



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
Portland, Oregon 97232-1274

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Refer to NMFS No: WCRO-2022-01015

June 13, 2022

Lt. Col. Richard T. Childers
U.S. Army Corps of Engineers
Walla Walla District
201 N. Third Avenue
Walla Walla, Washington 99362

Rudy Soto
State Director
U.S. Department of Agriculture
Idaho Rural Development State Office
9173 West Barnes Drive, Suite A1
Boise, ID 83709

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Concurrence and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Salmon City Water Pipeline System Repair; HUC 1706020304; Lemhi County, Idaho

Dear Lt. Col. Childers and Mr. Soto:

Thank you for the U.S. Army Corps of Engineers (COE) April 8, 2022 email requesting initiation of consultation with NOAA's 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 subject 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 and designated critical habitat. The COE determined the proposed action may affect, and is likely to adversely affect (LAA) Snake River (SR) spring/summer Chinook salmon (*Oncorhynchus tshawytscha*) and SR Basin steelhead (*O. mykiss*). The COE also determined the proposed action may affect, but is not likely to adversely affect (NLAA) designated critical habitat for SR sockeye salmon¹, SR Basin steelhead, and SR spring/summer Chinook salmon. This letter addresses each of these determinations. We reviewed the COE's consultation request and related initiation package. Where relevant, we have adopted the information and analyses you have provided and/or referenced but only after

¹ The COE determined the action would have no effect on SR sockeye salmon due to their absence from the work area during construction, effects to this species are not discussed further in this opinion.



our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. We adopt by reference the following sections of the COE's final biological assessment (BA) (COE 2022), ESA Listed and Proposed Species (pages 3-6); Proposed Action² (pages 8- 31); Environmental Baseline (pages 31-39); and Analysis of Effects (pages 39-51). The referenced BA and other documents we have adopted are available in their entirety in our official project record, available at NMFS' Boise Office or by contacting Chad Fealko by email, (chad.fealko@noaa.gov).

The City of Salmon (city) intends to replace 33,600 feet of aging and leaking water pipelines and meters throughout the city's water distribution system (Figure 1). Pipeline replacements will primarily be within the existing rights-of-way, streets, and alleys. The pipeline will also cross the west channel of the Salmon River between the Island Park bridge and the U.S. Highway 93 bridge where two casings will be installed below the riverbed. This work will occur in the dry and requires dewatering the majority of the Salmon River's west channel. A 6-8 cubic feet per second live channel will be maintained in the west channel to bypass fish around the work area and reduce the extent of fish salvage required. The new casings will house pressurized water lines that will then be connected (on Island Park) to existing water pipelines that pass beneath the east channel (see NMFS No. WCRO-2021-03436). Work will occur between November 1 and December 15 (likely in 2023), during seasonal low flows and after water delivery to the downstream Norton Ditch is no longer needed. This timing is within the preferred instream work window identified by the Upper Salmon Basin Technical Team (USBWP 2005). In-water work will last approximately 4 weeks while the entire project will take approximately 6 weeks. The BA (pages 8-31 and Appendix A) provide additional details regarding implementation schedule, construction methods, and conservation measures and best management practices (BMPs).

Federal actions triggering ESA consultation include: (1) a Clean Water Act (CWA) Section 404 permit issued by the COE; and (2) U.S. Department of Agriculture (USDA) Idaho Rural Development funding for the engineering design work and construction of the pipeline replacement. The COE is the lead Federal action agency for the purposes of this consultation.

On October 19, 2021, NMFS received an email request to provide input on preliminary project details from the East-Central Idaho Planning & Development Association, Inc., who was assisting the city. NMFS responded with general recommendations for continued consultation on the same date. NMFS, the city, and USDA Idaho Rural Development staff met by e-meeting on October 26, 2021, to discuss in-water work options to avoid, and minimize potential impacts to aquatic resources. On November 5, 2021, the city Administrator (E. Penner), NMFS fish biologist (C. Fealko), Salmon Environmental Services LLC (SES) fish biologist (L. Littlejohn), and Keller Associates, Inc. engineer (M. Hill) met to discuss project sequencing, implementation of the live channel, and scheduling. Another meeting was held on November 18, 2021. On December 14, 2021, the city, SES, and NMFS staff met on-site to further discuss the project components including cofferdam installation, channel dewatering, fish salvage, and live channel

² Appendix A: *General Design Criteria, Best Management Practices, and Conservation Measures* is also included as part of the proposed action.

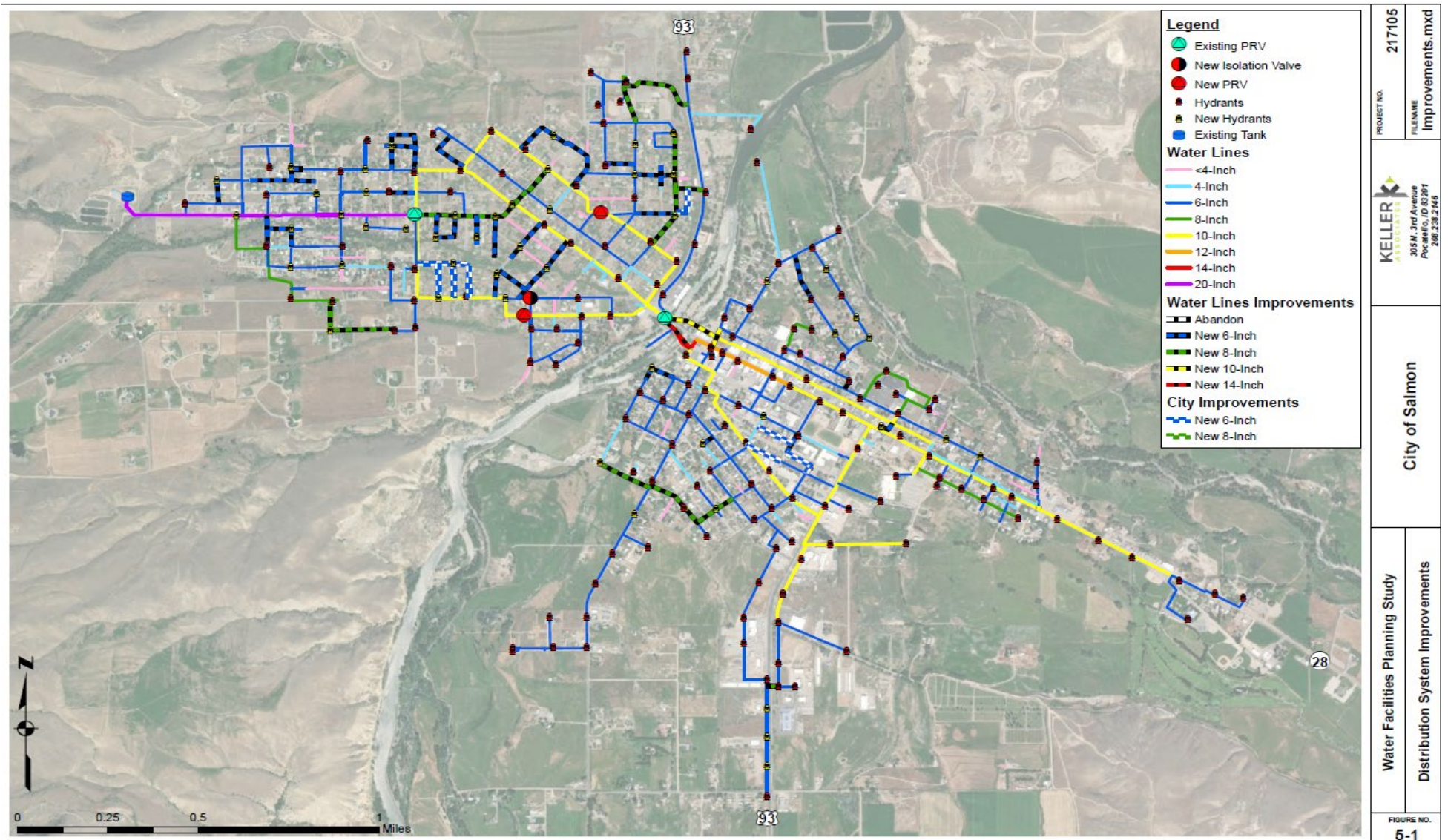
maintenance. NMFS received a draft BA from the city on January 30, 2022, and responded with suggested edits and comments on February 7, 2022. The COE submitted a final BA and request to initiate formal ESA consultation on April 8, 2022. The USDA Idaho Rural Development is funding the project via a grant to the city and is considered a secondary Federal action agency for the purposes of this ESA consultation. On April 29, 2022, NMFS sent the action agencies a letter identifying April 8, 2022, as the official consultation initiation date.

On June 6, 2022, NMFS provided a copy of the proposed action and terms and conditions sections of the draft opinion to the action agencies and the Shoshone-Bannock Tribes. NMFS did not receive any comments.

Status of Species and Critical Habitat

We examined the status of each species likely to be adversely affected by the proposed action (SR spring/summer Chinook salmon and SR Basin steelhead) to inform the description of the species', "reproduction, numbers, or distribution", as described in 50 CFR 402.02. We have augmented the COE's BA section on "ESA Listed and Proposed Species" (pages 3-6) with information from the species recovery plans (NMFS 2017) and the most recent biological viability update (Ford 2022). Together, this information represents the best available and most recent information on the status of the species considered in this consultation.

This opinion considers the status of the SR spring/summer Chinook evolutionarily significant unit (ESU) and the SR Basin steelhead distinct population segment (DPS). Both this ESU and this DPS are composed of multiple populations, which spawn and rear in different watersheds across the Snake River basin. Having multiple viable populations makes an ESU or DPS less likely to become extinct from a single catastrophic event (ICTRT 2010). NMFS expresses the status of an ESU or DPS in terms of the status and extinction risk of its individual populations, relying on McElhaney et al.'s (2000) description of a viable salmonid population (VSP). The four parameters of a VSP are abundance, productivity, spatial structure, and diversity. NMFS' recovery plan for SR spring/summer Chinook salmon and SR Basin steelhead (NMFS 2017) describe these four parameters in detail and the parameter values needed for persistence of individual populations and for recovery of the ESU and the DPS.



PROJECT NO.	217105
FILENAME	Improvements.mxd
2054 3rd Avenue Pocatello, ID 83201 208.238.2146	
City of Salmon	
Water Facilities Planning Study	Distribution System Improvements
FIGURE NO.	5-1

Figure 1. City of Salmon water system project area (Source: Keller Associates, Inc.).

Table 1 summarizes the status and available information on both species, based on the detailed information on the status of individual populations, and the species as a whole provided by the *ESA Recovery Plan for Snake River Spring/Summer Chinook Salmon and Snake River Basin Steelhead* (NMFS 2017), *Status Review Update for Pacific Salmon and Steelhead Listed under the Endangered Species Act: Pacific Northwest* (NWFSC 2015), and *2016 5-year Review: Summary and Evaluation of Snake River Sockeye Salmon, Snake River Spring-summer Chinook, Snake River Fall-run Chinook, Snake River Basin Steelhead* (NMFS 2016). These three documents are incorporated by reference here. Additional information (e.g., abundance estimates) have become available since the latest status review (NMFS 2016) and its technical support document (NWFSC 2015). This latest information (Ford 2022) represents the best scientific and commercial data available and is summarized in the following sections. SR spring/summer Chinook and SR Basin steelhead remain threatened with extinction due to many individual populations not meeting recovery plan abundance and productivity targets.

Table 1. Most recent listing classification and date, status summary (including recovery plan reference and most recent status review), and limiting factors for species considered in this opinion.

Species	Listing Status	Status Summary	Limiting Factors
Snake River Spring/summer Chinook Salmon	Threatened 6/28/05	<p>This ESU comprises 28 extant and four extirpated populations, organized into five major population groups (MPGs), none of which are meeting the viability goals laid out in the recovery plan (NMFS 2017). All except one extant population (Chamberlin Creek) are at high risk of extinction (NWFSC 2015). Most populations will need to see increases in abundance and productivity in order for the ESU to recover. Several populations have a high proportion of hatchery-origin spawners—particularly in the Grande Ronde, Lower Snake, and South Fork Salmon MPGs—and diversity risk will need to be lowered in multiple populations in order for the ESU to recover (NWFSC 2015). Overall, adult returns declined dramatically across the ESU between 2015 and 2019, compared to the five preceding return years (NWFSC 2021). Only three populations (Minam, Bear Valley, and Marsh Creek) exhibit an increasing abundance when evaluating returns over periods of 10 to 20-years and these are the only populations currently expected to be meeting VSP criteria for a maintained status (NWFSC 2021).</p>	<ul style="list-style-type: none"> • Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species’ migration corridor. • Degraded freshwater habitat, including altered streamflows and degraded water quality. • Harvest-related effects. • Predation in the migration corridor. • Potential effects from high proportion of hatchery fish on natural spawning grounds.

Species	Listing Status	Status Summary	Limiting Factors
Snake River Basin Steelhead	Threatened 1/5/06	This DPS includes 24 populations organized into five MPGs. In 2015, five populations were tentatively rated at high risk of extinction, 17 populations were rated at moderate risk of extinction, one population was viable, and one population was highly viable (NWFSC 2015). Four out of the five MPGs were not meeting the population viability goals laid out in the recovery plan (NMFS 2017). Since 2015, adult abundance has decreased for all populations except one (range -30 % to -71 %, NWFSC 2021). The Wallowa River population is an outlier, displaying a 72 % abundance increase since 2015. Although decisions on current status are not yet complete, two of the five MPGs appear to meet recovery plan objectives but more populations and MPGs need to be viable for the DPS to recover. The relative proportion of hatchery fish spawning in natural spawning areas near major hatchery release sites remains uncertain and may need to be reduced (NWFSC 2015; NWFSC 2021).	<ul style="list-style-type: none"> • Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species' migration corridor. • Genetic diversity effects from out-of-population hatchery releases. Potential effects from high proportion of hatchery fish on natural spawning grounds. • Degraded fresh water habitat. • Harvest-related effects, particularly B-run steelhead. • Predation in the migration corridor.

The action is located in the mainstem Salmon River, just upstream of the Lemhi River confluence. This area falls within the boundaries for the Salmon River Lower Mainstem SR spring/summer Chinook and Pahsimeroi River SR Basin steelhead populations, which belong to the Upper Salmon River and Salmon River MPGs, respectively. The action area also serves as migratory adult and juvenile rearing/overwintering and migratory habitat for all upstream populations for both species (Table 2 and Table 3), all of which belong to the same two MPGs.

Table 2. Preliminary SR Chinook abundance (most recent 10-year geometric mean (range)) and viability ratings (Ford 2022) and recovery plan role (NMFS 2017) for populations potentially affected by the proposed action.

Population ^a (run timing)	Abundance/Productivity Metrics				Integrated Spatial Structure and Diversity Risk Rating	Overall Risk Rating	Identified for viable status in ICTRT Recovery Scenario? ^d
	ICTRT Threshold ^b	Natural Spawning	ICTRT Productivity	Integrated A/P Risk			
Upper Salmon River MPG Populations Affected by the Proposed Actions							
Salmon Lower Main (spring/summer)	2,000 ^a	71 (sd 87)	1.30 (0.23 20/20)	High	Low	High	No
Salmon Upper Main (spring/summer)	1,000 ^b	326 (sd 270)	1.13 (0.31 18/20)	High	Low	High	Yes
Pahsimeroi River (summer)	1,000	218 (sd 168)	1.26 (0.20 20/20)	High	High	High	Yes
Lemhi River ^c (spring/summer)	2,000	250 (sd 159)	1.63 (0.28 19/20)	High	High	High	Yes
Valley Creek (spring/summer)	500 ^d	113 (sd 100)	1.63 (0.26 17/20)	High	Moderate	High	Yes
Salmon East Fork (spring/summer)	1,000	288 (sd 291)	2.00 (0.28 17/20)	High	high	High	Yes
Yankee Fork (spring/summer)	500	62 (sd 139)	0.99 (0.51 17/20)	High	High	High	No

^aThe North Fork and Panther Creek populations are not displayed since they are located downstream of the action area and do not migrate through it.

^bICTRT threshold establish the population size class as follows: 2,000 = Very Large; 1,000 = Large; 750 = Intermediate; and 500 = Basic.

^cThe Lemhi population is downstream of the action area, but there is some limited potential for Lemhi River juveniles to migrate into the action area in the fall and potentially overwinter there.

^dPopulations marked 'yes' must be viable, which is defined as having a 5% or less risk of extinction over 100 years. One of the five populations must be highly viable (i.e., less than 1% risk of extinction in 100 years). All populations in the MPG must meet criteria for maintained status for the MPG to be viable. Maintained populations have a less than 25 % chance of extinction in 100 years.

Table 3. Preliminary estimated SR Basin steelhead abundance (most recent 10-year geometric mean (range)) and viability ratings (NWFSC 2021) and recovery plan role (NMFS 2017) for populations potentially affected by the proposed action.

Population	Abundance/Productivity Metrics ^a				Integrated Spatial Structure and Diversity Risk	Overall Risk Rating	Identified for viable status in ICTRT Recovery Scenario? ^d
	ICTRT Minimum Threshold	Natural Spawning Abundance	ICTRT Productivity	Integrated A/P Risk			
Salmon River MPG Populations Affected by Proposed Actions							
Lemhi R.	1,000	3,502 (sd 2,562)	1.88 (0.17 16/20)	Moderate	Moderate	Maintained	No
Pahsimeroi R.	1,000			Moderate	Moderate	Maintained	No
East Fork Salmon R.	1,000			Moderate	Moderate	Maintained	No
Up Main. Salmon R.	1,000			Moderate	Moderate	Maintained	No

^a Abundance and productivity values are generated from aggregate steelhead counts at Lower Granite Dam that are subsequently partitioned into four subgroups based on genetic stock identification. The Upper Salmon River stock group includes six populations. The displayed abundance and productivity values are for the entire subgroup, not just the four populations shown.

^d Populations marked 'yes' must be viable, which is defined as having a 5% or less risk of extinction over 100 years. All populations in the MPG must meet criteria for maintained status for the MPG to be viable. Maintained populations have a less than 25 % chance of extinction in 100 years.

The COE determined the action is NLAA designated critical habitat for SR spring/summer Chinook salmon, SR Basin steelhead, and SR sockeye salmon. After we reviewed the information presented in the BA, we conclude that temporary dewatering of the work area may lead to stranding of individual fish and the temporary loss of existing habitat depended on by individual fish is the root cause of mortality. Since the temporary loss of habitat creates the species-specific take, we determined the action is LAA critical habitat for SR spring/summer Chinook salmon and SR Basin steelhead. Because SR sockeye salmon will not be present when the dewatering occurs (BA page 40), and because the available habitat will have essentially returned to pre-project conditions when sockeye next migrate through the area, we concur with the COE's determination that the action is NLAA their designated critical habitat (see complete discussion at the end of this opinion). For this reason, we examined the condition of critical habitat only for Chinook salmon and steelhead throughout the designated area and discuss the function of the physical or biological features (PBFs) essential to the conservation of the species that create the conservation value of that habitat. We have supplemented the BAs environmental baseline information (pages 31-39) with critical habitat information for SR spring/summer Chinook salmon and SR Basin steelhead at the scale of the ESA listings (see Table 4). Table 4 is based on the detailed information on the status of critical habitat throughout the designation area provided in the recovery plan for each species (NMFS 2017) and the most recent status review (NMFS 2016), which are incorporated by reference here.

Table 4. Critical habitat, designation date, Federal Register citation, and status summary for critical habitat considered in this opinion.

Species	Designation Date and Federal Register Citation	Critical Habitat Status Summary
Snake River Spring/summer Chinook salmon	10/25/99; 64 FR 57399	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon Rivers, and all tributaries of the Snake and Salmon Rivers (except the Clearwater River) presently or historically accessible to this evolutionarily significant unit (ESU) (except reaches above impassable natural falls, and Dworshak and Hells Canyon Dams). Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (NMFS 2017). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems.
Snake River Basin steelhead	9/02/05 70 FR 52630	Critical habitat encompasses 25 subbasins in Oregon, Washington, and Idaho. Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (NMFS 2017). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems.

NMFS describes critical habitat in terms of essential PBFs of that habitat to support one or more life stages (e.g., sites with conditions that support spawning, rearing, migration, and foraging). For SR spring/summer Chinook salmon and SR Basin steelhead, PBFs include spawning gravel, water quality, water quantity, food (juvenile migration only), access, riparian vegetation, water temperature, substrate, water velocity, cover or shelter, space, and safe passage. Across the designations, the current ability of PBFs to support the species varies from excellent in wilderness areas to poor in areas of intensive human land use. Climate change and its influence on PBFs such as water quality, water quantity, temperature, and safe passage are expected to exacerbate current conditions for salmon, limiting future run timing (due to reduced adaptability) and thus increasing the difficulty of species recovery. A synthesis of current literature pertinent to these species’ future habitat conditions can be found in NMFS’ recovery plans (2017) and recent climate vulnerability assessments (Crozier et al. 2019).

For both species, the construction and operation of water storage and hydropower projects in the Columbia River basin, including the run-of-river dams on the mainstem lower Snake and lower Columbia Rivers, have altered biological and physical attributes of the mainstem migration corridor for juveniles and adults. However, several actions taken since 1995 have reduced the negative effects of the hydro system on juvenile and adult migrants. Examples include providing spill at each of the mainstem dams for smolts, steelhead kelts, and adults that fall back over the projects; and maintaining and improving adult fish way facilities to improve migration passage for adult salmon and steelhead (NMFS 2020).

“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). Pages 2 and 3 of the April 8, 2022 BA completely described the action area that we have adopted here. Specifically, the action area includes the entirety of Island Park (0.73 miles long), the west and east channels of the Salmon River bordering the island. The water system diverts water from Jesse, Pollard, and

Chips Creeks³ to the city's water treatment facility and then water enters the distribution system for city residents. Because the action will eliminate water loss from the distribution system (BA page 71), Jesse Creek is included in the action area from the water treatment plant downstream to its confluence with the Salmon River. Equipment will access the work areas via existing roads within the city, an unimproved dirt road or parking area on the west bank of the Salmon River upstream of the Highway 93 bridge, and existing routes located on Island Park. This action area includes the projected extent of all project-generated turbidity, noise, dewatering, water bypass routes, and other anticipated effects of the action.

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).

We adopted the BA's Environmental Baseline section (pages 31-39) for the action area. The Salmon River portion of the action area principally serves as a migratory corridor for adult and juvenile salmon and steelhead. Some juvenile Chinook salmon and steelhead as well as some adult steelhead could overwinter here too. There is no spawning habitat present. The Salmon River is confined by a COE levee on the east bank of the east channel and topography and urban development on the west bank of the west channel. In winter, ice frequently inundates portions of the channel. The dominant substrate is embedded large gravel and cobble. Habitat conditions in the action area are poor, with no pools, limited undercut banks, low levels of large woody debris, urbanized and inaccessible floodplains, and excessively warm summer water temperatures and frequent winter icing. On February 18, 2022, NMFS completed an ESA consultation for construction of a whitewater park, city sponsored streambank armoring, and installation of two similar water pipeline conduits (all in the Salmon River's east channel) (NMFS No. WCRO-2021-03436). Those actions will be constructed in summer and fall of 2022. Conditions created by those actions are part of the environmental baseline for this consultation.

Jesse Creek is dewatered annually from mid-summer through fall by multiple diversions, including the city's (BA page 5). A series of long, high-gradient, culverts block upstream fish passage into Jesse Creek starting about 30-feet upstream of the Salmon River confluence. Two

³ Pollard and Chips Creeks are tributaries to Jesse Creek and the city's water diversions are located upstream of the water treatment facility. All water loss likely enters the Jesse Creek channel; and the channels upstream of the water treatment facility are not expected to be influenced by the proposed action.

juvenile Chinook salmon were observed by Idaho Department of Fish and Game immediately below these culverts on October 30, 2014 (BA, page 5). This is the only available fish data for these streams. When surface water is present, Jesse Creek may provide thermal refugia from warm water in the Salmon River (NMFS 2022, page 36).

NMFS' recovery plans (NMFS 2015, 2017) identify general habitat recommendations at the major population group (MPG) and individual population level, which are pertinent to the action area. Recommendations include calls for improving riparian function, connectivity, water quality (particularly temperature), and water quantity (particularly for Chinook salmon rearing habitat). Implementing these measures is expected to provide resilience to ongoing influences of climate change on both species. The action is located within the boundaries of the Salmon River Lower Mainstem SR Chinook and Pahsimeroi River SR Basin steelhead populations, which belong to the Upper Salmon River and Salmon River MPGs, respectively. The action area also serves as migratory adult and juvenile rearing, overwintering and migratory habitat for all upstream populations for both species (see Table 2 and Table 3), all of which belong to the same two MPGs. The Lower Mainstem SR spring/summer Chinook population, which primarily exhibits summer run timing and has lagged behind other populations in total abundance, is not currently identified in NMFS' example recovery scenario for this MPG (Ford 2022), but the population is one of two very large size populations in the MPG and could be used to satisfy viability criteria in lieu of other populations. The best scientific and commercial data available with respect to the adult abundance of all Chinook populations in and upstream of the action area indicate a substantial downward trend in abundance and productivity when comparing returns from 2010-2014 to 2015-2019. Over this period, declines in abundance ranged from 9 percent in the Lemhi (where extensive habitat improvements targeting SR Chinook have been accruing) to 87 percent in the Yankee Fork population. Although NMFS has not yet completed our most recent status determination, declining abundance and productivity will likely continue to support the high-risk ratings for all populations.

The affected populations of SR Basin steelhead may be meeting criteria for maintained status but none of the affected populations are identified in NMFS' preliminary recovery scenario (NMFS 2017). At the MPG scale, 5-year geometric mean SR steelhead natural adult abundance declined an average of 54 percent (range 31 to 71 percent) when comparing return years 2010-2014 to 2015-2019. There is a great deal of uncertainty with individual population abundances in this MPG and the values remain unconfirmed estimates and we consider these numbers with caution.

Effects

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 comprehensive assessment of the effects of the proposed action (pages 39-53), and is adopted here (50 CFR 402.14(h)(3)). NMFS has evaluated this section and after our independent, science-based evaluation determined it meets our regulatory and scientific standards. The temporary and long-term effects of this proposed action are:

- Minor behavioral impacts from underwater sound, caused by vibratory hammer pile driving.
- Exposure to minor levels of turbidity created during cofferdam installation and rewatering of the Salmon River work areas. Only minor behavioral effects, not rising to the level of harm or harassment, are expected.
- Electrofishing related harm (including harassment, capture, injury, and potential death of individuals) caused by fish salvage efforts in the west channel. Fish salvage will be performed to reduce potential for fish stranding, but a limited amount of stranding could occur.
- Minor increases in water quantity in Jesse Creek resulting from reduced water loss in the city's distribution system.

Because the action occurs in a migratory corridor or potential overwintering area, fish affected by the action could belong to any of the seven upstream populations of SR spring/summer Chinook salmon (Table 2) or any of the four upstream populations of SR Basin steelhead (Table 3). Construction related effects on the environment will be temporary and minor (i.e., sound, turbidity, space, and riparian vegetation) and most are not expected to lead to harm, harassment, or other injury fish injury pathways. For SR Chinook, only juveniles from the prior spawning year would be exposed, and for SR Basin steelhead juveniles and some overwintering adults could be exposed. There is no available fish data for the action area to calculate fish densities likely to be exposed. Although the area likely serves primarily as a migratory corridor, some juvenile overwintering may also occur. We applied juvenile fish density estimates derived from tributary streams that have "poor" habitat conditions (Hall-Griswold and Petrosky 1996). These density estimates likely result in a substantial overestimate of fish exposure. This is the best available information and allows us to make a conservative evaluation (i.e., worst-case) of the action's effects.

Due to the anticipated effectiveness of proposed BMPs, adverse effects are expected to be limited to those caused by dewatering and associated fish salvage work. Our analysis estimated that up to 137 juvenile steelhead and 267 juvenile Chinook salmon may be captured. Each of these fish would experience varying levels of elevated stress and potentially harm, with some fish dying from the exposure to electrofishing and handling. Approximately seven juvenile steelhead and 13 juvenile Chinook salmon may be killed from injuries or directly during electrofishing. Stranding of fish could occur but likely only very small numbers of fish will die

from this effect pathway given the proposed dewatering plan, including retention of a refugia channel through the entire length of the west channel, and because of the assumed effectiveness of the proposed fish salvage methods. We assumed that an additional three juvenile steelhead and seven juvenile Chinook salmon (i.e., half the number of fish killed by electrofishing) may die by stranding). As discussed above, these estimates are likely larger than what may actually occur, but are applied as a worst-case scenario. Adverse effects from turbidity exposure, sediment deposition, or chemical contamination are not anticipated. Exposure to sound levels produced by vibratory hammers is expected to cause minor behavioral modifications in exposed fish that do not rise to the level of harm.

Adult steelhead could potentially use the action area habitat for overwintering, but the absence of complex habitat (i.e., there is limited cover, almost no large wood, and no deep pools), suggests utilization, other than brief use during migrations, is probably low. Any adult steelhead that are present during dewatering or construction are unlikely to be subject to capture as previous activities have routinely failed to encounter adults during fish salvage efforts. The west channel will be drawn down slowly and in a controlled fashion spanning a 48-hour period. This approach is expected to facilitate adult steelhead emigration and avoid biologically significant changes to behavior such as excessive stress.

Salvage related mortality will likely occur in fall of 2023 and is expected to affect just one-year class of Chinook and possibly two-year classes of steelhead (due to longer freshwater juvenile residency). At most, up to 10 juvenile steelhead and up to 20 juvenile Chinook salmon may die during fish salvage and dewatering. These effects will be spread amongst fish originating from up to four populations of SR Basin steelhead and up to seven populations of SR spring/summer Chinook salmon.

Pages 44-51 of the adopted BA evaluate the action's potential effects on PBFs of designated critical habitat. For this action area, modification of PBFs may affect juvenile freshwater rearing/overwintering or freshwater migration through the action area. Additionally, adult steelhead could potentially use the action area for overwintering and migration, but the absence of complex habitat and deep pools suggests utilization, other than migratory, is probably low. The west channel will be dewatered for up to 4 weeks and the temporary loss of habitat (i.e., space) may lead to stranding (i.e., harm or death) of SR spring/summer juvenile Chinook salmon and SR Basin steelhead that may be overwintering there. This habitat-related impact will temporarily reduce the conservation value of the action area's habitat during this 4-week period. The action area's available habitat will simultaneously increase in quantity for the same period of time when water from the west channel is diverted into the east channel. Because this impact occurs during the winter, there will likely be little impact to forage. Fish passage will be retained through the action area, either in the retained bypass flow in the west channel or in the east channel, which will have a temporary increase of flows but remain passable to all species' life histories. Other PBFs affected by the action and addressed in detail in the BA include safe passage, water quantity, water quality (turbidity and temperature), floodplain connectivity, riparian vegetation, natural cover, substrate, and juvenile forage. As discussed in the BA

(pages 44-51) effects to these PBFs will be minor and temporary and have little to no influence on the action area habitat for SR spring/summer Chinook salmon and SR Basin steelhead.

In addition to the effects on space discussed earlier, construction impacts will be most prevalent in the Salmon River and Island Park work areas. Here, anticipated minor effects include: brief periods of low intensity turbidity; temporary reduction in flow volume during construction (west channel) and simultaneous increase (east channel); retention of fish passage in both channels; and minor riparian vegetation impacts, including removal of two small trees, relocation of two willow clumps, and planting and protection of 50 new willows. Potential for introducing aquatic invasive species or having a project-related impact on water quality from chemical contamination were both evaluated and found to have almost no potential to occur given proposed conservation measures and successful history of similar work occurring without issues. Water system work occurring away from Island Park will all occur in city rights-of-way, streets, and alleys where there is limited to no potential to affect critical habitat or species. Future operation of the new pipeline may reduce the amount of water the city diverts, treats, and delivers to customers. This could result in minor increases in water quantity or duration of surface water availability in Jesse Creek. Such impacts would be minor beneficial effects to forage, space, water temperature, and water quality PBFs in Jesse Creek and its Salmon River confluence area.

“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. The BA (page 51) discussed cumulative effects in the action area. No new future State or private activities were identified that are not currently occurring.

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, considering the status of the species and critical habitat, to formulate the agency’s biological opinion (opinion) as to whether the proposed action is likely to: (1) appreciably reduce 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 critical habitat as a whole for the conservation of the species.

SR Chinook and SR Basin steelhead abundance experienced population increases, relative to 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 declines are believed to be tied to recent ocean conditions (Ford 2022). Action area conditions have not materially changed during this time and have likely had little influence on recent trends. 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). All individual populations, including those affected by this action, are still at high risk of extinction and remain far below recovery plan abundance and productivity targets. As a result, both species remain threatened with extinction.

Anticipated juvenile fish mortalities can be used to estimate the total number of adult equivalents potentially removed from the pool of affected populations. Using the estimated juvenile mortalities for each species documented above, we estimated all construction-related mortality would result in up to one less adult SR Chinook salmon and one less adult SR Basin steelhead. For Chinook salmon this would affect only the 2023 brood, for SR Basin steelhead impacts could be from the 2022 or 2023 brood. Because the action area is principally a migratory corridor or potential overwintering habitat for upstream populations, fish affected by construction could belong to many different populations of SR Chinook salmon (up to seven populations) and SR Basin steelhead (up to four populations). For this reason, the salvage related harm caused by the action will be spread across multiple populations and the potential loss of one adult equivalent from one brood year is too small to have significant impacts on any of the affected individual populations' abundance or productivity. Due to the absence of population-level impacts on viability, we also find that the action will not likely affect the survival of the affected MPGs, nor the affected ESU or DPS.

Although action area habitat conditions are poor under the environmental baseline (BA pages 31- 39), there are no long-term impacts to habitat that could reduce the current growth and or survival of fish utilizing the action area. In the short-term, the action will cause a temporary reduction in space in the west channel that is likely to lead to some of the individual fish mortalities described (i.e., stranding). This impact to the available space will last approximately 4 weeks before the bypass flows are reintroduced to the west channel and pre-project conditions return. All other PBFs of critical habitat for SR spring/summer Chinook and SR Basin steelhead will experience only minor effects with little to no influence on the action area's conservation value. Overall, the described effects on space will be limited to the reach scale, constituting a very small proportion of the overall habitat at the ESU/DPS scale. Additionally, effects to space will be temporary (i.e., 4 weeks) before returning to baseline conditions. There will also be a simultaneous increase in available space in the east channel. Effects from that increase will be minor though as it occurs in early winter when foraging and fish growth levels are low. For these reasons, the conservation value of designated critical habitat for SR spring/summer Chinook and SR basin steelhead will not be appreciably diminished by the proposed action.

Similarly, there are no reasonably foreseeable cumulative actions or effects that would otherwise affect the action area that were not previously considered in the environmental baseline. Upgrading the city water system could produce minor increases in Jesse Creek's water volume or duration of surface connectivity with the Salmon River into the future. However, existing private irrigation demand is such that any meaningful change in water quantity or duration of flow is not expected to be measurable and thus little if any benefit to SR spring/summer Chinook salmon or SR Basin steelhead or their critical habitat is expected from the action.

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 SR spring/summer Chinook salmon or SR 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 opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

1. Juvenile SR Chinook salmon and SR Basin steelhead will likely be harmed, harassed, handled, or killed during salvage of dewatered areas during construction of the proposed pipeline. Up to 137 juvenile steelhead and 267 juvenile Chinook salmon may be captured. Of these, up to seven steelhead and 13 Chinook salmon may be killed during construction. Exceeding either the total number of fish handled or the stated number of mortalities would exceed the amount of take identified in this consultation.
2. A very small number of juvenile SR Chinook salmon (seven) and SR Basin steelhead (three) could potentially be stranded during construction-related dewatering in 2023. Stranded fish may be buried in stream substrate and therefore difficult to quantify or otherwise measure. In these instances, NMFS uses a surrogate to describe the extent of incidental take, pursuant to 50 CFR 402.14[I]. In this case, we use the dewatered area as a surrogate for the amount of take. Although somewhat coextensive with the proposed action, the area dewatered is directly related to the stranding take pathway. Additionally, the area can be measured and thus serves as a reasonable reinitiation trigger if exceeded. For this reason, no more than 5.6 acres (243,936 square feet) of the Salmon River are

authorized to be dewatered. Exceeding this limit will trigger the reinitiation provisions of this opinion.

Effect of the Take

In the 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.

Reasonable and Prudent Measures

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

The COE and USDA Idaho Rural Development shall:

1. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this ITS are effective in avoiding and minimizing incidental take from permitted activities and that the extent of take is not exceeded.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the COE and USDA Idaho Rural Development must comply (or must ensure that any applicant complies) with the following terms and conditions. The COE, as the lead Federal action agency, 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 the COE and/or the USDA Idaho Rural Development shall require the city to:
 - a. Maintain records of the number, species, and size of fish handled during any electrofishing event in order to verify the extent of take authorized by this opinion is not exceeded.
 - i. If more than 137 juvenile steelhead or 267 juvenile Chinook salmon are captured during construction-related fish salvage or if more than seven steelhead or 13 Chinook salmon are killed during those activities, immediately stop work and contact NMFS to reinitiate ESA consultation.
 - b. Document the total dewatered area during construction.
 - i. If more than 5.6 acres (243,936 square feet) of the Salmon River’s west channel are dewatered, immediately contact NMFS to determine if or how the project shall proceed.

- c. The city, on behalf of the COE and USDA Idaho Rural Development, shall submit a post-construction report to the Snake River Basin Office email (nmfswcr.srbo@noaa.gov) by February 28 the year after construction. The report will address the monitoring identified in the proposed action and terms and conditions relevant to construction.

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).

NMFS recommends the COE and USDA Idaho Rural Development collaborate with the city regarding any opportunities to place saved water volumes into new or existing water banks administered by the Idaho Department of Water Resources. Delivering saved water to through the lower reaches of Jesse Creek could provide much needed thermal refugia to ESA-listed fish at or near the confluence with the Salmon River.

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 written concurrence; or (4) if a new species is listed or critical habitat designated that may be affected by the identified action.”

“Not Likely to Adversely Affect” Determination

The COE’s BA concluded the proposed actions may affect, but are NLAA designated critical habitat for SR sockeye salmon (page 54). Pages 44-51 of the adopted BA evaluate the action’s potential effects on physical and biological features (PBFs) of designated critical habitat. For this action area, modification of PBFs may affect juvenile and adult freshwater sockeye migration that occurs through the action area annually. PBFs affected by the action and addressed in detail in the BA include safe passage, water quantity, water quality (turbidity and temperature), floodplain connectivity, riparian vegetation, natural cover, substrate, juvenile forage, and space.

The analysis contained in the identified sections of the BA demonstrate that the construction methods, location and nature of work, and the anticipated successful implementation of the proposed BMPs, and conservation measures, and site supervision, will result in insignificant effects to all SR sockeye salmon PBFs mentioned above. Construction impacts will be most prevalent in the Salmon River and Island park work areas. Here, insignificant effects include: brief periods of low intensity turbidity; temporary changes to available space from switching flows between channels; temporary reduction in flow volume during construction; retention of fish passage; and minor riparian vegetation impacts, including removal of two small trees, relocation of two willow clumps, and planting and protection of 50 new willows. Potential for introducing aquatic invasive species or having a project-related impact on water quality from chemical contamination were both evaluated and found to be discountable given proposed conservation measures and successful history of similar work occurring without issues. Water system work occurring away from Island Park will all occur in city rights-of-way, streets, and alleys where there is limited to no potential to affect critical habitat. Future operation of the new pipeline may reduce the amount of water the city diverts, treats, and delivers to customers. This could result in minor increases in water quantity or duration of surface water availability in Jesse Creek. Such impacts would be minor beneficial effects to forage, space, water temperature, and water quality PBFs in Jesse Creek and its Salmon River confluence area.

After our independent review of the information provided in the initiation package, we concur with the COE's determinations that the proposed action may affect, but will NLAA designated critical habitat for SR sockeye salmon.

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. In this case, NMFS concluded the action would not adversely affect EFH. Thus, we have no EFH Conservation Recommendations to provide at this time and consider the consultation process under the MSA to be concluded.

The COE and the USDA Idaho Rural Development must reinstate 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(1)). This concludes the MSA consultation.

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's Institutional Repository (<https://repository.library.noaa.gov/welcome>). A complete record of this consultation is on file at NMFS' Snake Basin Office, in Boise, Idaho.

Please direct questions regarding this letter to Chad Fealko, Salmon Field Office, 208-768-7707, or chad.fealko@noaa.gov.

Sincerely,



Michael P. Tehan
Assistant Regional Administrator
Interior Columbia Basin Office

Enclosure

cc: K. Urbanek – COE
J. Joyner – COE
K. Erickson - USDA
E. Traher – USFWS
C. Colter – SBT
J. Richards - IDFG
E. Penner – City of Salmon

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