UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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May 2, 2024

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U.S. Department of Transportation
Federal Highways Administration, Idaho Division
3050 Lakeharbor Lane, Suite 126
Boise, ID 83703-6354

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson–Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Hat Creek Bridge Project (KN 20450), Idaho County, Idaho (HUC 17060210)

Dear Ms. Tipuric:

This letter responds to your May 30, 2023 request for initiation of formal consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Hat Creek Bridge project. You also requested consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson–Stevens Fishery Conservation and Management Act (MSA) [16 U.S.C. 1855(b)] for this action. Your request qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to listed species, designated critical habitat, and EFH.

The Federal Highway Administration (FHWA) submitted a consultation initiation package to NMFS on May 30, 2023. After our review, NMFS continued to coordinate with the FHWA and the Biological Assessment (BA) author regarding the proposed action. The FHWA concluded the proposed action may affect and is likely to adversely affect (LAA) Snake River Basin steelhead (*Oncorhynchus mykiss*) and its designated critical habitat, and may affect, but is not likely to adversely affect (NLAA) Salmon River spring/summer-run Chinook salmon (*O. tshawytscha*) and its designated critical habitat. NMFS agrees with FHWA's determination for steelhead, but believes the proposed action is also likely to adversely affect Chinook salmon, as juvenile Chinook may be present in Hat Creek immediately below the culvert outlet, downstream to the mouth. Furthermore, Hat Creek is designated critical habitat for Snake River spring/summer Chinook salmon and NMFS believes the proposed action is also likely to adversely affect Chinook salmon designated critical habitat.

A copy of the Hat Creek Bridge Hydraulic Report (Idaho Transportation Department, 2022) was provided to NMFS on July 7, 2023 and was reviewed by a NMFS engineer who confirmed the

design adhered to the NMFS fish passage guidelines (NMFS 2022a). On September 15, 2023, NMFS replied to the FHWA indicating their submittal was sufficient to initiate formal consultation. FHWA provided NMFS additional project information, when requested, through February 23, 2024.

On July 5, 2022, the U.S. District Court for the Northern District of California issued an order vacating the 2019 regulations that were revised or added to 50 CFR part 402 in 2019 ("2019 Regulations," see 84 FR 44976, August 27, 2019) without making a finding on the merits. On September 21, 2022, the U.S. Court of Appeals for the Ninth Circuit granted a temporary stay of the district court's July 5 order. On November 14, 2022, the Northern District of California issued an order granting the government's request for voluntary remand without vacating the 2019 regulations. The District Court issued a slightly amended order two days later on November 16, 2022. As a result, the 2019 regulations remain in effect, and we are applying the 2019 regulations here. For purposes of this consultation and in an abundance of caution, we considered whether the substantive analysis and conclusions articulated in the biological opinion and incidental take statement would be any different under the pre-2019 regulations. We have determined that our analysis and conclusions would not be any different.

Where relevant, we have adopted the information and analyses the FWHA provided and/or referenced in the (BA) (FHWA 2023), but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. NMFS has supplemented the BA with additional information, when necessary. We adopt by reference here the following sections of the BA:

- Section 3 and Appendices B and C for the description of the proposed action, action area, and best managements practices (BMPs) to minimize effects of the proposed action;
- Section 4.1 for occurrence and status of listed species and critical habitat in the action area;
- Section 5.5 and 5.6 for the description of the environmental baseline and for the effects of the proposed action on ESA-listed species and their critical habitat;
- Section 6.5 and 6.6 for the summary effects determination on ESA-listed species and critical habitat;
- Section 7 for the EFH effects determination.

Proposed Action. Details of the proposed action can be found in Section 3 and Appendices B and C of the BA and are adopted here. The proposed action includes road widening and replacing the existing concrete culvert on US Highway 95 over Hat Creek near the confluence with the Little Salmon River with a new bridge structure. Currently, the highway has two lanes over a culvert that is 12 feet wide and 56 feet long. The new bridge will accommodate a three-lane highway (approximately 56 feet wide) and will be about 83 feet long. The new bridge will increase stream capacity, improve drainage features, provide aquatic organism passage, improve infrastructure, increase safety, and enhance the mobility of the traveling public. Assuming a

standard existing paved surface for a two-lane highway of 34 feet (Appendix C, Sheet 6 of 14, of the BA), the proposed action will increase pollutant-generating impervious surface (PGIS) by about 4,200 square feet (ft^2)[1].

In summary, the proposed action involves the following elements, phased in 5 stages:

- Stage 1: Traffic will be routed to the existing northbound lane (east side), temporary shoring will be installed, a temporary traffic signal will be used, and the existing southbound lane (west side) will be removed.
- Stage 2: Prestressed Deck Bulb-Tee (DBT) girders for the new bridge deck will be installed above the ordinary high water mark (OHWM) and the new southbound lane will be constructed along with half of the abutments, to be installed on each side of Hat Creek.
- Stage 3: Traffic will be routed to the finished southbound lane, temporary shoring will be installed, the existing northbound lane will be removed, and a stream diversion will be installed.
    - Approximately 135 linear feet of Hat Creek will be dewatered for up to 2 months.
    - Dewatering will occur during an extended work window of July 15 – September 15.
    - Qualified biologists will perform fish salvage operations during dewatering of construction areas to isolate construction activities from flowing water. All fish salvage work will occur under the supervision of an Idaho Fish and Game (IDFG), Nez Perce Tribe, NMFS, or US Fish and Wildlife Service biologist, or a qualified designee as approved by the Idaho Transportation Department (ITD) Environmental Planner.
- Stage 4: The second half of each abutment will be constructed and DBT girders for the new bridge deck will be installed to form the new northbound lane; the existing concrete culvert will be removed.
- Stage 5: The Hat Creek channel will be regraded, and 400 ft^2 of riprap will be placed.
    - Approximately five trees will be removed where riprap is placed.
    - Approximately 0.2 acres of riparian habitat will be disturbed, including 406 ft^2 of permanent wetland impacts due to the placement of new riprap.
    - Fines will be run through the riprap in a controlled manner to ensure no sediment plume will leave the site during re-watering.
    - The diversion will be removed and water will be returned to the new channel.
    - Within 200 feet of the stream, disturbed areas, including the embankments on both sides of the roadway, will be seeded.

As described in Section 3.4.8 of the BA, several BMPs will be implemented to minimize runoff, wastewater, debris, and contaminants from entering the aquatic habitat. Wetland impacts would be mitigated as described in the Wetland Mitigation for EO 11990 Requirements document

[1]The estimated bridge PGIS was calculated by subtracting the existing PGIS (83 feet times 34 feet) from the proposed PGIS (83 feet x 56 feet). The estimated bridge approach PGIS was calculated by assuming an equally tapered approach (to accommodate the road widening from two to three lanes) of approximately 100 linear feet on either side of the bridge. The total new PGIS for these approaches was assumed to equal 2,200 ft^2 [100 x (56-34)].

(Anderson Environmental Consulting 2024). Additional stormwater management at the new bridge due to increased PGIS is not proposed.

We considered, under the ESA, whether or not the proposed action would cause any other activities and determined that it would not.

Status of Species and Designated Critical Habitat. We examined the status of each species that would be adversely affected by the proposed action to inform the description of the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. Snake River Basin (SRB) steelhead and Snake River spring/summer-run Chinook salmon occur within the action area (BA, Sections 4.1.4 and 4.1.3, respectively). NMFS recently concluded the SRB steelhead distinct population segment (DPS) continues to be at a moderate risk of extinction within the next 100 years. None of the major population groups within the DPS are meeting their recovery plan objectives and the viability of many populations remains uncertain (NMFS 2022a). Similarly, NMFS recently concluded that the collective risk to the persistence of Snake River spring/summer Chinook salmon evolutionary significant unit (ESU) has increased since the previous 5-year review. None of the MPGs within the ESU are meeting their recovery plan objectives and the vast majority of populations are at high risk. Overall, the species is at a moderate-to-high risk of extinction (NMFS 2022b).

We also examined the condition of critical habitat throughout the designated area and discussed the function of the physical or biological features (PBFs) essential to the conservation of the species that create the conservation value of that habitat. NMFS designated critical habitat for Snake River spring/summer-run Chinook salmon throughout its current range, including the mainstem Columbia and Snake River migration corridor and the spawning and rearing areas in the lower Snake River and the lower reaches of its tributaries. Across these areas, human activities and climate change have disrupted watershed processes and the functioning of PBFs. This has reduced water and habitat quality and quantity as well as habitat complexity. Measures taken through the efforts of Federal, tribal, state, local, and private entities in the past two decades have improved the functioning of PBFs in some of the spawning and rearing areas and in the mainstem and tributary migration corridors. More improvements will be needed before critical habitat supports the recovery of Snake River spring/summer-run Chinook salmon and Snake River Basin steelhead.

More information on the current status of the species, designated critical habitat, and limiting factors can be found in the latest 5-year reviews (NMFS 2022b, c), final recovery plan (NMFS 2017), and on NMFS' consultation website[2]. These documents are incorporated by reference.

Action Area. Under the ESA, "action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Section 3.5 of the BA identifies the aquatic portion of the action area to extend approximately 50 feet upstream and 200 feet downstream of the existing culvert. This includes Hat Creek and approximately 70 linear feet of nearshore habitat in the Little Salmon River. The terrestrial portion of the action area includes the areas of vegetation removal and scour protection along the

[2] https://www.fisheries.noaa.gov/west-coast/consultations/esa-Section-7-consultations-west-coast#snake-river-(north)

shoreline and the existing and proposed roadway, approaches, and upland areas adjacent to US 95 that will require improvements. NMFS provides the following to supplement the delineation of the action area in the BA. Based on the anticipated impacts of sedimentation from installation of the proposed bridge, primarily removal of the existing concrete culvert and the dewatering of Hat Creek, we believe the instream portion of the action area extends 50 meters above the existing culvert in Hat Creek to 500 meters (approximately 1,640 feet) downstream of the proposed activities into the Little Salmon River. This assumption is based on turbidity monitoring reports from past projects in Idaho, which involved reconstruction of stream channels, including culvert, bridge, and diversion replacement projects (Eisenbarth 2013; Connor 2014).

Environmental Baseline. The "environmental baseline" refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early Section 7 consultations, and the impact of State or private actions, which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02). The environmental baseline is described in Section 5 of the BA and is adopted here.

The action area is used by (SRB) steelhead and Snake River spring/summer-run Chinook salmon and is designated critical habitat for both species. Steelhead within the action area belong to the Little Salmon River steelhead population, which is currently viable and meets the population's proposed recovery goal. Chinook salmon within the action area belong to the Little Salmon River population, which is currently at high risk of extinction and does not meet its proposed recovery goal. Juvenile Chinook salmon are the only life stage that are likely to be present in Hat Creek. Adult Chinook salmon are not expected to utilize Hat Creek given the stream characteristics (e.g., small size, substrate, gradient). All life stages of steelhead may utilize Hat Creek. The Little Salmon River is used by adult and juvenile Snake River spring/summer Chinook salmon and SRB steelhead. Both species also spawn in the Little Salmon River in areas where there is suitable substrate. Habitat within the action area is degraded, but serves as spawning and rearing habitat for Snake River spring/summer-run Chinook salmon and SRB steelhead.

Effects of the Action. Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

The BA provides a detailed discussion and assessment of the effects of the proposed action in Sections 5.5, 5.6, 6.5, and 6.6, and are adopted here [50 CFR 402.14(h)(3)]. NMFS has supplemented the BA with additional information where necessary.

The life stages of Snake River spring/summer run Chinook salmon that may present in the action area and affected by the proposed action are rearing juveniles and migrating adults in the Little Salmon River and juveniles in lower Hat Creek. Juvenile Snake River spring/summer-run Chinook may be present in the lower 40 feet (40 feet by 10 feet, or 400 ft^2) of the dewatered area in Hat Creek below the concrete culvert. Due to the in-water work window, we believe that only the juvenile life stage of SRB steelhead may be present in the action area and affected by the construction activities. Juvenile SRB steelhead may be present in the entire dewatered area in Hat Creek (135 feet by 10 feet, or 1,350 ft^2) during the removal of the existing concrete culvert.

Effects to Species. Potential adverse effects to juvenile Snake River spring/summer Chinook salmon and juvenile SRB steelhead identified in the BA result from:

- Turbidity/sediment deposition
- Construction noise and heavy equipment use
- Dewatering and fish salvage operations

Additional potential adverse effects to juvenile Snake River spring/summer Chinook salmon and juvenile SRB steelhead identified by NMFS may result from:

- Habitat disturbance and removal
- Stormwater management at the new bridge

NMFS has evaluated the species effects sections of the BA and, after our independent, science-based evaluation, determined that the additional information provided below is needed to complete our analysis.

Increases in Turbidity/Sedimentation. Excavation for abutments; excavation and fill for lane construction and widening, dewatering and re-watering the Hat Creek channel, excavation for removing the existing culvert, re-grading the Hat Creek channel, and riprap placement in the channel have the potential to affect the water quality in the action area through increases in suspended sediment/turbidity and cobble embeddedness. Elevated turbidity can cause lethal, sublethal (gill-flaring, coughing), and behavioral (avoidance, temporary displacement from preferred habitat) effects in juvenile and adult salmonids, depending on the duration, frequency, and intensity of the exposure (Newcombe and Jensen 1996, Bisson and Bilby 1982; Sigler et al. 1984; Berg and Northcote 1985; Servizi and Martens 1992). Lloyd (1987) suggested that salmonids reacted negatively, by moving away, when turbidity reached 50 nephelometric turbidity units (NTU). Although elevated turbidity levels may cause stress, Gregory and Northcote (1993) have shown that moderate levels of turbidity (35 to 150 NTU) can also accelerate foraging rates among juvenile Chinook salmon, likely because of reduced vulnerability to predators (camouflaging effect).

Implementation of proven sediment control BMPs, including the use of sediment barriers, will minimize the magnitude, duration, and frequency of turbidity pulses into Hat Creek during construction. According to information in the BA, most sediment is expected to settle out within 150 feet. Turbidity monitoring will occur and activities will be suspended if turbidity levels exceed 50 nephelometric turbidity units (NTU). Therefore, NMFS expects that any suspended sediment during Phase 1-4 of construction will be low in intensity and of short duration, and will not reach levels that will directly kill or injure any ESA-listed fish.

NMFS expects that turbidity plumes associated with re-watering the channel could extend up to 500 meters (1,640 feet) downstream of the proposed activities and into the Little Salmon River. As stated above, this assumption is based on turbidity monitoring reports from past projects in Idaho. For the purpose of this consultation, NMFS expects elevated turbidity levels of up to 50 NTUs over background levels for 1.5 hours after site re-watering, with turbidity plumes lasting up to 6 hours. Juvenile fish will likely respond to the turbidity plume for this distance by avoiding the plume and temporarily seeking refuge nearby. NMFS does not expect turbidity due to re-watering to reach levels that will directly kill or injure juvenile Snake River spring/summer run Chinook salmon or SRB steelhead. However, harm is likely to occur to a very small number of these juveniles, as exposure to predators will likely increase as they seek alternate rearing habitat to avoid elevated turbidity.

Construction Noise and Heavy Equipment Use. Operation of heavy equipment near streams creates noise, water disturbance via vibrations, and visual stimulus. Juvenile Snake River spring/summer run Chinook salmon and SRB steelhead may be present in the vicinity of construction activities. We do not expect juveniles to be harmed as a result of construction noise; however, they may be disturbed by the noise and heavy equipment use. Because these activities will occur intermittently "in the dry" during daylight only and noise levels associated with operation of heavy equipment are at least an order of magnitude lower than established underwater sound pressure thresholds, we believe short-term juvenile movements caused by construction equipment noise and activities will be minor and will not significantly alter normal behavior patterns.

Dewatering and Fish Salvage Operations. As described above, Hat Creek will be dewatered to remove the existing culvert, re-grade the stream channel, and place new riprap. Juveniles could be stranded or impinged on the screen face if pumps are used. Impingement will be minimized by adhering to NMFS fish screening criteria. Fish salvage operations will be necessary to remove fish trapped within the dewatered area, which may require electrofishing, fish handling, and fish transport. These activities will result in harassment, injury, or mortality of a very small number of juvenile SRB steelhead or Snake River spring/summer Chinook. As stated above, juvenile Snake River spring/summer-run Chinook may be present in the lower 40 feet (40 feet by 10 feet, or 400 ft^2) of the dewatered area in Hat Creek below the concrete culvert juvenile SRB steelhead may be present in the entire dewatered area in Hat Creek (135 feet by 10 feet, or 1,350 square ft^2) during the removal of the existing concrete culvert.

Limited data exist regarding juvenile salmon and steelhead densities within the Little Salmon River and its tributaries. However, Mullan et al. (1992) reported that juvenile steelhead and spring Chinook salmon densities in tributary habitats of the Columbia River averaged two and

one half individuals of each species per thousand square feet surface area. Based on this information, it is estimated that approximately four juvenile steelhead may be injured or killed by fish salvage activities associated with the proposed action (2.5 x 1,350 ft^2/1,000 ft^2 = 3.375, rounded up to 4). In addition, approximately 1 juvenile spring/summer-run Chinook salmon may be injured or killed by fish salvage activities associated with the proposed action (2.5 x 400 ft^2/1,000 ft^2 = 1.0), below the culvert in the dewatered area. To account for natural variability, NMFS will double the number of juveniles of each species expected to be injured or killed to be eight juvenile steelhead and two juvenile spring/summer-run Chinook salmon.

Habitat Disturbance and Removal. The proposed action would reduce quality of Snake River spring/summer Chinook salmon and SRB steelhead rearing habitat by disturbing 0.2 acres of riparian habitat and armoring approximately 400 ft^2 of streambank. The placement of riprap typically causes adverse effects to stream morphology, salmonid habitat, and salmonid populations (USFWS 2000; Schmetterling et al. 2001; Garland et al. 2002). As reported by WDFW (2002), juvenile life stages of salmonids are especially affected by riprap. Rearing juveniles depend on cover provided by undercut banks and overhanging vegetation for resting, feeding, and protection from predation. Riprapping streambanks replaces these types of habitat features with rock, which typically results in poorer quality habitat that supports fewer rearing juvenile salmonids (Garland et al. 2002). Over time, woody vegetation can encroach on riprapped streambanks and partially restore some of the habitat function, but recovery of vegetation is likely to be minimal. Therefore, we expect 0.2-acre disturbance, including the permanent loss of 400 ft^2 of riparian habitat, to adversely affect a small number of juveniles for many years in the form of lost terrestrial forage, lost hiding cover, and, therefore, increased risk of predation.

Stormwater Management at the New Bridge. Stormwater runoff from roads conveys pollutants to surface water bodies. The main pollutants of concern to ESA-listed fish species and aquatic habitats are from vehicle sources (i.e., zinc, copper, 6PPD-q) and total suspended solids (Masoner et al. 2019;). Stormwater can also deliver other pollutants that accumulate on roadway surfaces (e.g., petroleum hydrocarbons, excess nutrients, and pesticides). Many stormwater runoff pollutants are persistent in the aquatic environment, travel long distances in solution or adsorbed onto suspended sediments, and may become remobilized or re-enter solution as they move through the system, especially during high-flow events. These pollutants can be toxic to fish even at very low concentrations, ranging in effects from reduced growth, reproduction, and migratory success to direct mortality.

The existing ditches within the action area drain toward Hat Creek. The proposed action will increase PGIS by about 4,200 ft^2 within the action area; however, no additional stormwater management is proposed. It is unlikely that 100 percent of stormwater runoff will infiltrate in the drainage ditches; rather, stormwater runoff from the roadway is expected to discharge to Hat Creek. Recent publications identified a degradation product of tires (6PPD-quinone) as the causal factor in salmonid mortalities of less than a part per billion (Peter et al. 2018, Tian et al. 2020, Brinkmann et al. 2022, French et al. 2022). Mortality was observed following short-term exposures to low contaminant concentrations. The parent compound (6PPD) is widely used by multiple tire manufacturers and the tire shreds/dust that produce the degradation product have been found to be ubiquitous where both rural and urban roadways drain into waterways (Feist et

al. 2018, Sutton et al. 2019). We expect stormwater runoff from the increase in impervious service to adversely affect a small number of juveniles that reside in the action area. Given the lack of holding habitat for adult salmonids, adult Snake River spring/summer Chinook salmon and adult SRB steelhead are expected to quickly migrate through the action area in the future and are not expected to be exposed to contaminant concentrations originating from the action area for sufficient periods of time to elicit adverse effects.

Effects to Critical Habitat. Critical habitat within the action area has an associated combination of PBFs essential for supporting freshwater rearing and migration of juvenile Snake River Spring/summer Chinook salmon and SRB steelhead. Proper function of these PBFs is necessary to support successful juvenile growth and development, rearing, and migration. In Sections 5.6 and 6.6, the BA identifies a number of effects to the PBFs of critical habitat found in the action area that will be temporary and minimal, ultimately determining that the proposed action will not adversely affect critical habitat. After our independent, science-based evaluation, we determined that the PBFs adversely affected by the proposed action include water quality and riparian vegetation and are discussed below.

Water Quality. As discussed above, stormwater runoff from roads conveys pollutants to surface water bodies and the main pollutants of concern are from vehicle sources (i.e., zinc, copper, 6PPD-q), total suspended solids, and other pollutants that accumulate on roadway surfaces (e.g., petroleum hydrocarbons, excess nutrients, and pesticides). The proposed action will increase the PGIS in the action area by about 4,200 ft^2 with no proposed additional stormwater management. Therefore, we believe the proposed action will adversely affect the water quality PBF of critical habitat.

Natural Cover/Riparian Vegetation/Rearing Habitat. As discussed above, the proposed action would disturb 0.2 acres of riparian habitat and armor approximately 400 ft^2 of streambank with riprap. We expect this disturbance and permeant loss of habitat to adversely affect the riparian vegetation PBF of critical habitat for many years upon completion of the proposed action.

Cumulative Effects. "Cumulative effects" are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation [50 CFR 402.02 and 402.17(a)]. 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. Non-federal actions are likely to include activities associated with recreational activities including fishing, hiking, and boating. Although not quantifiable, these non-federal actions are likely to have adverse effects on Snake River spring/summer-run Chinook salmon and Snake River Basin steelhead at levels similar to those observed in recent years. Therefore, NMFS does not expect cumulative effects in the action area to further reduce the conservation value of Snake River spring/summer-run Chinook salmon and Snake River Basin steelhead critical habitat, or the productivity, spatial distribution, or abundance of Snake River spring/summer-run Chinook salmon and Snake River Basin steelhead within the action area.

Integration and Synthesis. The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the

proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

Species. Populations of Snake River spring/summer-run Chinook salmon and SRB steelhead experienced increases in abundance relative to the time of ESA listing, through the mid-2000s. During the past six years, abundance has dropped, with many populations nearing levels observed when the species were listed. Observed declines have been similar for all populations in the ESU and DPS and are believed to be tied to recent ocean conditions (Ford 2022). In addition to abundance and productivity concerns for these species, climate factors will likely make it more challenging to increase abundance and recover the species (NMFS 2017; Crozier et al. 2019).

The South Fork Salmon River MPG of Snake River spring/summer-run Chinook salmon is not viable overall, and the Little Salmon population does not meet viability criteria, though data are limited. For the MPG to be viable and reach recovery goals, two of the populations must be restored to viable status, with at least one of these highly viable and the rest meeting a maintained status. The Salmon River MPG of Snake River Basin steelhead is not viable overall, but the Little Salmon population has a viable rating. For the MPG to be viable and reach recovery goals, two additional populations must be viable and the remaining populations must be rated as at least maintained.

Based on the species life stages and the activities described in the submitted BA and supplemental information, NMFS expects injury or death to a small number of juvenile Snake River spring/summer Chinook salmon and SRB steelhead within the action area from:

- Avoidance of turbidity 1,640 feet downstream of the project site during re-watering, which increases the risk of juveniles to predation;
- Fish capture and handling, which will result in mortality of an estimated 8 juvenile SRB steelhead and 2 juvenile spring/summer-run Chinook salmon during salvage operations;
- Habitat disturbance (0.2 acres) and riprap placement (400 ft^2), which results in lost terrestrial forage, lost hiding cover, and, therefore, increased predation for the foreseeable future; and
- Stormwater management for the life of the new bridge associated with 4,200 ft^2 of new PGIS.

These adverse effects would occur to a small number of juveniles from the Little Salmon River population of Snake River spring/summer-run Chinook salmon or Lower Mainstem population of Snake River Basin steelhead. This loss is not substantial enough to appreciably alter the abundance, productivity, spatial structure, or diversity of either of these populations or the MPGs. It is NMFS' opinion that when the effects of the action and cumulative effects are added to the environmental baseline, and in light of the status of the species, the effects of the action

will not directly or indirectly reduce appreciably the likelihood of both the survival and recovery of Snake River spring/summer-run Chinook salmon or Snake River Basin steelhead.

Critical Habitat. The action area is designated as critical habitat for Snake River spring/summer-run Chinook salmon and Snake River Basin steelhead, providing spawning, rearing and migration habitat for juveniles. Critical habitat in the action area is degraded due to presence of the highway and existing culvert. Climate change and human development have and continue to adversely impact critical habitat creating limiting factors and threats to the recovery of Snake River spring/summer-run Chinook salmon and Snake River Basin steelhead. Cumulative effects are likely to continue to impact critical habitat at current levels.

Based on the activities described in the submitted BA and supplemental information, NMFS expects the proposed action to result in adverse effects to critical habitat within the action area from:

- Habitat disturbance (0.2 acres) and riprap placement (400 ft^2), which results in lost terrestrial forage and lost hiding cover for the foreseeable future; and
- Stormwater management for the life of the new bridge associated with 4,200 ft^2 of new PGIS.

In addition, the proposed action will improve fish passage through the removal of the barrier associated with the existing concrete culvert being replaced by the new bridge.

Based on our analysis that considers the current status of PBFs, adverse effects from the proposed action will cause a temporary and localized decline in the quality and function of PBFs in the action area. Overall, we also expect an improvement in the safe passage PBF. Because of the small scale and extent of the effects to PBFs, we do not expect a reduction in the conservation value of critical habitat in the action area. As we scale up from the action area to the designation area of critical habitat for each species, the proposed action is not expected to appreciably reduce the conservation value of the designated critical habitat.

Conclusion. After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of Snake River spring/summer-run Chinook salmon or Snake River Basin steelhead or destroy, or adversely modify, their designated critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to Section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Harass" is further defined by interim guidance as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly

disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding, or sheltering." "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and Section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

Amount or Extent of Take. In the biological opinion, NMFS determined that incidental take of juvenile Snake River Spring/summer Chinook salmon and SRB steelhead is reasonably certain to occur as follows:

1. Short-term increased predation due to avoidance of turbidity plumes during re-watering;
2. Fish capture and handling during dewatering; and
3. Long-term increased predation from lost terrestrial forage and lost hiding cover due to the placement of the new bridge.
4. Long-term adverse effects due to increased stormwater from the addition of 4,200 ft^2 of PGIS.

We expect a small number of juveniles from the Little Salmon River population of Snake River spring/summer-run Chinook salmon or Lower Mainstem population of Snake River Basin steelhead to be injured or killed.

Incidental Take from Turbidity and Increased Predation. NMFS anticipates the proposed action will result in adverse effects to juvenile Snake River spring/summer-run Chinook and SRB steelhead due to increased turbidity during re-watering. Take in the form of harm caused by the temporary increases in turbidity will be manifested in altered behaviors including avoidance of the area, abandonment of cover, and exposure to predators. We expect the turbidity plume associated with re-watering the channel to extend up to 500 meters (1,640 feet) downstream with turbidity levels of up to 50 NTUs over background levels for 1.5 hours after site re-watering and lasting up to 6 hours. It is not possible to determine the number of juveniles that may be preyed upon as a result of avoiding the turbidity plume. Therefore, NMFS uses a surrogate for incidental take caused by the turbidity. The surrogate is the areal extent of the turbidity plume. The surrogate is causally linked to the take pathways because the scale of the effect is related to the size of the turbidity plume. Thus, the extent of take will be exceeded if turbidity plumes greater than 50 NTU above background levels extend further than 150 feet below the work area. While this surrogate may be considered coextensive with the proposed action, it functions as an effective reinitiation trigger because turbidity plumes will be monitored.

Incidental Take from Dewatering and Fish Salvage. NMFS was able to quantify the take of juvenile Snake River spring/summer-run Chinook and SRB steelhead associated with dewatering and fish salvage within isolated areas of Hat Creek We estimated that up to eight juvenile steelhead and two juvenile spring/summer-run Chinook salmon would be handled or lethally harmed during the proposed salvage operations. Therefore, take would be exceeded if more than eight juvenile steelhead or more than two juvenile spring/summer-run Chinook salmon were captured, injured, or killed during fish salvage and dewatering activities.

Incidental Take from Lost Habitat and Increased Predation. NMFS anticipates the proposed action will result in adverse effects to juvenile Snake River spring/summer-run Chinook and SRB steelhead from the disturbance of 0.2 acres of habitat, including the permanent loss of 400 ft^2 of habitat due to the placement of riprap. Take in the form of harm caused by the lost habitat will be manifested in exposure to predators. It is not possible to determine the number of juveniles killed by the disturbance or loss of riparian habitat. Therefore, NMFS uses a surrogate for incidental take caused by the action. The surrogate is the areal extent of the habitat disturbed and permanently lost. The surrogate is causally linked to the take pathways because the scale of the effect is related to the size of the disturbance. Thus, the extent of take will be exceeded if habitat disturbance exceeds 0.2 acres or if riprap placement exceeds 400 ft^2. While this surrogate is considered coextensive with the proposed action, it functions as an effective reinitiation trigger because the amount of habitat disturbed will be monitored.

Incidental Take from Increased Stormwater Runoff. NMFS anticipates the proposed action will result in adverse effects to juvenile Snake River spring/summer Chinook salmon and SRB steelhead associated with increased stormwater runoff from new PGIS into Hat Creek. Juvenile fish will be exposed to contaminate concentrations for sufficient periods and will be killed. It is not possible to determine the number of juveniles killed as a result of stormwater contamination; therefore, NMFS uses the area of new PGIS as a surrogate for incidental take caused by the proposed action. The surrogate is causally linked to the take pathway because the scale of the effect is related to the extent of new PGIS. Thus, the extent of take will be exceeded if more than 4,200 ft^2 of new PGIS is established. While this surrogate may be considered coextensive with the proposed action, it functions as an effective reinitiation trigger because the amount of new PGIS will be monitored.

Effect of the Take. In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures. "Reasonable and prudent measures" (RPMs) are measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

The FHWA, or Idaho Transportation Department (ITD) as the local representative, shall:

1. Minimize incidental take by ensuring that turbidity is monitored and mitigated to the fullest extent practicable.
2. Minimize incidental take by ensuring that fish salvage operations are monitored and mitigated to the fullest extent practicable.
3. Minimize incidental take by ensuring loss of riparian habitat is monitored and mitigated to the fullest extent practicable
4. Minimize incidental take by infiltrating stormwater to the fullest extent possible.
5. Track, monitor, and report on the project to ensure that it is implemented as proposed and that the amount and extent of take is not exceeded.

Terms and Conditions. In order to be exempt from the prohibitions of Section 9 of the ESA, the FHWA must comply (or must ensure that ITD complies) with the following terms and conditions (T&Cs). The FHWA, or ITD, or any other applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. To implement RPM 1 (turbidity), FHWA or ITD shall ensure the following:
    a. NTUs are recorded:
        i. Above the project site,
        ii. Immediately below the project site, and
        iii. No more than 150 feet downstream of the project site.
    b. NTUs are recorded at the following times:
        i. Prior to re-watering of the channel, and
        ii. At 30-minute intervals after re-watering begins.
    c. NTU monitoring shall continue until values have decreased below the Idaho state standard or for 6 hours, whichever is achieved first.
    d. If the results of NTU monitoring indicate that the extent of take may have been exceeded, then the action agencies shall coordinate with NMFS to determine if further action or additional monitoring efforts may be necessary.
2. To implement RPM 2 (fish salvage), FHWA or ITD shall ensure the following:
    a. All juveniles handled are returned to Hat Creek below the dewatered reach.
    b. Monitor, record, and report the number of spring/summer-run Chinook salmon and steelhead captured, harmed, or killed during Hat Creek dewatering and fish salvage.
3. To implement RPM 3 (loss of riparian habitat), FWHA shall ensure the following:
    a. Native grasses, shrubs, and/or small trees will be planted in the disturbed riparian areas.
4. To implement RPM 4 (stormwater management at the new bridge), the FWHA or ITD shall ensure the following:
    a. Stormwater management features will be enhanced (either through expansion or addition of settling basins), as practicable, to facilitate infiltration of as much stormwater runoff as the site features will allow.
5. To implement RPM 5 (project monitoring) the FWHA or ITD shall ensure that within 90 days following the completion of the proposed construction project, the ITD shall report all monitoring items to include, at a minimum, the following:
        i. Project identification
            1. Project name: Hat Creek Bridge Project; NMFS Tracking Number: WCRO-2023-02206.
            2. ITD contact person: Shawn Smith.
        ii. NTU monitoring results.
        iii. Total area of Hat Creek dewatering.
        iv. Total number of spring/summer-run Chinook salmon and steelhead captured, harmed, or killed during dewatering and associated fish salvage.
        v. Total area of habitat disturbed and riprap placed.

vi. Species and numbers re-planted.
vii. Stormwater management features installed to incorporate additional stormwater drainage from new bridge.

d. The report shall be sent to National Marine Fisheries Service, Northern Snake Branch, Attention Jim Mital, jim.mital@noaa.gov and NMFS' service account at nmfswcr.srbo@noaa.gov.

Conservation Recommendations. Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

The following conservation recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the FWHA:

1. Seek opportunities to supplement or restore the riparian areas of Hat Creek within the action area with any excess seed remaining from project activities.
2. Where possible, without compromising the desired benefit of structural integrity related to the existing bridge, use bioengineered solutions to stabilize the banks instead of riprap.

Reinitiation of Consultation. Under 50 CFR 402.16(a): "Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and: (1) if the amount or extent of taking specified in the incidental take statement is exceeded; (2) if new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) if a new species is listed or critical habitat designated that may be affected by the identified action."

MAGNUSON–STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson–Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to Section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

NMFS determined the proposed action would adversely affect EFH of Pacific salmon as follows: (1) short-term increases in sediment and turbidity affecting water quality, especially during re-watering; (2) long-term alteration of cover/shelter and floodplain connectivity associated with the new bridge structure and riprap placement, (3) increase in untreated stormwater runoff as a result of increased PGIS.

NMFS determined the following Conservation Recommendations are necessary to avoid, minimize, mitigate, or otherwise offset the impact of the proposed action on EFH.

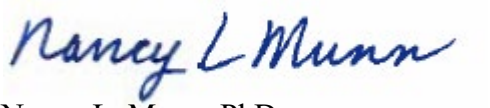
1. Native grasses, shrubs, and/or small trees will be planted in the disturbed riparian areas.
2. Stormwater management features will be enhanced (either through expansion or addition of settling basins), as practicable, to facilitate infiltration of as much stormwater runoff as the site features will allow.

The FHWA must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations [50 CFR 600. 920(l)].

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository https://repository.library.noaa.gov. A complete record of this consultation is on file at NMFS' Boise, Idaho office.

You may direct questions regarding this letter to Jim Mital, Moscow, Idaho, 208-310-0663, jim.mital@noaa.gov.

Sincerely,



Nancy L. Munn, PhD
Acting Assistant Regional Administrator
Interior Columbia Basin Office

cc: Kassondra Dumke, USFWS
Kathleen Hendricks, USFWS
Wendy Terlizzi, ITD
Shawn Smith, ITD
Jesse Webb, ITD
Neal Scott, ITD
Julie Hausknecht, ITD
Mike Lopez, NPT

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