND OWNERSHIP

The proposed project location is within the transition area between flat terrain west of the Flathead River and rolling terrain east of the river. The surrounding area encompasses farmlands to the west and forest to the east. Several houses lie on the east riverbank, north of the bridge, with the nearest residence approximately 200 feet north of the bridge. Except for the Montana FWP FAS, all sides of the project are bound by private property.

2.2.1.2 VEGETATION AND LAND COVER TYPE

According to the online Montana Natural Heritage Program (MTNHP) Map Viewer [MTNHP, 2021a], the most common land cover types west of the bridge are Cultivated Crops and Pasture/Hay, while land cover types east of the bridge include Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest; Rocky Mountain Lower Montane, Foothill, and Valley Grassland; Developed, Open Space; and Low Intensity Residential. Vegetation west of the bridge consists almost entirely of agricultural crops. Forested habitat east of the bridge consists of a mix of deciduous trees, such as aspen (*Populus tremuloides*) and birch (*Betula papyrifera*) as well as coniferous trees, such as Douglas-fir (*Pseudotsuga menziesii*). Wetland vegetation within the project area includes reed canarygrass (*Phalaris arundinacea*), cattail (*Typha latifolia*), and willow (*Salix spp.*). Vegetation within the existing highway ROW includes various grasses and forbs.

2.2.1.3 AQUATC RESOURCES

The project occurs within the Flathead River drainage, approximately 2.1 river miles upstream of the confluence with Flathead Lake. The elevation of Flathead Lake and, consequently, this section of the Flathead River is artificially maintained by the Seli'š Ksanka Qlispe' (Kerr) Dam near Polson, Montana. The river has a bankfull width of approximately 660 feet near the bridge and the substrate is comprised of fine silt and sand. The riverbanks are steep and rocky with little to no wetland fringe. In the project area, the Flathead River flows directly beneath the bridge and protrudes south on the eastern shoreline to accommodate the FAS boat launch.

The Flathead River above Flathead Lake supports a variety of fish species that include resident populations of westslope cutthroat trout (*Oncorhynchus clarkii lewisi*), mountain whitefish (*Prosopium williamsoni*), pygmy whitefish (*Prosopium coulteri*), largescale sucker (*Catostomus macrocheilus*), northern pike (*Esox lucius*), northern pikeminnow (*Ptychocheilus oregonensis*), and peamouth (*Mylocheilus caurinus*), as well as migratory populations of bull trout (*Salvelinus confluentus*) and lake trout (*Salvelinus namaycush*).

2.2.1.4 TERRESTRIAL RESOURCES

The Flathead River corridor and adjacent undeveloped forest habitat provides suitable habitat for a variety of mammalian species, such as elk (*Cervus elaphus*), mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), moose (*Alces alces*), black bear (*Ursus americanus*), grizzly bear (*Ursus arctos horribilis*), mountain lion (*Puma concolor*), fox (*Vulpes vulpes*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), and skunk (*Mephitis mephitis*). Many of these species may also use the agricultural fields on the west side of the bridge for food. An assortment of songbirds, raptors, waterfowl, and shore birds as well as a few reptile and amphibian species likely use the habitat in the project area.

Linear riverine systems, such as the Flathead River, often provide movement corridors for a variety of species. Several of the mammal species listed in this report likely move through the project corridor along the narrow riparian corridor of the river. The existing bridge provides limited room for wildlife to pass under the structure on both sides.

3.0 THREATENED-AND-ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

Section 7 of the ESA [16 U.S.C. 1531 *et seq.*] outlines the procedures for Federal interagency cooperation to protect federally listed species and conserve designated critical habitats. Section 7 requires that Federal agencies determine the effects of the proposed action on threatened, endangered, and proposed species and to consult with the USFWS for concurrence on the determination of effect. This section provides the Biological Assessment of the proposed action's effect on federally listed species and designated critical habitats.

3.1 METHODS

Information reported within this section was obtained from a review of literature, database searches, and the 2013 Preliminary Biological Assessment (PBA) completed for this project. The USFWS Information for Planning and Consultation (IPaC) database [USFWS, 2022] was reviewed and a list of federally listed threatened species addressed in this BA, as well as their respective federal status and presence of critical habitat in the project area, are provided in Table 3-1.

Table 3-1. Federally Listed Species That the Project May Affect

Common Name	Scientific Name	Status	Critical Habitat in Action Area
Grizzly Bear	*Ursus arctos horribilis*	LT	No
Bull Trout	*Salvelinus confluentus*	LT, CH	Yes
Yellow-Billed Cuckoo	*Coccyzus americanus*	LT	No

LT = Listed Threatened
CH = Critical Habitat.

3.2 PREVIOUS EFFECT DETERMINATION IN THE PRELIMINARY BIOLOGICAL ASSESSMENT

A Biological Resource Report and PBA was completed for the proposed project in October 2013 [Morrison-Maierle, Inc. 2013]. The October 2013 PBA assessed the proposed project's potential effects on the species listed in Table 3-1. Based on the analysis presented in the PBA, ***may affect*** determinations were rendered with regard to grizzly bear, bull trout, and bull trout critical habitat. Based on this preliminary determination, a final BA was deemed necessary for the proposed project to further evaluate the proposed project's potential to affect these species using the most current project design details. The yellow-billed cuckoo (*Coccyzus americanus*) is the only listed species identified by the IPaC database that was not previously listed at the time of the 2013 PBA for this project. A section devoted to the yellow-billed cuckoo is provided within this chapter.

3.3 POTENTIAL CUMULATIVE EFFECTS ANALYSIS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered for this BA [USFWS, 1998a]. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA [USFWS, 1998a]. A cumulative impacts analysis examines the additive effect of the proposed action's residual impact (i.e., impacts remaining after applying avoidance and minimization measures) in relation to the residual impacts generated by past, present, and reasonably foreseeable actions within the cumulative analysis area. The proposed project will replace the existing degraded structure with no residual impacts identified.

3.4 GRIZZLY BEAR

3.4.1 SPECIES STATUS, DISTRIBUTION, HABITAT REQUIREMENTS, AND REASONS FOR DECLINE

The grizzly bear was listed as threatened under the ESA in 1975 in the conterminous 48 states (40 FR 31734). Habitat loss and human encroachment are the primary reasons for decline in grizzly bear populations [Reel et al., 1989]. Five regions presently exist where grizzly bears are known to occur: the Greater Yellowstone Ecosystem (GYE), Northern Continental Divide Ecosystem (NCDE), Cabinet-Yaak Ecosystem, Selkirk Ecosystem, and Northern Cascades Ecosystem. On June 30, 2017, the GYE population of grizzly bears was removed from the federal list of T&E species. On September 24, 2018, the Montana District Court issued an order that vacated the 2017 delisting rule and remanded it back to the USFWS. A final rule was published on July 31, 2019, to comply with the court order reinstating that any and all grizzly bears in the GYE are once again listed as a threatened species under the ESA. As a result, all grizzly bears in the lower 48 states are currently protected as threatened.

The action area is west of the Northern Continental Divide Grizzly Bear Recovery Zone, which includes Glacier National Park and the greater Bob Marshall Wilderness Area. Noninvasive hair sampling DNA analysis conducted in 2004 within the recovery zone and adjacent occupied habitat outside the recovery zone (10-mile buffer) supported an estimate of 765 grizzly bears in the NCDE [Kendall et al., 2009]. The greatest densities occurred in Glacier National Park in the north and the lowest densities were in the southern reaches of the recovery zone [Kendall et al., 2009]. Additional population monitoring through radio collar studies between 2004 and 2014 indicated that the NCDE grizzly population was increasing at a rate of 2.3 percent per year. According to Kasworm et al. [2018], over an 8-year period from 2005 through 2012, ten grizzly bears, including seven females and three males, were removed from the NCDE and moved to the Cabinet-Yaak Grizzly Bear Recovery Area to augment that population of grizzly bears. Agency removals are the leading cause of mortality and loss from the NCDE among all of the recent years of monitoring [Interagency Grizzly Bear Committee, 2022]. Despite the deliberate removals, the annual growth rate in the NCDE has remained unchanged. Based on previously observed vital rates, Costello and Roberts [2021] projected a continuously growing population with estimates of 1,068 bears in 2019; 1,092 in 2020; 1,114 in 2021; 1,138 in 2022; and 1,163 in 2023. This stable trend indicates that bears are being recruited into the NCDE regardless of management removal actions and current levels of illegal, accidental, and natural mortalities. Likewise, grizzly bears are known to be increasing in number outside monitored areas.

3.4.1.1 LIFE HISTORY AND HABITAT REQUIREMENTS

Grizzly bears exhibit a long lifespan of approximately 25 years or more in captivity [MTNHP, 2021b]. Grizzly bears will breed every 2 to 3 years, with mating season occurring from May through July. Breeding in Montana typically occurs from late April through June or early July. Grizzly bears are polygamous and several males may fight over a female for breeding purposes [MTNHP, 2021b]. One to four cubs are born in a winter den (in Montana the average is 2.8) and weigh on average 1.1 pounds. The newborn cubs are helpless at birth and are nursed for the first 1.5 to 2.5 years, growing rapidly. The young will remain with their mother for the next two winters and usually achieve adult size in 4 to 6 years [MTNHP, 2021b]. Grizzly bears do not hibernate but enter a slight torpid state that is described as winter dormancy. Dormancy occurs during denning in well-drained areas on slopes that receive heavy snowfall. The bears will stay up to 7 months in these dens, leaving the dens in March or April [Foresman, 2001].

Grizzly bears are not truly migratory, but often exhibit discrete elevational movements from spring to fall following seasonal food source availability. Grizzly bears usually occur at lower elevations in the spring and at higher elevations in the late summer and into the winter. Grizzly bears have large home ranges that average 296.5 square miles for males and 48.3 square miles for females, as documented in a study conducted in the Swan Mountains of Montana [MTNHP, 2021b].

Historically, the grizzly bear was primarily a plains species that existed in high densities throughout most of eastern Montana; however, they are currently restricted to more remote, forested areas. In Montana, grizzly bears use a wide variety of habitat types depending on seasons and local characteristics. These habitats include meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, side-hill parks, snow chutes, and alpine slab -rock [MTNHP, 2021b]. Grizzly bear movements within their home range are primarily dependent on the availability of food sources. Grizzly bears require large corridors of contiguous forested land for movement within their home range. Den sites typically occur at higher elevations that have a slope of 28 to 35 degrees, with an aspect that maintains deep snow [Foresman, 2001].

Grizzly bears are characterized as opportunistic and adaptable omnivores with a diet of greater than 50 percent vegetation. Grizzly bears have long claws for digging and exploiting vegetative food sources, which is an adaptation that evolved as a result of their diet. Grizzly bears also feed on carrion, fish, large and small mammals, insects, fruit, grasses, bark, roots, mushrooms, and garbage. Whitebark pine seeds are an important dietary component for the grizzly bear. The success of the whitebark pine seed crop exhibits a direct correlation to the number of grizzly bears killed in control actions [MTNHP, 2021b].

3.4.2 OCCURRENCE IN ACTION AREA

The project area is located just outside of the western boundaries of the NCDE Grizzly Bear Recovery Zone, but within the USFWS estimated current distribution and area where grizzly bears “may be present” [USFWS, 2021a]. The NCDE encompasses approximately 9,600 square miles and extends from the Rattlesnake Wilderness north of Missoula, Montana, to the northern border of Glacier National Park. The NCDE supports over 1,000 grizzly bears [Interagency Grizzly Bear Committee, 2019]. Grizzly bear activity is common in the mountain ranges to the north and east of the project area and, although uncommon, grizzly bears have occasionally been documented in the vicinity of the project action area as discussed below. No denning is known to occur in the immediate project area. MDT has no records of grizzly bear mortality on MT 82 from bear/vehicle collisions.

Grizzly/human conflicts appear to be increasing as the NCDE population grows and bears move into previously unoccupied habitats. Within the last 5 years, two FWP grizzly management removals have occurred within 10 miles of the bridge location, near Ferndale to the southeast and near Mud Lake to the northeast of the bridge [MTNHP, 2021b].

Within the immediate project area, grizzly bear habitat is limited to some intact riparian and wetland habitat along the river and scattered blocks of coniferous forest. The presence of numerous rural homes and subdivisions both up- and downstream of the bridge likely preclude grizzly bears from routinely using habitat in the project area. Grizzly bears may occasionally move through the project area as they travel along the river riparian corridor. Bears may be attracted to the action area by human attractants, such as bird feeders and garbage receptacles. Grizzly bear activity in the action area would most likely occur from spring through fall (approximately March to November) until the bears retreat to their dens for the winter. No known denning habitat exists in the action area and bears are not known to den nearby.

3.4.3 POTENTIAL IMPACT ANALYSIS

Grizzly bears may be seasonally present in and around the action area during construction as they travel along the Flathead River riparian corridor. Grizzly bears occupying habitat in the action area during construction may be displaced from that habitat because of increased and concentrated equipment operation and increased human activity near the highway during construction. This temporary and short-term impact related to construction activity is expected to result in a behavioral response, as bears alter their movements to avoid or move around the disturbing activity. Temporary disturbance during construction that forces grizzly bears to use habitat away from the highway and associated campgrounds, businesses, and homes is not altogether negative, as the potential for human/bear conflicts in the action area may temporarily decrease during construction. Bear use of habitat in the action area is likely to return to preconstruction levels after construction is completed.

While bear activity in the action area may decrease during construction, habituated bears may not be affected by construction activities and may be attracted to the construction site by human foods and associated garbage. Standard specifications and special provisions previously discussed for working in bear habitat will be included in the project contract to minimize the potential for bear/human conflicts during construction.

The immediate area that would be disturbed during construction is of low value for grizzly bears. The existing ROW along MT 82 is heavily disturbed by ongoing highway maintenance activities, bisecting access roads to homes and businesses, and the Montana FWP FAS. The existing bridge provides limited passage underneath at both bridge ends and the new bridge will have similar riprap end bent protection, which extends to the water's edge and offers little means of wildlife passage. The new bridge is anticipated to provide similar or improved passage opportunity. Except during movements across the highway, grizzly bears are not expected to spend time within the existing ROW. As such, impacts to grizzly bear habitat are expected to be minor or non-existent with this bridge replacement project. Overall, the project is not expected to have long-term detrimental impacts to grizzly bear habitat and movements across the highway and no population level impacts are expected.

3.4.4 DETERMINATION OF EFFECT

The proposed project is geographically situated between the communities of Big Fork and Kalispell, Montana, in a semi-rural landscape with scattered residential developments and agricultural land to the west of the river and limited forested habitat east of the bridge. Secure blocks of forested habitat do not occur in the immediate project vicinity although grizzly bears may be drawn to the Flathead River at various times of the year. Considering the landscape position of this project, a slight possibility exists for grizzly bears to occur in the project area during construction. The proposed project would impact rarely used habitat within a previously disturbed corridor, which is regarded as low value to grizzly bears in the NCDE. Through this analysis and implementation of conservation measures, the effects, if they were to occur, would be insignificant and discountable. Thus, a ***May Affect, Not Likely to Adversely Affect*** determination has been rendered for the threatened grizzly bear.

3.5 BULL TROUT

3.5.1 SPECIES STATUS, DISTRIBUTION, AND REASONS FOR DECLINE

The USFWS defined a single distinct population segment (DPS) of bull trout within the conterminous United States and listed them as threatened under the ESA in 1999 (64 FR 58910). This single DPS is subdivided into six biologically based recovery units. Of these units, the Columbia headwaters recovery unit contains the Clark Fork River population [USFWS, 2015a].

Bull trout occur in nearly all of the Columbia River Basin in higher elevation tributaries in Washington, Oregon, Idaho, Montana, and a small portion of Nevada. The historical range of bull trout includes major river basins in the Pacific Northwest at approximately 41 to 60 degrees North latitude, from the southern limits in the McCloud River in northern California and the Jarbidge River in Nevada to the headwaters of the Yukon River in the Northwest Territories, Canada [Cavender, 1978]. Although bull trout are presently widespread within their historical range, they have declined in overall distribution and abundance during the last century. Dams, forest management practices, agriculture, roads, and mining are the primary land and water management activities that threaten bull trout and degrade its habitat [USFWS, 1998b]. Native bull trout have also been displaced in many areas through competitive interaction with introduced brook trout (*Salvelinus fontinalis*). Bull trout and brook trout can interbreed, and their offspring are sterile hybrids, which further contributes to bull trout population decline.

Spawning areas are often in headwater streams and associated with coldwater springs, groundwater infiltration, and the coldest streams in a watershed [Rieman and McIntyre, 1993]. Spawning takes place between late August and early November, principally in third and fourth order streams. Bull trout prefer spawning habitat in low-gradient stream reaches with loose, clean gravel [Fraley and Shepard, 1989] and do not tolerate high sediment levels in their spawning streams. The Flathead River, as well as Flathead Lake downstream of the project, contain foraging, migrating, and overwintering (FMO) habitat areas for bull trout [USFWS, 2010a].

On October 18, 2010, the USFWS issued a final rule designating critical habitat for bull trout in the conterminous United States (75 FR 63898-64070), and developed implementation plans for the final bull trout recovery plan [USFWS, 2015a]. The Flathead Recovery Subunit occurs within Critical Habitat Unit 31 – Clark Fork River Basin. Critical Habitat Unit 31 covers approximately 3,328 miles of stream and 295,587 acres of lakes or reservoirs in Montana, Idaho, and Washington (75 FR 63898-64070). The project area occurs within the Flathead Lake complex core area of Critical Habitat Unit 31 and includes Flathead Lake, the Flathead River, and the North and Middle Forks of the Flathead River. In freshwater areas, bull trout critical habitat includes the stream channels within the designated stream reaches and a lateral extent as defined by the bankfull elevation on one bank to the bankfull elevation on the opposite bank, or the ordinary high water mark (OHWM) if bankfull elevation in not evident on either bank [USFWS, 2010a]. The final rule (75 FR 63926) further defines critical habitat to include: "the bed and banks of waterbodies, but actions that may destroy critical habitat could occur on lands adjacent to waterbodies, and, therefore, would be subject to regulation under this rule."

3.5.2 LIFE HISTORY AND HABITAT REQUIREMENTS

Bull trout have three distinct life forms: resident, fluvial, and adfluvial. Resident bull trout populations spend their entire life in small headwater streams. Fluvial bull trout are migratory populations that reside in larger rivers and spawn is smaller tributary streams. Adfluvial populations are migratory and reside in lakes and reservoirs, then return to tributary streams to spawn. Bull trout reach maturity in 5 to 7 years and may spawn annually or biennially [Pratt, 1985]. Spawning occurs from late August to November, but usually after mid-September in low-gradient third and fourth order streams [Carnefix, 2003]. Most bull trout spawning in Montana occurs in a small percentage of the total stream habitat [Carnefix, 2003]. Bull trout are sensitive to high sediment levels in their spawning streams, as fine sediment can clog the interstitial spaces in the substrate and suffocate the developing embryos before they hatch.

Habitat requirements for the spawning bull trout include cold unpolluted water, clean gravel, cobble substrate with high permeability, streams influenced by groundwater, and gentle stream slopes [USFWS, 2002]. Water temperature requirements for spawning are below 46 degrees Fahrenheit (°F), and the substrate must be a gravel/cobble with low levels of fine substrate particles (smaller than 0.25 inch in diameter) [Carnefix, 2003]. Eggs are deposited as deep as 10 inches below the streambed surface. Bull trout eggs require an incubation period of 4 to 5 months before hatching occurs in late winter or early spring, depending on water temperature [Carnefix, 2003]. Bull trout fry emerge and remain in the substrate interstices of low-velocity streams for 1 to 4 years while feeding on aquatic macroinvertebrates. Juvenile outmigration typically occurs from June through August. Sub-adult and adult bull trout are primarily piscivorous but will also feed on amphibians and rodents [MTNHP, 2021b].

3.5.2.1 HABITAT RELATIONSHIPS

3.5.2.1.1 Water Temperature

Water temperature is one of the most important variables affecting salmonids, influencing timing of migration, spawning, egg maturation, growth, and emergence [Bjornn and Reiser, 1991]. Bull trout have more specific stream temperature requirements than other salmonids [Carnefix, 2003]. Bull trout require cold water temperatures of 39.2 to 48.2°F for spawning; fry emergence occurs from 35.6 to 39.2°F; and sub-adults and adults inhabit streams with a maximum temperature of 59°F [Goetz, 1989]. Water quality data for the Flathead River above Flathead Lake was obtained from the United States Environmental Protection Agency (EPA) MyWATERS Mapper [EPA, 2013] and from the United States Geological Survey (USGS) [2013]. Temperature in the Flathead River near Bigfork was measured at USGS Station 12369000. Water temperatures in the project area from October through April are between 36.5°F and 41°F. Water temperatures rise in the spring and average from approximately 44°F in May to approximately 48.6°F in June. Water temperatures are warmest in July and August when the average temperatures are approximately 59°F and 62°F, respectively.

3.5.2.1.2 Cover

Stream cover in the form of water depth, turbulence, boulders, large woody debris (LWD), undercut banks, and overhanging riparian vegetation is an important component for salmonids during all life stages. Predation on salmonids and water temperature are influenced by the amount of cover within stream reaches, and stream cover has a direct effect on the suitability of a stream to support salmonid populations. LWD, which is defined as woody material greater than 20 inches in diameter and 35 feet in length, is one of the most important sources of habitat and cover for salmonids in streams [Bisson et al., 1987].

3.5.2.1.3 Channel Form and Stability

Bull trout use third and fourth order streams with low gradients for spawning. Spawning areas are usually characterized by gradients of less than 2 percent, water depths of 4 to 24 inches, and stream velocities of 0.3 to 2.0 feet per second [Carnefix, 2003]. Streams with stable banks, in-stream and overhead cover, complex channels, and a high number of quality pools are required for adequate bull trout habitat [Platts and Nelson, 1986]. Stable and vegetated stream banks reduce the amount of fine bedload sediment entering the channels. Increasing the amount of fine sediment in a stream increases substrate embeddedness and clogs interstitial spaces, which reduces the transport of dissolved oxygen to incubating eggs.

3.5.2.1.4 Lake Form and Stability

Bull trout adfluvial populations are found in lakes and reservoirs. Rapid growth and maturation occur in large water bodies as their diets shift from insects to fish. Bull trout are generally found at the bottom of lakes. During summer, bull trout occupy the coldest layer of deep lakes (upper hypolimnion) but may forage in shallower waters. River and lake transition zones appear to be particularly important habitats for spawning and migration [Montana Bull Trout Restoration Team, 2000].

3.5.2.1.5 Spawning and Rearing Substrates

Substrate composition is an important factor for the survivability of bull trout eggs and fry. For spawning , bull trout use clean gravel and cobble substrate with less than 12 percent fine sediment (smaller than 0.25 inch in diameter) in streambed gravels, and less than 20 percent surface fines. Reach embeddedness must be less than 20 percent [Carnefix, 2003] and spawning areas are usually less than 2 percent in gradient [Fraley and Shepard, 1989] with water depths that range from 0.3 to 2.0 feet and average 1.0 foot [Fraley et al., 1981]. Incubation and fry emergence success depends on the conditions of gravel, surface flow, and water temperature. Spawning gravel with reduced fines (less than 35 to 40 percent fine sediment) and organic material is more suitable for incubating embryos [Rieser and Bjornn, 1979]. For incubation and fry emergence, water temperature should be around 35.5 to 39°F and no higher than 46.5°F [Weaver and White, 1985]. Fry emergence coincides with spring runoff and groundwater influence [Weaver and Fraley, 1991]. Afterwards, Bull trout juveniles will readily disperse from the redd area and use most of the suitable and accessible stream areas within a drainage to reach maturity [Leider et al., 1986]. Water temperature, habitat quality, and cover (substrate and large woody debris) determine the distribution and abundance of juvenile bull trout [Fraley and Shepard, 1989]. Juveniles are rarely found in streams with temperatures above 59°F and excess sediment reduces useable rearing habitat and macroinvertebrate production [Fraley and Shepard, 1989].

3.5.2.1.6 Migratory Corridors

Channel stability, substrate composition, cover, water temperature, and migratory corridors are important for fluvial and adfluvial adult and young fish rearing and movement in streams [Rieman and McIntyre, 1993]. Deep pools with abundant cover (boulder substrate, woody debris, and undercut banks) and water temperatures below 59 °F are important habitat components for stream resident bull trout [Goetz, 1989]. Fluvial bull trout over-winter in pool and run habitats (habitat that is deep, fast with a defined thalweg and little surface agitation) [Elle et al., 1994]. Most fluvial bull trout remained in the same habitat type after entering the main river from tributaries [Elle et al., 1994]. Large rivers, such as the Flathead River (used as migratory corridors for fluvial and adfluvial bull trout), large oxbow lakes, groundwater influenced floodplain ponds, and sloughs adjacent to the main channel, are important habitat components during all seasons [Cavallo, 1997]. Lakes and reservoirs are very important for adfluvial bull trout, as they are the primary habitat for rearing and growth of young and adults [Leathe and Graham, 1982]. Adequate migration corridors for bull trout are identified as reaches that meet requirements for in-stream and overhead cover, clean gravel substrates, water temperatures, pool frequency, width-to-depth ratios, and are connected [Montana Bull Trout Scientific Group, 1998]. Bull trout migration in the project area has been limited because of degraded habitat and physical barriers like dams [MTNHP, 2021b]. Migratory corridors within tributary streams, larger rivers, and lake systems are necessary for maintaining bull trout populations [Carnefix, 2003].

3.5.3 OCCURRENCE IN ACTION AREA

3.5.3.1 FLATHEAD RIVER

Water surface elevations in the project area are controlled by the Kerr Dam, which maintains a maximum elevation of 2,893 feet above sea level and a minimum elevation of 2,883 feet above sea level. Peaks flows are also controlled by the Hungry Horse Dam upstream of the project area. Because of the presence of the dams, the Flathead River within the project area is not subject to substantial flooding.

The portion of Flathead River that occurs within the project area is identified as nodal habitat by the Montana FWP and USFWS [Montana FWP, 2022]. Bull trout in this area are predominantly adfluvial fish that reside in Flathead Lake and migrate out of the lake to spawn. Flathead Lake is considered a core area that is “at risk” because the limited or declining numbers of bull trout in this core area are vulnerable to extirpation [USFWS, 2005a]. Population estimates for the adfluvial bull trout in Flathead Lake vary from less than 1,000 [USFWS, 2005b] to 3,000 [Confederated Salish and Kootenai Tribes, 2013]. The current population is at least 50 percent lower than it was before 1980 [Confederated Salish and Kootenai Tribes, 2013; Weaver et al., 2006].

The project area lies between River Mile points 107 and 108. Data from Montana FWP indicate that bull trout may be present in common abundance and use the river primarily for migrating [Montana FWP, 2022]. Bull trout begin migrating from Flathead Lake in April and May and work their way upstream and some may travel up to 140 river miles to reach their natal stream. By late June and July, adult bull trout reach the Middle and North Forks of the Flathead River where they reside in deep holes and runs until moving into tributaries during the spawning season in September [Fraley and Shepard, 1989]. Juvenile outmigration occurs from June through August, with peak numbers in the main stem occurring in the fall months [McMullin and Graham, 1981]. Bull trout are present in the project area throughout the year with the lowest numbers occurring during the warmest months.

Bull trout require cold water temperatures and strongly prefer reaches where the estimated August mean temperature is less than 50°F [D’Angelo and Muhlfeld, 2013]. The average water temperatures in the project area during July and August are 59 to 62°F [USGS, 2013], which exceeds the preferred temperature for bull trout. Bull trout are less likely to inhabit the project area during these warmer months but possibly still occur and may take advantage of colder water temperatures in the deepest parts of the water column where temperatures may fall within the desired range even when surface temperatures do not.

3.5.4 POTENTIAL DIRECT IMPACT ANALYSIS

The following sections describe the potential direct impacts that would likely occur from constructing the new bridge over the Flathead River, associated approach roadways, and FAS. Direct effects are impacts caused by specific projects that occur at the same time and place and have immediate effects on the species or its habitat. The following discussion lists various direct impacts that are common to these types of bridge and roadway reconstruction projects and are likely to occur as a result of this project.

3.5.4.1 ROADWAY AND FAS CONSTRUCTION

The proposed bridge over the Flathead River is on a new alignment downstream of the existing roadway; therefore, new roadway approaches will be necessary at both bridge ends. The new approaches will tie back into the existing roadway approximately 3,731 feet west of the bridge and 3,237 feet east of the bridge. Impacted habitat is primarily agricultural hay ground west of the bridge and a combination of wetland and riparian habitat on the bench immediately east of the river and coniferous forest as the highway climbs out of the river floodplain to the east. All of the forest habitat within the new ROW would be cleared and the land filled and leveled for placement of the road base and finished road surface. As previously described, critical habitat includes the immediate riverbanks at this location; therefore, a combination of roadway, bridge abutment, and FAS boat launch construction would directly impact critical habitat for bull trout.

The existing FAS and approach roadway will be reconstructed in the same, currently existing location but will be expanded to provide increased access and parking. A new boat ramp will be constructed in the Flathead River, which will have short-term direct impacts during construction. Impacts to the Flathead River from the bridge and boat ramp construction are discussed in detail in Section 3.5.4.2.

3.5.4.2 BRIDGE CONSTRUCTION AND DEMOLITION

Bridge construction and demolition could result in the following impacts to bull trout: (1) direct mortality of fish, (2) temporary displacement of fish from the project area because of increased sediments and construction activities, (3) impacts to supporting aquatic and/or riparian habitat in the project area, and (4) reductions in water quality because of sedimentation and or other unforeseen events, which could result in reduced availability of prey or increased toxicity of prey through bio-accumulation of contaminants.

Generally, direct mortality of bull trout could occur during construction project activities by killing adult or juvenile fish within the project limits. No suitable bull trout spawning habitat exists in the Flathead River or Flathead Lake below the proposed project and, therefore, no direct mortality of incubating eggs or destruction of redds is anticipated. Direct mortality could occur from actual physical disturbances to fish within occupied habitat near the project.

In-stream project activities that could result in direct injury or mortality to adult and sub-adult bull trout via sediment and barotrauma impacts include impact-hammer pile driving for installation of piers as well as the potential use of explosives for in-stream pier demolition of the existing bridge.

3.5.4.2.1 Total Suspended Sediments

Increases in turbidity, suspended sediment, and other pollutants can reduce stream productivity, decrease feeding opportunities for fish, severely impact fish gill function, reduce fish egg and fry survival rates, cause undue physiological stress on fish, and result in fish avoidance of important habitat [Muck, 2010]. Deposited sediments reduce habitat volume by filling pools and intergravel spaces that are critical to young fish. Between 2004 and 2007, the MDT had the USGS monitor the total suspended sediments (TSS) generated from construction activities associated with two bridge construction projects on the Clark Fork of the Columbia River [USGS, 2007]. Construction activities at these bridge replacements included pile driving in the river, riprap placement below the ordinary high water mark, and removal of the existing bridges. Measurements were taken up- and downstream before and shortly after construction activities stopped (1 to 3 hours). The results from that USGS monitoring are provided in Tables 3-2 and 3-3. At each site, USGS measured discharge while sampling sediment both before and after construction. Sediment was sampled at each of three cross-sections. The cross-sections were typically (1) above the construction site, (2) immediately below the construction site, and (3) approximately five bankfull widths below the construction site or as close as possible to five bankfull widths at a good measurement site.

Table 3-2. Total Suspended Sediment Monitoring Associated With the Montana Department of Transportation's Sawmill Bridge Replacement Project on the Clark Fork River

Clark Fork at Sawmill Bridge	Before Construction (mg/L)	After Construction (mg/L)
Upstream	9	9
Below	9	11
Downstream	7	10

mg/L = milligrams per liter.

Table 3-3. Total Suspended Sediment Monitoring Associated With the Montana Department of Transportation's Turah Bridge Replacement Project on the Clark Fork River

Clark Fork at Turah Bridge	Before Construction (mg/L)	After Construction (mg/L)
Upstream	8	3
Below	6	5
Downstream	5	5

TSS was elevated during the construction activities, such as pile driving and riprap installation, but TSS levels were either slightly elevated (2 to 3 mg/L) or below levels measured before the construction activity within 1 to 3 hours after construction. This indicates that TSS levels quickly return to background levels. The duration and magnitude of sediment load increases during in-stream construction is related to watercourse size, volume of flow, construction activity, BMPs, and sediment particle sizes. The dispersion of suspended sediment concentrations within the plume will reflect the flow conditions of the receiving waterbody [Julien, 1995]. Very low flow conditions can result in minimal dilution and high suspended solid concentrations. At the other extreme, high flows associated with storm events can increase background levels and entrain exposed sediment at the crossing location. The downstream extent and concentrations of the sediment plume will also reflect the particle sizes of the material excavated. Physical structures (BMPs) such as silt curtains or debris dams as well as boulders that trap particles promote the settling of suspended sediment [Reid and Anderson, 1998].

Research conducted on the Kootenai National Forest showed substantially increased TSS levels immediately downstream of culvert replacement activities on small Kootenai River tributary streams; however, increases were virtually undetected approximately 1,000 feet downstream of the action [Wegner, 1998]. This suggests that short-duration, point-source discharges are quick to dissipate, especially in larger systems like the Flathead River. While TSS levels will likely rise immediately downstream of this project, levels and duration are not expected to reach lethal levels for sub-adult and adult bull trout in the project vicinity and may only reach sub-lethal levels for a short duration. Those fish that reside immediately downstream would also have the opportunity to move into adjacent, undisturbed habitat during construction.

Although the Flathead River is larger than the Clark Fork River at the two bridge reconstruction projects noted above, anticipating similar construction activities and water quality impacts is reasonable because construction activities will occur in the summer and early fall during low-flow conditions and flows in this portion of the Flathead River are further reduced by backwater effects from Flathead Lake. According to the USFWS white paper relative to determining effects for Section 7 consultation scale of severity (SEV) of ill effects associated with excess suspended sediment upon salmonids, an SEV of 0 to 5 for sub-adult and adult bull trout may affect, but is not likely to adversely affect, individuals or the population [USFWS, 2010b]. This rating corresponds with up to 148 mg/L of sediment over background. Based on findings from the independent monitoring by the USGS on the two MDT bridge replacement projects, expected sediment production should be less than the 148 mg/L over the background for construction activities associated with the Flathead River Bridge. Therefore, while there may be temporary sediment increases, these increases are not expected to reach the level that would cause an adverse effect to bull trout in the Flathead River system near the proposed project area.

3.5.4.2.2 Displacement

Temporary displacement of fish in the project area can occur from an increase in sediment or major changes in an active channel caused by construction activities. This impact could result in short-term reductions in use by fish in the project area. In-water construction activities within the Flathead River will be done in a manner to minimize potential effects to local bull trout populations or individuals. Bull trout, if present during the construction period, are expected to avoid the area by using adjacent suitable habitat upstream and downstream of the proposed project.

3.5.4.2.3 Barotrauma

Scientific research by the Washington Department of Fish and Wildlife, in conjunction with the Washington State Department of Transportation, in April 2010 indicates that impact pile driving for installing underwater piers and pilings may result in elevated underwater sound pressure waves that are physically detrimental to fish and other animal species [Teachout, 2010]. The primary concern is that the sound pressure waves generated by impact pile driving and other sources, such as explosives, can have negative physiological and neurological effects on fish [Yelverton et al., 1973; Yelverton and Richmond, 1981; Steevens et al., 1999; Fothergill et al., 2001; U.S. Department of Defense, 2002]. Injury and mortality to fish species has been directly attributed to impact pile-driving [Stotz and Colby, 2001; Fordjour, 2003; Abbott et al., 2005; Hastings and Popper, 2005]. In some instances, these high sound pressure waves resulted in physical damage to the gas-filled internal organs of fish (such as kidneys, eyes, and swim bladders) and in mammals (such as eardrums) [Turnpenny and Nedwell, 1994; Turnpenny et al., 1994; Popper, 2003; Hastings and Popper, 2005]. These injuries can occur as the result of barotraumas and pathologies associated with high sound levels include hemorrhage and rupture of internal organs [Turnpenny and Nedwell, 1994; Turnpenny et al., 1994; Popper, 2003; Hastings and Popper, 2005].

Essentially, the sound waves enter the fish tissue as the tissues nearly match the surrounding water's acoustical behavior [Hastings, 2002]. When the sound waves pass through the fish, they cause the swim bladder to rapidly contract and expand repeatedly with the high sound pressure waves of the impact pile driving. This rapid expansion and contraction of the swim bladder causes it to repeatedly batter the surrounding internal tissues and organs such as the kidneys, heart, and liver [Gaspin, 1975]. Yelverton et al. [1973] found that size does matter in the effect of sound pressure waves on fish, whereby fish in greater mass and size would require a greater impulse level of sound to cause an injury, while fish with a smaller mass and size would sustain injuries from smaller impulses.

The most noticeable and documented effects that result from impact pile driving is fish kills, but reportedly not all fish killed by pile driving float to the surface, thus remaining undetected [Telecki and Chamberlain, 1978]. Death resulting from barotraumas was not necessarily immediate, because death occurred within minutes to days after exposure to these sound pressure waves [Abbott et al., 2002]. Depending on the source of such underwater sound pressure levels, the disturbance can also result in temporary stunning of fish and alterations in behavior that could potentially affect fish feeding as well as predator evasion within the vicinity of the pile-driving activity [Turnpenny and Nedwell, 1994; Turnpenny et al., 1994; Popper, 2003; Hastings and Popper, 2005].

In addition to the pile-driven piers proposed with this project, the use of pile-driving equipment may also be required to install H piles associated with temporary work bridges. End bents for the new structure will also be driven pipe piles.

Using pile-driving technology could have a detrimental impact on bull trout within the immediate project area if it is conducted when bull trout are present in the immediate project area. The use of protective wrapping for pier demolition above the water surface should attenuate pressure waves in the water column, thus minimizing the potential adverse impact to bull in the immediate project area. However, the proposed project may cause a temporary physical and behavioral barrier to adult or young bull trout in the river system because of construction activities, such as work bridges, pier construction, and existing pier demolition. Despite low bull trout densities in the proposed project area, the chance does exist that one or more fish may be affected, physically harmed, or may temporarily avoid trying to move through the action area until construction activities either cease for the day or the temporary construction impacts associated with the temporary facilities are removed and the project is completed.

3.5.4.2.4 Vegetation Removal

Removal of some woody riparian vegetation at both bridge ends will occur as the bridge is built on a new alignment, which includes some large cottonwood and various conifers. Adjacent woody riparian vegetation and banks up- and downstream of the project area will remain undisturbed by construction activities and, thereby, retain an overhead canopy cover that would provide shading as well as the availability of large woody debris and organic materials to enter the river system. The proposed project will initially destabilize small amounts of the bank on the east and west sides of the river during construction to install the temporary work bridges and bridge ends. Where appropriate, disturbed areas will be topsoiled and planted with trees, shrubs, and other riparian vegetation to assist in naturalizing and stabilizing the banks from erosion and prevent water quality degradation when the construction activities are completed.

3.5.5 POTENTIAL EFFECTS ON BULL TROUT CRITICAL HABITAT

Within designated critical habitat, the Primary Constituent Elements (PCEs) for bull trout are those habitat components that are essential for the primary biological needs of foraging, reproduction, rearing of young, dispersal, genetic exchange, or shelter. Note that the USFWS and NMFS have removed the term "primary constituent elements" from designated critical habitat regulations (50 CFR 424.12) and returned to the statutory term "physical and biological features" for new critical habitat designations (79FR 27066). However, the elements in bull trout critical habitat are still referred to as PCEs. The following important PCEs are discussed in this section in relation to the proposed action.

PCE 1: **Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.**

Springs and developed spring wells are documented to occur east of the bridge on both sides of MT 82. These springs may be impacted during reconstruction of the approach roadway and entrance road to the FAS. The proposed design will catch the spring water in an underdrain system and route the flow away from the roadbed. Considering that this spring water is several thousand feet from the Flathead River, the roadway reconstruction is unlikely have a detrimental impact to water quality or thermal refugia in the river through impacts to this spring.

Although wetlands will be impacted, sufficient adjacent wetlands will remain undisturbed and will continue to provide subsurface connectivity to the Flathead River. The proposed project will not affect peak or base spring flows entering the project area. Because the proposed project area occurs within a deep section of the river, substrate embeddedness in the project vicinity over the long term is not expected. Overall impacts to this PCE relative to bull trout critical habitat will be negligible. The proposed project will maintain this PCE in both the short and long terms.

PCE 2: **Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.**

The proposed project involves in-water work to construct the new bridge piers, remove the existing piers, and construct a new boat launch. This proposed project will require the use of pile-driving equipment to install pilings associated with temporary work bridges as well. The installation of the driven pile could have a detrimental impact on fish within the immediate project area. However, large adult bull trout will likely avoid the noise from construction activities and move either up- or downstream of the area.

Pile driving could cause short-term adverse effects from associated barotrauma. In-stream construction activity and short-term turbidity would have temporary effects or cause avoidance of the project area by bull trout. In-stream activities and pile driving may cause short-term, intermittent barriers to bull trout movement through the action area; however, a minimum of nine hours overnight would be available for bull trout to pass through the action area. No long-term effects for this PCE are anticipated. The proposed project may degrade existing conditions in the short term but will maintain existing conditions for this PCE over the long term.

PCE 3: **An abundant food base, including terrestrial organisms of riparian origin, aquatic macro invertebrates, and forage fish.**

The proposed project should not be detrimental to the food base within Flathead River as there will only be temporary disruptions to the aquatic invertebrate community during the installation of piers and riprap for the new bridge and the removal of the old bridge and piers. The up- and downstream areas will still contribute to the aquatic and terrestrial invertebrate food base in the immediate project vicinity during the construction period. Small forage fish species could temporarily leave the area during construction activities but should return once construction disturbances within the channel and stream edges is completed. Impacts to the food base should be negligible.

The removal of minor vegetation amounts with the installation of the new bridge and abutments on riverbanks will slightly reduce the terrestrial insects and organic matter within the immediate area; however, these impacts are negligible. Aquatic organisms up- and downstream of the project area should still contribute to the productivity and food-chain support during the construction period. Post construction activities for the area include the restoration of vegetation with replacement seeding and planting of trees and shrubs in disturbed areas.

These temporary impacts to the forage base within the project area should have an insignificant effect on bull trout and should not adversely affect the continued existence of bull trout within the Flathead River. This PCE will be maintained in both the short and long terms.

PCE 4: **Complex river, stream, lake, reservoir, and marine shoreline aquatic environments, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and un-embedded substrates, to provide a variety of depths, gradients, velocities, and structure.**

The proposed bridge work occurs in the Flathead River. Shoreline excavation, grubbing, and filling activities will result in short-term degradation to shoreline habitat, but shoreline reclamation following construction will return the banks to near pre-project condition. Natural connections to the Flathead

River through tributary streams will be unaffected by the proposed project. The water level in the project area is dam controlled and will not be affected by these proposed project activities. This PCE will be maintained in both the short and long terms.

PCE 5: **Water temperatures ranging from 2 to 15 degrees Celsius (°C) (36 to 59°F) with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; stream flow; and local groundwater influence.**

Water temperatures in the project area from October through April are between 36.5°F and 41°F. Water temperatures rise in the spring where temperatures average from approximately 44°F in May to approximately 48.6°F in June. Water temperatures are warmest in July and August when the average temperatures are approximately 59°F and 62°F, respectively. The proposed project would likely not improve or cause any further degradation to the water temperature. Therefore, the proposed project will maintain existing conditions relative to this PCE in both the short and long terms.

PCE 6: **In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates, is characteristic of these conditions. The size and amounts of fine sediment suitable to bull trout will likely vary from system to system.**

This PCE is not present in the action area. The action area, which includes the Flathead River and Flathead Lake downstream, does not support bull trout spawning, but rather is considered FMO habitat for the species. The proposed project will have no effect on this PCE.

PCE 7: **A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, minimal flow departure from a natural hydrograph.**

The proposed project will have no effect on peak or base flows of the Flathead River. No effects to this PCE are anticipated.

PCE 8: **Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.**

Temporary displacement of fish in the proposed project area can occur from an increase in sediment or other changes in the river caused by construction activities. This impact could result in reductions in the short-term use by fish in the project area. Newcombe and Jensen [1996] showed that short- or long-term construction effects upon fish are based on suspended sediment mg/L over time expressed as duration in hours or days. In-stream construction activities will be done in a manner to minimize potential effects to local bull trout populations or individuals. Bull trout, if present during the construction period, are expected to avoid the area by using adjacent suitable habitat up- and downstream of the proposed project.

Increased sediment can affect adult and juvenile bull trout by changing behavior, reducing available habitat, increasing stress, and decreasing food supply. Salmonid fishes will generally avoid areas of turbid water. In streams where turbidity is elevated over a long distance for a long period of time, this can result in reaches of stream devoid of fish [Thomas, 1999].

Construction equipment working along the banks of the river, from the surface of temporary work bridges or from the deck of the existing bridge, all have the potential, albeit small, to release petroleum-based pollutants into the Flathead River or nearby wetlands during construction. These pollutants have the potential to result in harm or death to bull trout and other aquatic organisms that are important to bull trout health. Like BMPs designed to reduce sediment in the river, the standard specifications previously discussed are designed to reduce or eliminate the potential for any petroleum-based pollutants from reaching the water during construction.

Fish densities and available adjacent habitat are such that there should be suitable habitat up- and downstream of the project area to support temporary use should any bull trout in the project area need to avoid the construction area. Bull trout could return to the area after construction activities stop since adjacent habitat within the Flathead River and nearby Flathead Lake supports fish. Short-term increases in sediment or minor construction related release of petroleum into the river, are anticipated to cause a short-term degradation of this PCE while existing conditions will be maintained in the long term.

PCE 9: **Sufficiently low levels of occurrence of nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are adequately temporally and spatially isolated from bull trout.**

This PCE is impaired in the action area. Lake, brook, and rainbow trout, as well as northern pike, are all non-native competitors or predators that are present in the action area. The project will not affect presence of non-native species and will not create habitat that favors them over bull trout.

Expansion of non-native species, like the long-lived lake trout, is the single largest human-caused threat for most of the adfluvial bull trout core populations [Fredenberg, 2002; Fredenberg, 2008]. Lake trout out-compete bull trout and are considered the primary cause of bull trout decline in the entire Flathead watershed [Fredenberg, 2002; USFWS, 2002; Confederated Salish and Kootenai Tribes, 2013]. Proposed project activities are not anticipated to influence fish population distribution. The proposed project will maintain existing conditions for this PCE.

3.5.6 POTENTIAL INDIRECT IMPACT ANALYSIS

Indirect impacts are those that are caused by the action and occur later in time (after the action is completed) but are still reasonably certain to occur. The action area of the proposed project is in a semi-rural location between the communities of Bigfork and Kalispell, Montana, where human development is prevalent and on-going. The proposed bridge reconstruction is not expected to precipitate or induce human growth in the action area that would have an adverse impact to bull trout. Additionally, the project would not result in habitat alterations that would cause an indirect effect on prey abundance or availability for bull trout. This project is not expected to increase long-term ambient noise levels in the action area that would render occupied habitat less suitable.

The reconstructed FAS will provide increased access and parking with a new, two vehicle capacity boat ramp that replaces the existing one vehicle capacity ramp. These improvements to the FAS will increase accessibility to the Flathead River for recreational fishing. Angling opportunities, as provided by state regulation, could result in illegal or accidental harvest of bull trout. Several telemetry studies in the upper Clark Fork River Basin indicate that intentional and unintentional harvest is responsible for at least 10 to 15 percent of annual fluvial bull trout mortality {Knotek et al., 2004; Pierce et al., 2004; Schmetterling, 2003; Swanberg, 1997a and 1997b]. Patterns of angler use combined with bull trout behavior and life history make this species particularly susceptible to illegal harvest and potentially high rates of delayed (i.e., catch and release) mortality [Knotek, 2005]. This concern is further complicated by the ability of recreational anglers to correctly identify bull trout. In a 2004 survey of anglers in the Middle Clark Fork River Core Area, 59 percent of all anglers could correctly identify bull trout, while only 47 percent of those anglers that indicated they were intending to keep fish they caught could correctly identify bull trout [Knotek, 2005].

From an aquatic standpoint, the proposed project should not increase long-term sediment loads into the Flathead River at this location. BMPs will be implemented to minimize the potential for the addition of toxic substances during construction. Once completed, the project area will see some improvements to the channel substrate with the removal of portions of the existing piers from the area, which should replace impacted areas by restoring these previously impacted channel areas and allowing for macroinvertebrate production to balance out over time in the immediate project vicinity.

The new bridge is designed to prevent stormwater runoff, which includes deicing chemicals, road debris, and sanding materials, from directly entering the Flathead River. Deck drains will be required on the new bridge but will be located so that no runoff drains directly into the river. Embankment protectors will be placed below the drains to filter out contaminants and will be placed a sufficient distance from the edge of the river to allow adequate time for filtration. Some riparian trees and shrubs will be removed with the construction of the new bridge ends and roadway approaches on the east and west banks of the river. Stream function should remain the same as sediment transport capacity, channel stability, width-to-depth ratio, and deep-pool habitat for bull trout should be maintained. The proposed project should not have any long-term effects on water quality and long-term stream function, nor will it deter fish, such as bull trout, from returning to this reach of the Flathead River once all construction activities are complete.

3.5.7 DETERMINATION OF EFFECT

The following list provides the dichotomous key for making the ESA determination of effects (conclusions are in bold):

1. Are there any proposed/listed fish species and/or proposed/designated critical habitat in the watershed or downstream from the watershed? (See Section 3.5.3 regarding distribution in the project area)
    a. No – No Effect
    b. **Yes (or unknown) – Go to 2**
2. Will the proposed action(s) have any effect whatsoever on the species designated or proposed critical habitat; seasonally or permanently occupied habitat; or unoccupied habitat necessary

for the species' survival? (See Section 3.5.4 for potential impacts from bridge construction to bull trout habitat)

   a. No – No Effect
   b. **Yes (May Affect) – Go to 3**

3. Does the proposed action(s) have the potential to result in "take" of any proposed/listed fish species?
   a. No – Go to 4
   b. **Yes – Likely to Adversely Affect**

Bull trout are considered common near the MT 82 Flathead River Bridge project. The Flathead River is considered foraging, migration, and overwintering habitat for the species and individual adults of the species could occupy habitat in the vicinity of the bridge during construction. Because of the potential for "take" from the in-stream pier construction, work bridge installation in the river, removal of existing piers during demolition of the existing bridge, and work on or near the riverbanks during construction of the new bridge, this project is likely to adversely affect bull trout.

3.5.7.1 DETERMINATION

Based on the above information and implementation of specified conservation measures, a ***May Affect, Likely to Adversely Affect*** determination is rendered relative to the bull trout. Additionally, the project will have temporary adverse effects to federally designated critical habitat for bull trout as described above. Therefore, the project ***May Affect and is Likely to Adversely Affect*** bull trout critical habitat.

3.6 YELLOW-BILLED CUCKOO

3.6.1 SPECIES STATUS, DISTRIBUTION, AND REASONS FOR DECLINE

The western DPS of the yellow-billed cuckoo was listed as a threatened species by the USFWS on October 3, 2014 (79 FR 59991-60038). In Montana, the western quarter of the state (west of the Continental Divide) was included in the DPS by the USFWS although very few records of the species in Montana exist (79 FR 59991-60038). The yellow-billed cuckoo is a migratory species, which winters in South America and breeds in North America. Once thought to breed in most of the western United States and Canada, the species no longer breeds in western Canada, Washington, Oregon, and Montana. The species is also considered very rare in Utah, Colorado, and Wyoming. The USFWS notes the primary factors threatening the western DPS is loss and degradation of habitat for the species from altered watercourse hydrology and natural stream processes, livestock overgrazing, encroachment from agriculture, and conversion of native habitat [USFWS, 2021b].

On April 21, 2021, the USFWS issued a final rule designating critical habitat for the western DPS of the yellow-billed cuckoo (86 FR 20798-21005). In total, approximately 298,845 acres were designated as critical habitat in Arizona, California, Colorado, Idaho, New Mexico, Texas, and Utah. No designated critical habitat occurs in Montana.

3.6.2 LIFE HISTORY AND HABITAT REQUIREMENTS

Yellow-billed cuckoos migrate north from South America in the spring to breeding grounds in the southwestern United States. Preferred breeding habitat includes open woodland (especially where undergrowth is thick), parks, and deciduous riparian woodland. In the west, the yellow-billed cuckoo nests in tall cottonwood and willow riparian woodlands. Nests are found in trees, shrubs, or vines and average 1 to 3 meters above ground [MTNHP, 2021b]. No information is available for feeding habits in Montana but the main diet is caterpillars across its range [MNTHP, 2021b].

3.6.3 OCCURRENCE IN ACTION AREA

Recorded sightings of yellow-billed cuckoos in Montana are rare and no documented breeding records exists. Montana sightings are likely of transient migratory birds passing through the state [MTNHP, 2021b]. Previous sightings have occurred in Flathead, Lake, Missoula, and Ravalli Counties [MTNHP, 2021b]. A small amount of suitable riparian forest habitat for the species occurs along the east shore of the Flathead River within the Action Area on both sides of MT 82.

3.6.4 POTENTIAL IMPACT ANALYSIS

The alignment of the new bridge will be shifted to the south, which will require the construction of new approach sections on either end of the bridge that will tie back into the existing roadway. Riparian habitat east of the Flathead River and south of the existing bridge will be impacted by the construction of the new approach section for this side of the river. Any yellow-billed cuckoos occupying this area would likely be displaced by construction activities. Removal of several large deciduous trees and other riparian vegetation suitable for yellow-billed cuckoos will occur within the new approach ROW. However, all vegetation removal will occur between August 16 and April 15, outside of the nesting season, as required by the Migratory Bird Treaty Act. Based on the rarity of yellow-billed cuckoo sightings in Montana, cuckoos are unlikely to be occupying this habitat during construction, and any birds that were present would likely be migratory individuals that would move on from the area. No other impacts to the yellow-billed cuckoo are anticipated with this project.

3.6.5 DETERMINATION OF EFFECT

A small amount of riparian forest habitat suitable for the yellow-billed cuckoo is present within the Action Area and is likely to be impacted by the realignment of the highway to accommodate the new bridge. Therefore, impacts to the yellow-billed cuckoo cannot be completely ruled out. However, there are few documented records of this species in Montana and this habitat is unlikely to be occupied during construction. Therefore, a ***May Affect, Not Likely to Adversely Affect*** determination is rendered for the yellow-billed cuckoo.

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APPENDIX A

FLATHEAD RIVER – 3 M NW BIGFORK PRELIMINARY ROADWAY PLANS AND BRIDGE LAYOUT