

Supplement to
City of Challis, Idaho
Revised Environmental Information Document
January 2016

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Idaho Department of Environmental Quality



MEMO

TO: Andrew Kimmel, Riedesel Engineering

FROM: Mike May, DEQ Grant and Loan Program

SUBJECT: City of Challis Drinking Water Improvements Threatened/Endangered Species and Essential Fish Habitat

DATE: June 10, 2015

The City of Challis is proposing upgrades to their water system. The City's Facility Planning Study (FPS) recommends replacement of old 4-inch waterlines with 6-inch pipe on the south side of Garden Creek ("Old Town"). New pipe is also recommended on the north side of Garden Creek for future expansion to the airport and other potential development areas. As shown on the attached maps, it appears that pipeline work will fall within the 300-foot NMFS jurisdiction. Finally, *although not recommended as part of the project at this time*, the City would like to address potential crossings per the chance such a crossing is deemed necessary once detailed design and construction commences. The scenarios will be addressed separately.

FEDERAL NEXUS

The proposed project is expected to be financed by the Idaho Drinking Water State Revolving Fund (SRF), which is ultimately funded through the Environmental Protection Agency. Additional financing is being provided by a Community Development Block Grant using federal funds administered by the Idaho Department of Commerce.

PROJECT SCOPE

The proposed drinking water improvements include:

- Replacement of approximately 13,000 linear feet of water main and installation of 52 new fire hydrants and 2 pressure-reducing valves in existing roadways in the "Old Town" section of Challis;
- Installation of approximately 6,000 linear feet of new 8-inch water main, approximately 1,950 linear feet of new 6-inch water main, 32 new fire hydrants and associated fittings within existing roadways to extend service to the airport;
- Replacement of 760 water meters and ancillary equipment; and
- Installation of a Supervisory Control and Data Acquisition (SCADA) telemetry system for monitoring and control of the water system.

Project features are presented on the two attached maps.

Conservation Measures and Best Management Practices

It is understood that Garden Creek is designated critical habitat for Snake River Basin steelhead and Snake River spring/summer Chinook salmon, with designated critical habitat for Chinook salmon extending 300 feet from either edge of the stream. Both species are listed under the Endangered Species Act (ESA) as threatened and are present in Garden Creek. Bull trout, another threatened species, are also present in Garden Creek. Based on these site conditions, the following conservation measures and best management practices (BMPs) are proposed during construction:

Pipe replacement and installation within 300-feet (south side of Garden Creek)

The project entails the replacement of existing pipe; as such, the ground has already been disturbed. The project will implement BMPs such as silt fences or wattles to avoid silt and contamination from entering into the Creek during construction. In addition:

- Construction will occur when the Creek is at low flows - within the window of the second week of July through the second week of August.
- Washing of tools and equipment will occur only within staging areas, or other areas approved by the SNRA permit administrator, where there is no potential for effluent to reach surface waters.
- Fuel storage will occur only within staging areas, and refueling will not occur within 150 feet of streams. If fueling must occur at less than 150 feet, it will occur inside an impervious containment structure with a volumetric holding capacity equal to at least 110 percent of the fueling tank. Engine and hydraulic fluids will be monitored for leaks. Spill packs will also be on hand for minor leaks/spills.
- To minimize the potential for introducing hazardous material to the aquatic system, a spill prevention and control countermeasures plan will be prepared by the contractor and approved by the SNRA prior to project.
- Where construction activities occur within 75 feet of stream channels or standing water, or in areas where water may concentrate during snowmelt periods, standard sediment and pollutant prevention and retention practices will be utilized (e.g., silt fence, wattles).

Pipe replacement and installation within 300-feet (north side of Garden Creek)

This portion of the proposed project entails installing new pipe. The project will implement BMPs such as silt fences or wattles to avoid silt and contamination from entering into the Creek during construction. In addition:

- Construction will occur when the Creek is at low flows - within the window of the second week of July through the second week of August.
- Washing of tools and equipment will occur only within staging areas, or other areas approved by the SNRA permit administrator, where there is no potential for effluent to reach surface waters.
- Fuel storage will occur only within staging areas, and refueling will not occur within 150 feet of streams. If fueling must occur at less than 150 feet, it will occur inside an impervious containment structure with a volumetric holding capacity equal to at least 110 percent of the

fueling tank. Engine and hydraulic fluids will be monitored for leaks. Spill packs will also be on hand for minor leaks/spills.

- To minimize the potential for introducing hazardous material to the aquatic system, a spill prevention and control countermeasures plan will be prepared by the contractor and approved by the SNRA prior to project.
- Where construction activities occur within 75 feet of stream channels or standing water, or in areas where water may concentrate during snowmelt periods, standard sediment and pollutant prevention and retention practices will be utilized (e.g., silt fence, wattles).
- Where new construction occurs within wetland or riparian conditions, existing vegetation will be protected to the extent possible and disturbed areas will be promptly rehabilitated.

REASONABLY FORSEEABLE FUTURE PROJECT

Hydraulic modeling performed by Riedesel Engineering indicates that no additional stream crossings are required at this time. However, the City has requested that an additional crossing location and appropriate conservation measures and BMPs be identified in case of future need. The likely crossing location, as shown on the attached map, is on or near the existing US-93 bridge.

Garden Creek Crossing

Should a crossing be deemed necessary or wanted in the course of the project, directional boring will be used. The following BMPs will be utilized to avoid or mitigate ‘frack-out’ in Garden Creek.

- When excavating the drilling pits, the existing topsoil and vegetation mats will be separated and set aside from the deeper subsoil for later use in the rehabilitated the site.
- Horizontal directional drilling beneath designated critical habitat will occur only during the recognized instream work windows: beginning the second week of July through the second week of August.
- Drilling mud return volumes will be continuously monitored as an indicator of bore integrity. Return volumes must indicate an intact bore, or drilling will be halted immediately. Drill fluid pumping will also be immediately halted and static pressure within the bore hole immediately relieved. Boring effort would resume only after reevaluation with the Sawtooth National Forest (SNF) Engineer or her assignee.
- Where designated critical habitat for ESA-listed fish will be crossed by horizontal directional drilling, bores will be at least 10 feet below the deepest part of the channel or culvert. Monitors will observe the watercourse continuously during the drill for signs of surface migration (frac-out) of drilling mud. With any indication of a surface connection, drilling will be halted immediately and static pressure within the bore hole immediately relieved. If a point source is apparent, containment with sediment filters or something similar would also be attempted. The effort would resume only after reevaluation with the SNF Engineer or her assignee.
- All drilling mud and/or waste material will be contained and disposed of at appropriate sites, such as old material source pits, as directed by the SNRA permit administrator.

- Washing of tools and equipment will occur only within staging areas, or other areas approved by the SNRA permit administrator, where there is no potential for effluent to reach surface waters.
- Fuel storage will occur only within staging areas, and refueling will not occur within 150 feet of streams. If fueling must occur at less than 150 feet, it will occur inside an impervious containment structure with a volumetric holding capacity equal to at least 110 percent of the fueling tank. Engine and hydraulic fluids will be monitored for leaks. Spill packs will also be on hand for minor leaks/spills.
- To minimize the potential for introducing hazardous material to the aquatic system, a spill prevention and control countermeasures plan will be prepared by the contractor and approved by the SNRA prior to project.
- Where construction activities occur within 75 feet of stream channels or standing water, or in areas where water may concentrate during snowmelt periods, standard sediment and pollutant prevention and retention practices will be utilized (e.g., silt fence, wattles).
- Where new construction occurs within wetland or riparian conditions, existing vegetation will be protected to the extent possible and disturbed areas will be promptly rehabilitated.

RELATED PROJECT

A related water project recently constructed by the Custer Soil and Water Conservation District (CSWCD), designed by the U.S. Bureau of Reclamation (USBR) and funded by the Bonneville Power Administration (BPA) included:

- Installation of 2 drinking water wells for the City of Challis;
- Removal of the city's existing diversion dam and intake on Garden Creek near its slow sand filter (SSF) water treatment system;
- Removal of the existing diversion structure approximately 100 feet upstream that currently supplies an irrigation ditch that runs immediately west of the SSF; and
- Construction of a new headworks about 350 feet upstream of the city's existing diversion dam that would supply water to both the irrigation ditch and the SSF while simultaneously allowing fish passage upstream.

The CSWCD project features are not shown explicitly on the SRF project maps, but the SSF and clear well are identified on the maps. The existing diversion dam for the SSF is located immediately north of the SSF, and the irrigation canal can be seen immediately to the west of the SSF. The CSWCD project has currently completed the environmental review and design phases, and will shortly progress to construction.

The environmental effects of the two projects are largely independent of each other, and this memo considers primarily the SRF project. However, the National Environmental Policy Act requires assessment of the reasonably foreseeable potential direct, indirect, short term and cumulative environmental effects. A known contemporaneous project such as CSWCD's is clearly foreseeable, and would contribute to the cumulative effects from the drinking water system of the City of Challis. The

CSWCD and its partners conducted their own environmental assessment and agency consultation. This memo presents only the conclusions of their assessments for threatened, endangered and candidate species and essential fish habitat. Relevant documents are included as attachments.

PROJECT SETTING

The project site is located in the Dry Intermontane Sagebrush Valleys ecoregion, an alluvial valley in the rain shadow of the Salmon River Mountains of central Idaho with sagebrush steppe native vegetation.¹ Garden Creek runs east out of the mountains through the city and discharges to Hannah Slough about a half mile east of the project area. This canal then discharges to the main fork of the Salmon River. The January average snow depth at the Challis weather station is 2 inches, with less snow cover in December and February, based on data from 1895 to 1996.²

THREATENED, ENDANGERED AND CANDIDATE SPECIES

The U.S. Fish and Wildlife Service (USF&WS) revised its threatened and endangered species list³ during the history of this project. The revisions referenced in this memo and attached were issued on October 23, 2013 and August 14, 2014 and were downloaded July 28, 2014, and May 28, 2015, respectively. The list was refined and species were assessed using telephone conversations and email correspondence with the USF&WS Eastern Idaho Field Office, as well as publically available documents.

The following species are listed as threatened within Custer County:

1. **Canada Lynx** (*Lynx canadensis*) – The Canada Lynx reside in boreal forest landscapes and provide one or more of the following beneficial habitat elements including snowshoe hares for prey, abundant, large, woody debris piles that are used as dens, and winter snow conditions that are generally deep and fluffy for extended periods of time.⁴ The proposed project is located in a suburban sagebrush environment not typical of boreal forests and having shallow winter snow depths. **The proposed project will have NO EFFECT on the Canada Lynx.**
2. **Bull Trout** (*Salvelinus confluentus*) – There is no bull trout critical habitat within the boundaries of the project area.⁵ There is a Garden Creek within the Unit 27 listing in the Federal Register, but the coordinates indicate this is a tributary of Panther Creek, about 700 feet above its discharge to the Salmon River, about 112 river miles downstream of Challis.^{6,7} Irrigation diversions cause Garden Creek within the project area to often run dry in the summer, but good flows and fish habitat are present in the upper reaches.⁸ One aspect of the proposed CSWCD project will end routine diversions from Garden Creek for drinking water, which would leave additional flows for aquatic species such as bull trout, except during periods when one of the wells is out of service.

The Salmon River in the vicinity of Challis is bull trout critical habitat. Construction Best Management Practices will be used to prevent construction sediment from reaching the Salmon River via Garden Creek or other unnamed channels. **The proposed project will have NO EFFECT on Bull Trout.**

The following have been listed as Candidate Species within Custer County:

1. **Whitebark Pine** (*Pinus albicaulis*) – The Whitebark pine is a 5 needle conifer species. The species occurs from approximately 2,950 feet at its northern limit in British Columbia up to 12,000 feet in the Sierra Nevada. The Whitebark Pine is typically found at or slightly lower than alpine timberline in the upper montane zone. In the U.S. it is primarily found on public lands.⁹ The proposed project is located in a suburban sagebrush valley environment unsuited to

Whitebark Pine, although the map below shows that the species may be present on surrounding ridges. **The project will have NO EFFECT on whitebark pine.**

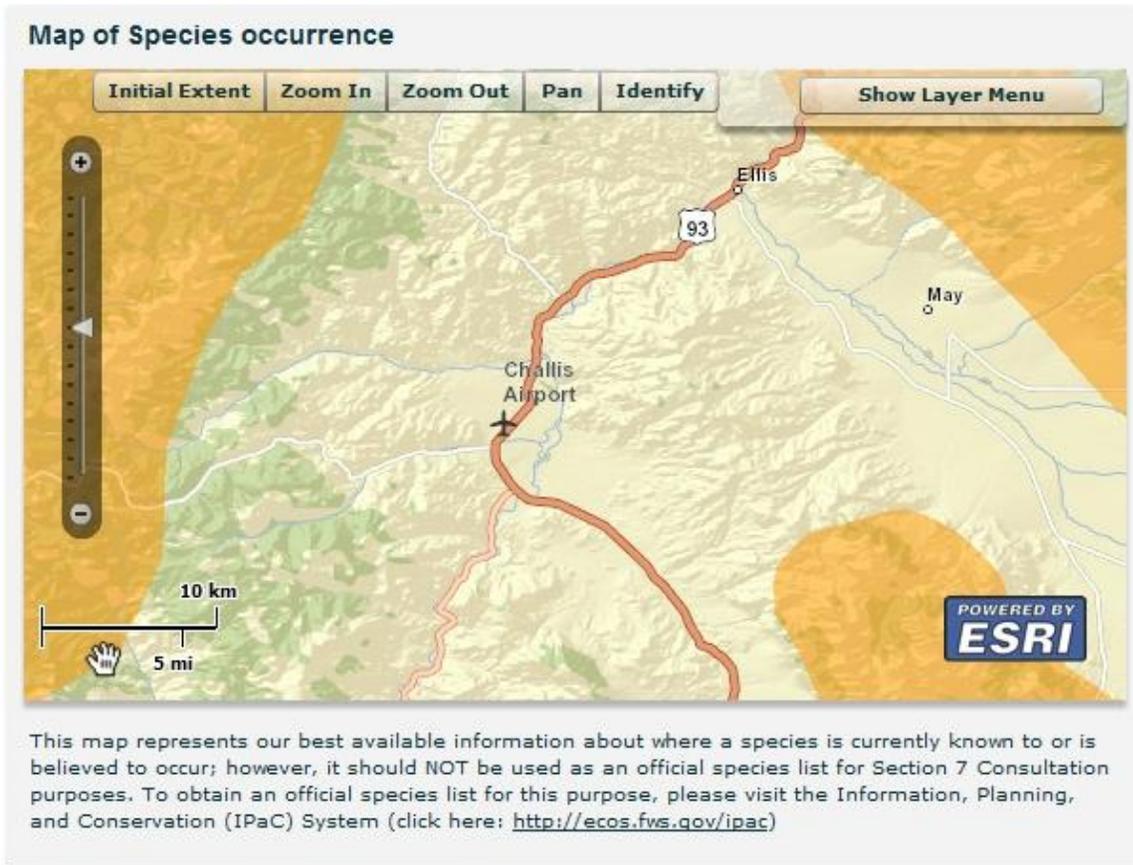


Figure 1. Whitebark Pine species occurrence map (USFWS)

2. **Greater Sage-Grouse** (*Centrocercus urophasianus*) – Grouse reside in Sagebrush Steppe environments, and prefer slightly elevated features surrounded by flat terrain, but not lower portions of hillsides beneath areas that could contain raptors or other predators. The Challis area is surrounded by generally intact sagebrush that could provide suitable habitat at some point during the year, as is evident by the USF&WS species occurrence map below¹⁰, and on the priority areas map below, which shows that Priority Area Y is located just north of town.¹¹ However, examining the species occurrence map on a closer scale shows that it cannot be correct in all details, because most of the developed area within the City of Challis is shown as Greater Sage-Grouse habitat.

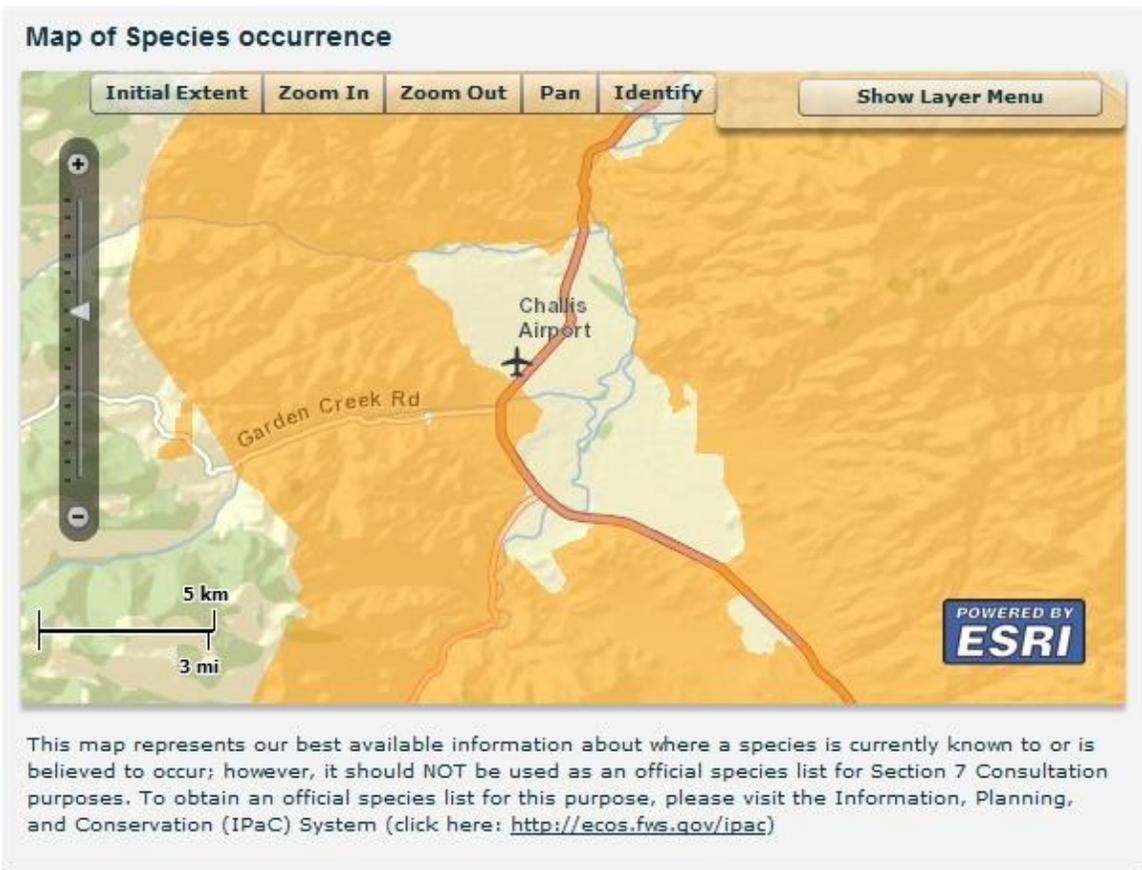


Figure 2. Greater Sage-grouse species occurrence map (USF&WS). See text.

Map of Species occurrence



This map represents our best available information about where a species is currently known to or is believed to occur; however, it should NOT be used as an official species list for Section 7 Consultation purposes. To obtain an official species list for this purpose, please visit the Information, Planning, and Conservation (IPaC) System (click here: <http://ecos.fws.gov/ipac>)

Figure 3. Greater sage-grouse species occurrence map (larger scale, USF&WS). See text.

The preferred Best Management Practice is avoidance: if construction activity must occur during lekking season, work should be postponed until after 10:30 a.m. All project work is proposed to be limited to existing city streets, roads and rights of way, including U.S. Highway 93. This makes it extremely unlikely that leks are present near the project area, since paved roads and primary and secondary routes are believed to cause adverse effects on leks at a distance of 1.6 miles.¹² **The proposed project will have NO EFFECT on the Greater Sage Grouse.**

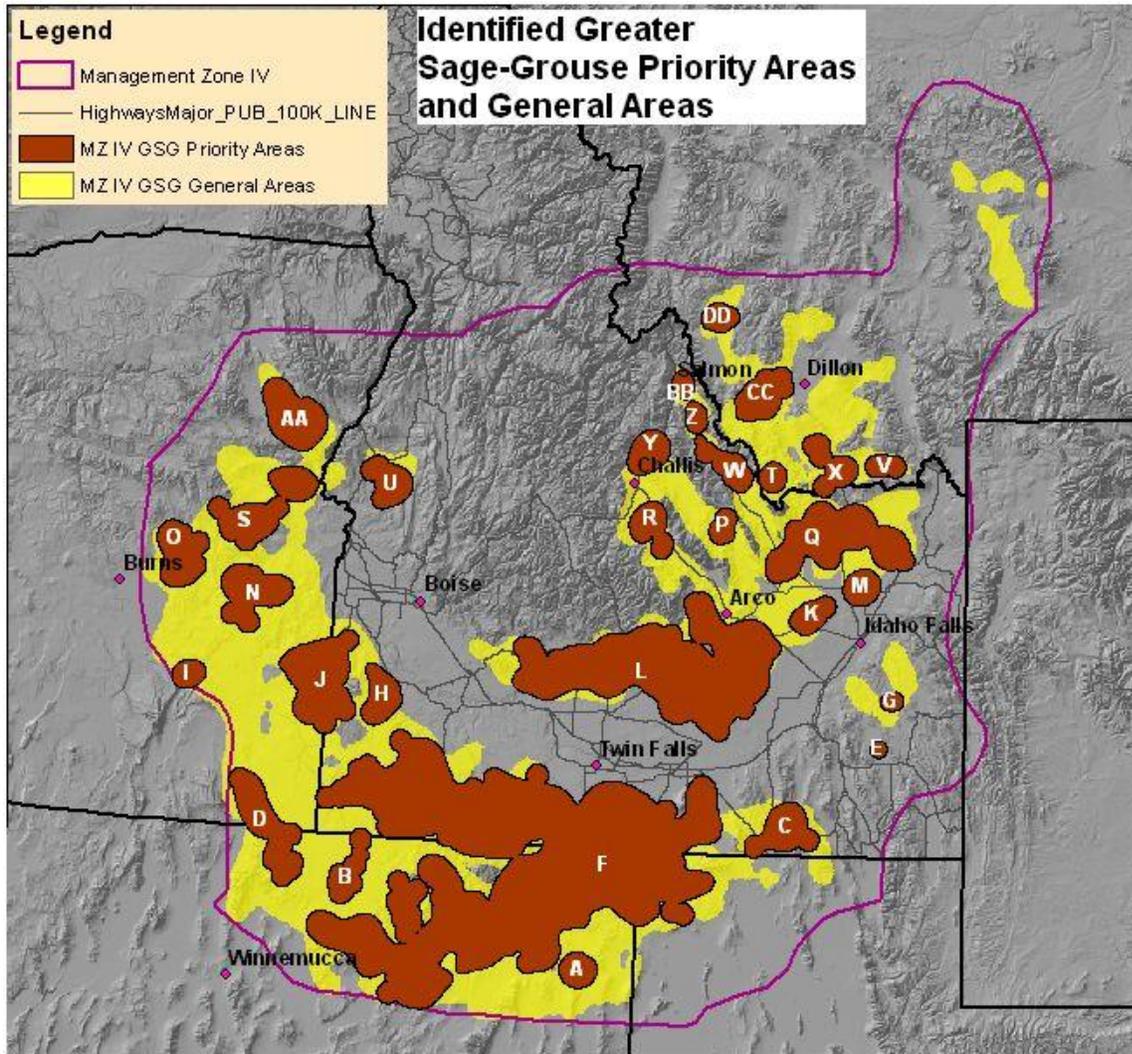


Figure 4. Greater Sage-Grouse Priority Areas and General Areas (BLM 2011)¹³

The following species are listed as a Proposed Threatened Species within Custer County:

1. **North American Wolverine (*Gulo gulo luscus*)** - The North American Wolverine is a proposed species which is not expected to be found in the proposed project planning area. The proposed project is located in suburban and arid foothills environments. Wolverine distribution is restricted to high elevation areas of deep, persistent and reliable spring snow cover (April 15 to May 14) is the best overall predictor of wolverine occurrence in the contiguous U.S.¹⁴ Wolverines are known to travel long distances, so any individuals that may be encountered are almost certain to be travelling between other suitable habitats. January is the snowiest month in for Challis is deepest in January, with an average snow depth of 2 inches over 101 years of data.² This is insufficient snow depth at the project site for wolverine dens, therefore **the proposed project will have NO EFFECT on the wolverine species.**¹⁵

2. **Yellow-Billed Cuckoo (*Coccyzus americanus*)** –Western cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods and willows. Dense understory foliage is believed to be important for nesting sites. They are generally local and uncommon in scattered drainages of the arid and semiarid portions of western Colorado, western Wyoming, Idaho,

Nevada and Utah. USFWS reported in 2011 that the Yellow-Billed cuckoo was considered a rare and local summer resident in Idaho, with only four records of the species in northern and central Idaho over the last century. The majority of sightings have been in the Snake River corridor in southeast Idaho. On the other hand, the same paragraph states that the species has been observed numerous times in the southwestern part of the state in the past 25 years. They concluded that the information at that time was inadequate to judge trends in population or distribution.¹⁶

The Yellow-billed Cuckoo is “known or believed to be present” in the near vicinity of the project area, according to the USF&WS map below.¹⁷ The most likely habitat in the project area would be along the riparian corridor of Garden Creek. However, recent photographs of this corridor show that the trees do not extend far from the creek bank, do not exhibit the dense understory best suited for nesting, and are adjacent to developed areas, such as single family housing, schools and city streets. After reviewing the photographs (one of which is shown below), Nisa Marks of the USF&WS Eastern Idaho Field Office indicated that this was not suitable habitat. This is consistent with the 2014 proposed critical habitat designation,¹⁸ which indicated that floodplains at least 325 feet wide with dense canopy closure greater than 200 acres in extent are generally required to support more than a single breeding pair. The critical habitat proposal includes all known nesting areas greater than 200 acres, based on breeding records between 1998 and 2012, and no such areas were identified in Custer County. **The proposed project will have NO EFFECT on the Yellow-billed cuckoo.**

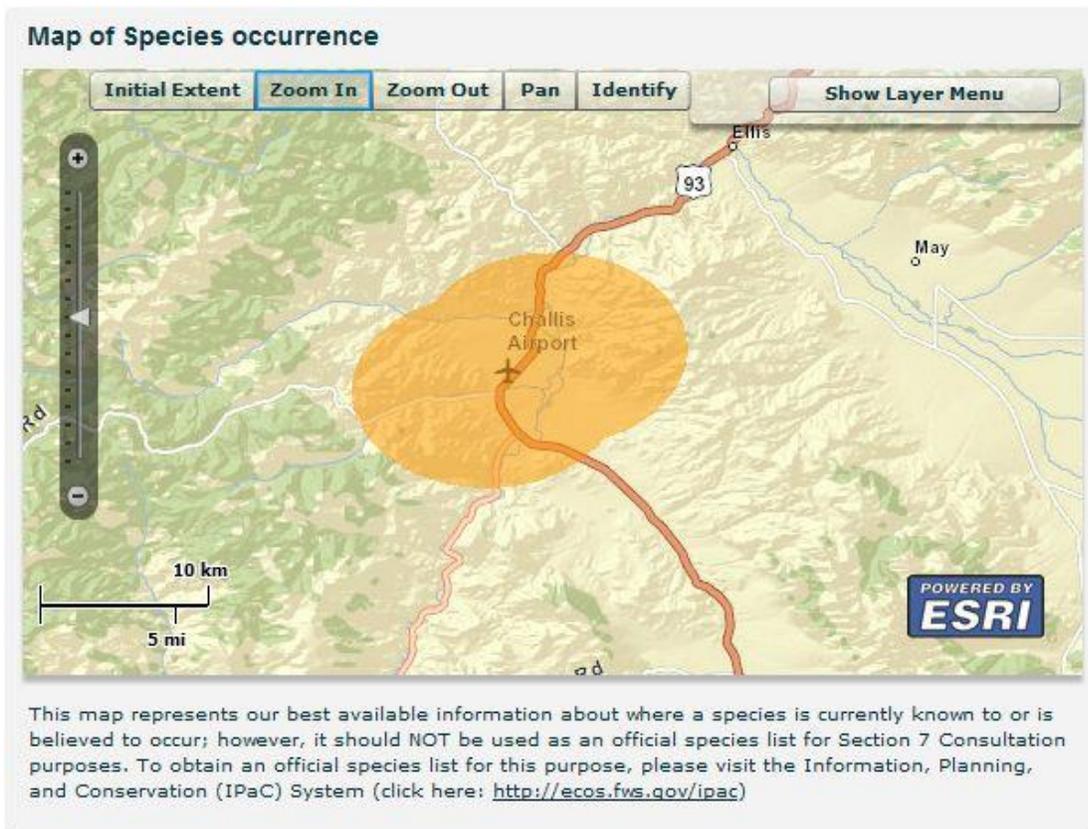


Figure 5. Yellow-Billed Cuckoo species occurrence map (USF&WS). See text.



Figure 6. Narrow corridor of trees with sparse understory in project area are unsuitable Yellow-Billed Cuckoo habitat.

ESSENTIAL FISH HABITAT

The project area is located within the Upper Salmon Subbasin (Hydrologic Unit Code 17060201), which contains Essential Fish Habitat (EFH) for **Chinook Salmon** (*Oncorhynchus tshawytscha*) but not **Coho Salmon** (*Oncorhynchus kisutch*) as identified in the attached EFH map. “All those water bodies occupied or historically accessible” in the identified hydrologic units are considered EFH, according to 50 CFR 660.412. Since there are no barriers to salmon migration downstream of Challis, both the Salmon River and Garden Creek are designated EFH (70FR52630). Because the SRF project will not include work in the Garden Creek channel, and the conservation measures and BMPs identified above are protective of the stream, any potential effects are insignificant in size or discountable. **The SRF project “May Affect, but Is Not Likely to Adversely Affect” Essential Fish Habitat.**

As previously stated, CSWCD and its partners conducted their own assessment and agency consultation for their project. They determined that their project “May Effect but is Not Likely to Adversely Affect” (NLAA) Chinook salmon, steelhead trout or bull trout or their critical habitat.¹⁹ USF&WS concurred that the project was unlikely to adversely affect bull trout, and would probably provide long-term beneficial effects.²⁰ NMFS concurred with the NLAA determination, and determined that the project would not adversely affect EFH.²¹

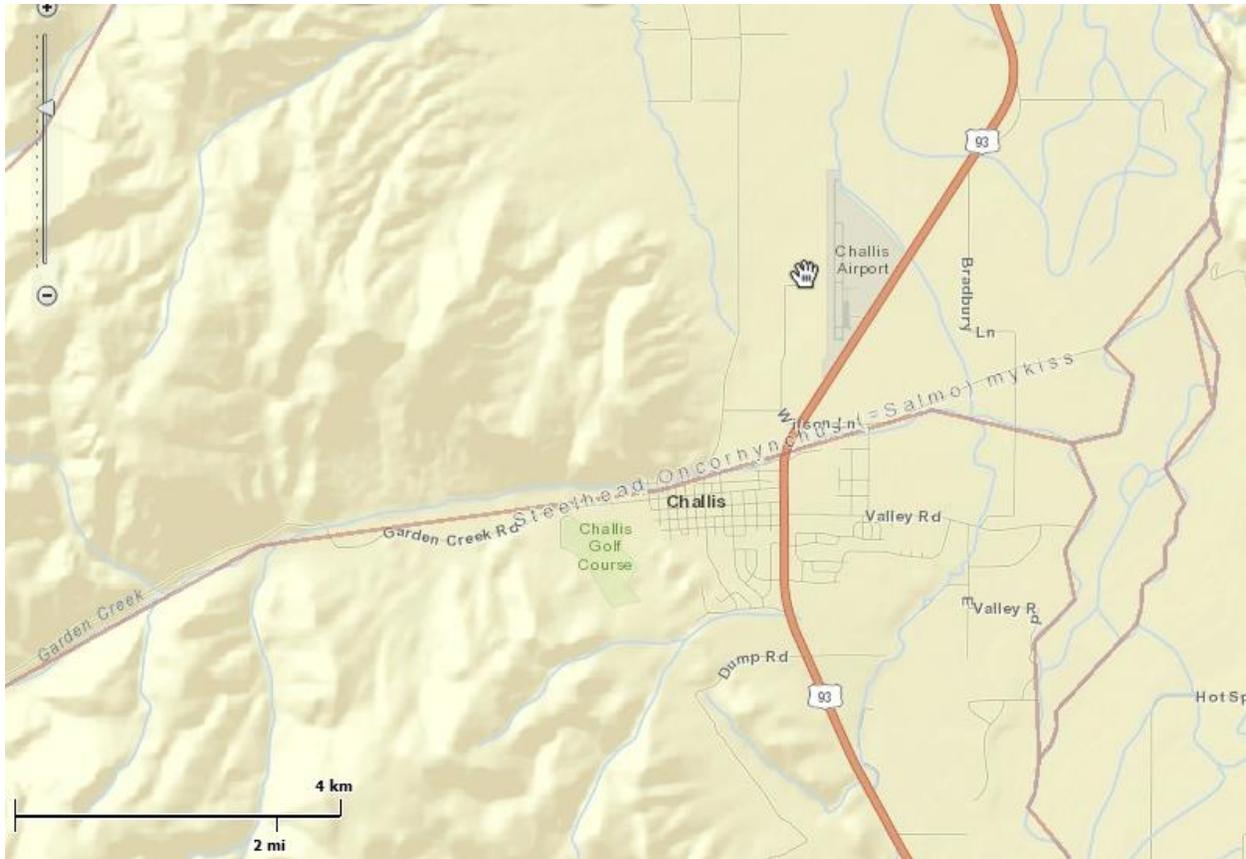


Figure 7. Critical habitat in the project area (USF&WS Critical Habitat Mapper 3.0)²²

MLM

- Attachments:
- Project Map
 - Map: Garden Creek Stream Crossings
 - Idaho Species List, last downloaded May 15, 2015
 - Critical Habitat for Bull Trout Map (Unit 27)
 - DEQ, Chinook Salmon Essential Fish Habitat in Idaho (map)
 - Emails between DEQ and USF&WS, 2013-2014
 - NMFS concurrence letter and EFH response, June 23, 2014
 - USF&WS concurrence letter, June 20, 2014
 - BPA Biological Assessment transmittal letter to NMFS, May 19, 2014
 - BPA Biological Assessment transmittal letter to USF&WS, May 19, 2014
 - Biological Assessment, Garden Creek Rehabilitation Project, Draft Final, April 2014

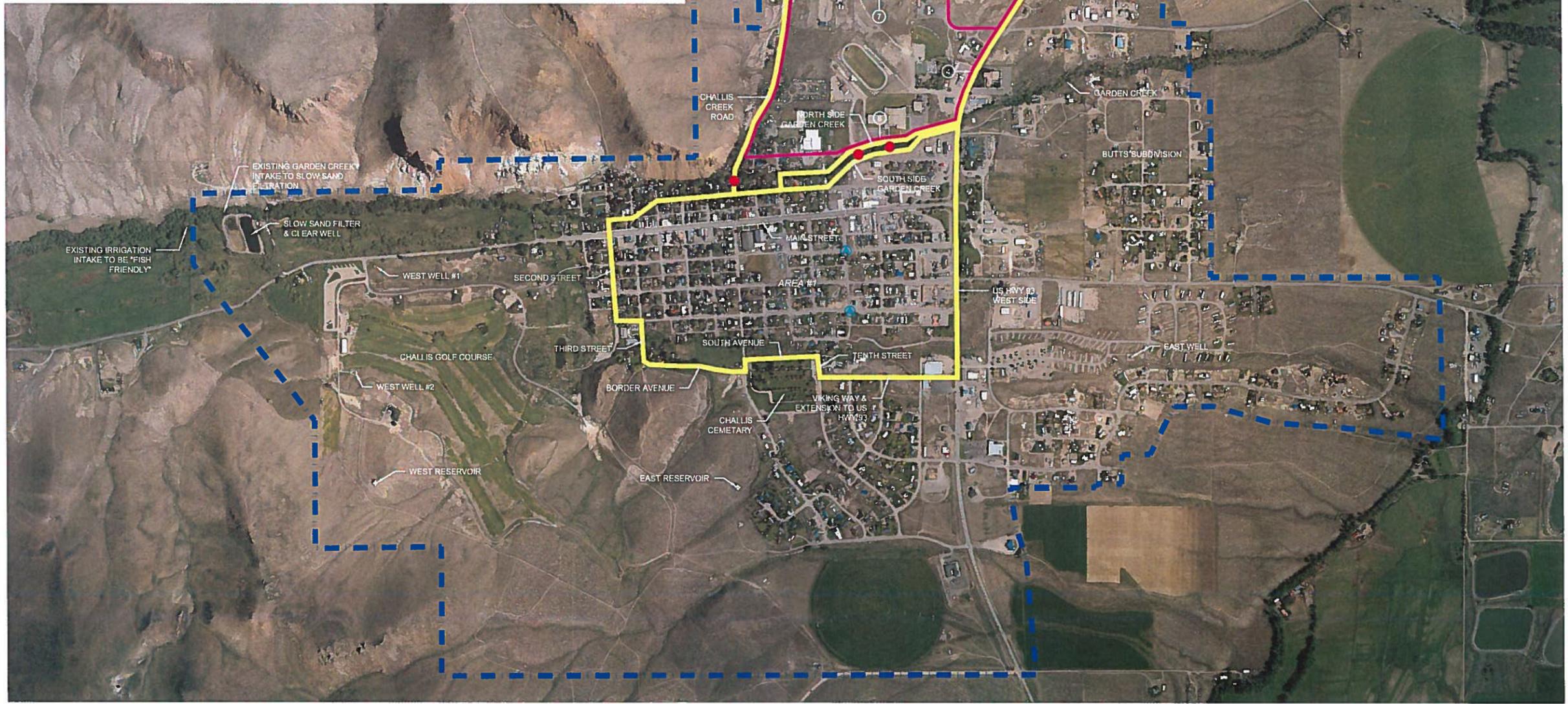
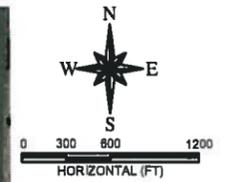
References

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- ¹ McGrath, *et al.*, 2002, *Ecoregions of Idaho*, EPA Western Ecology Division, Corvallis, Oregon, www.epa.gov/wed/pages/ecoregions/id_eco.htm.
- ² Western Regional Climate Center, *Challis, Idaho (101663) Monthly Climate Summary, 1/1/1895 to 6/30/1996*, www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?id1663

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- ³ August 14, 2014, USF&WS, *Idaho Species List*, www.fws.gov/idaho/species/IdahoSpeciesList.pdf, last downloaded May 28, 2015.
- ⁴ USF&WS Species Profile: Canada Lynx (*Lynx canadensis*), ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A073
- ⁵ *Federal Register*, Vol. 75, Page 63898, October 28, 2010.
- ⁶ U.S. Geological Survey, 7.5 minute *Bighorn Creek* quadrangle, 1997.
- ⁷ U.S. Geological Survey, 7.5 minute *Challis* quadrangle, 1997.
- ⁸ *Completion Report, Garden Creek and Gini Canal Crossing Project*, Upper Salmon Subbasin, Salmon, Idaho, July 2007, www.usbr.gov/pn/programs/fcrps/thp/srao/uppersalmon/completion/ginicanal/gini-garden.pdf.
- ⁹ USF&WS Species Profile: Whitebark pine, ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=R00E
- ¹⁰ USF&WS Species Profile: Greater sage-grouse (*Centrocercus urophasianus*), ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06W
- ¹¹ Makela & Major, 2012, *Idaho Sage-grouse Priority Areas White Paper*, www.blm.gov/pgdata/etc/medialib/blm/id/wildlife/sensitive_species/sg_scoping_meeting.Par.67149.File.dat/Idaho_Sage-grouse_Priority_Areas_White_Paper_September_27_2011_FINAL_508.pdf
- ¹² *Draft Idaho and Southwestern Montana Sub-Region Greater Sage-Grouse LUPA/EIS, Vol. II §4.2.1*
- ¹³ BLM, 2011, *Idaho Sage-grouse Priority Areas White Paper, September 27, 2011 FINAL*, www.blm.gov/pgdata/etc/medialib/blm/id/wildlife/sensitive_species/sg_scoping_meeting.Par.67149.File.dat/Idaho_Sage-grouse_Priority_Areas_White_Paper_September_27_2011_FINAL_508.pdf
- ¹⁴ USF&WS Species Profile: North American wolverine (*Gulo gulo luscus*), ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0FA
- ¹⁵ USF&WS withdrew its proposal to list the North American wolverine as threatened with the contiguous United States; *Federal Register*, Vol. 79, Page 47521, August 13, 2014.
- ¹⁶ USFWS 2011, *Species Assessment and Listing Priority Assignment Form*, ecos.fws.gov/tess_public/candidateReport!streamPublishedPdfForYear.action?candidateId=22&year=2011, obtained from Reference 13.
- ¹⁷ USF&WS Species Profile: Yellow-Billed Cuckoo (*Coccyzus americanus*), ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06R#candidate.
- ¹⁸ *Federal Register*, Vol. 79, Page 48547, August 15, 2014.
- ¹⁹ Michael J. Donahoo, *Biological Assessment: Garden Creek Rehabilitation Project*, April 2014.
- ²⁰ David Kampwerth of USF&WS, concurrence letter to Michelle Guay of BPA, June 20, 2014.
- ²¹ William W. Stelle of NMFS, concurrence letter to Michelle Guay of BPA, June 23, 2014.
- ²² USF&WS Critical Habitat Mapper 3.0, ecos.fws.gov/crithab/flex/crithabMapper.jsp, accessed March 27, 2014.

LEGEND:

- EXISTING GARDEN CREEK WATERPIPE CROSSING
- ▲ FUTURE PRESSURE REDUCING STATION
- CHALLIS FACILITY PLAN STUDY AREA - 1722 ACRES ± - 2.69 SQ. MILES ± (PPPA/APE)
- CONSTRUCTION AREA # 1 - OLD TOWN WATER SYSTEM IMPROVEMENTS - 182 ACRES ± - 0.25 SQ. MILES ±
NEW 8" C900 PVC PIPELINE
NEW 8" FIRE HYDRANTS
NEW PRESSURE REDUCING STATIONS
- CONSTRUCTION AREA # 2 - AIRPORT FIRE LINE - 309 ACRES ± - 0.46 SQ. MILES ±
NEW 8" C900 PVC PIPELINE
NEW 8" FIRE HYDRANTS
NEW PRESSURE REDUCING STATIONS
- PROPOSED PIPELINE AREAS -
1. UPGRADE AND EXTEND CHALLIS CREEK ROAD PIPELINE TO SUBDIVISION. USE EXISTING ROAD AND R.O.W. 3600± L.F.
2. NEW SUBDIVISION PIPELINE CONNECTING FROM CHALLIS CREEK ROAD TO RODEO ROAD. USE EXISTING ROAD AND R.O.W. 2100± L.F.
3. NEW PIPELINE FOR CITY AND STATE YARDS CONNECTING FROM RODEO ROAD TO US 93 R.O.W. USE EXISTING ROAD AND R.O.W. 1500± L.F.
4. US 93 R.O.W. PIPELINE CONNECTING FROM SCHOOL LINES TO CHALLIS AIRPORT. USE US 93 R.O.W. 4500± L.F.
5. AIRPORT LOOP PIPELINES. USE EXISTING STREETS AND R.O.W. 3750± L.F.
6. RODEO ROAD PIPELINE CONNECTING FROM CLINIC ROAD AND US 93 TO CITY YARD AND SUBDIVISION. USE EXISTING ROAD AND R.O.W. 2700± L.F.
7. UPGRADE PIPELINE IN CLINIC ROAD FROM CHALLIS CREEK ROAD TO RODEO ROAD. USE EXISTING ROAD AND R.O.W. 1850± L.F.
8. UPGRADE AS NEEDED EXISTING CITY MAINS ALONG CHALLIS SCHOOLS FROM CHALLIS CREEK ROAD TO US 93. USE EXISTING ROADS AND R.O.W. 2250± L.F.



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RIEDEL
Engineering

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NO	DATE	BY	DESCRIPTION
1	5/23/14	AS	ISSUED FOR PERMIT
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CITY OF CHALLIS
2011 SYSTEM FACILITY PLAN
2014
PROJECT MAP

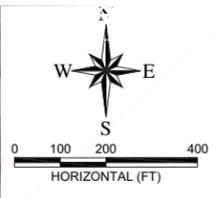
**PRELIMINARY
NOT FOR
CONSTRUCTION**

DESIGNED	VAS
DESIGN CHECKED	DGA
DETAILED	VAS
DRAWING CHECKED	DGA
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DRAWING SCALE	AS SHOWN
SHEET	1 OF 1

PLOT DATE: 5/23/2014
Z:\1670-CITY OF CHALLIS GENERAL SERVICES\1670CADD\DRAWINGS\1688-CITY OF CHALLIS PLAN.DWG

LEGEND:

- EXISTING GARDEN CREEK WATERPIPE CROSSING
- GARDEN CREEK (APPROXIMATED FROM FEMA FIRM 16037C0381 C)
- GARDEN CREEK 100 YEAR FLOOD BOUNDARY (APPROXIMATED FROM FEMA FIRM 16037C0381 C)
- CHALLIS FACILITY PLAN STUDY AREA - 1722 ACRES ± - 2.69 SQ. MILES ± (PPPA/APE)
- PROPOSED "OLD TOWN" WATER IMPROVEMENTS
- CONSTRUCTION AREA # 1 - OLD TOWN WATER SYSTEM IMPROVEMENTS - 162 ACRES ± - 0.25 SQ. MILES ±
NEW 6" C900 PVC PIPELINE
NEW 6" FIRE HYDRANTS
NEW PRESSURE REDUCING STATIONS
- CONSTRUCTION AREA # 2 - AIRPORT FIRE LINE - 309 ACRES ± - 0.48 SQ. MILES ±
NEW 6" C900 PVC PIPELINE
NEW 6" FIRE HYDRANTS
NEW PRESSURE REDUCING STATIONS
- PROPOSED PIPELINE AREAS NORTH OF GARDEN CREEK -
1. UPGRADE AND EXTEND CHALLIS CREEK ROAD PIPELINE TO SUBDIVISION. USE EXISTING ROAD AND R.O.W. 3600± L.F.
2. NEW SUBDIVISION PIPELINE CONNECTING FROM CHALLIS CREEK ROAD TO RODEO ROAD. USE EXISTING ROAD AND R.O.W. 2100± L.F.
3. NEW PIPELINE FOR CITY AND STATE YARDS CONNECTING FROM RODEO ROAD TO US 93 R.O.W. USE EXISTING ROAD AND R.O.W. 1500± L.F.
4. US 93 R.O.W. PIPELINE CONNECTING FROM SCHOOL LINES TO CHALLIS AIRPORT. USE US 93 R.O.W. 4500± L.F.
5. AIRPORT LOOP PIPELINES. USE EXISTING STREETS AND R.O.W. 3750± L.F.
6. RODEO ROAD PIPELINE CONNECTING FROM CLINIC ROAD AND US 93 TO CITY YARD AND SUBDIVISION. USE EXISTING ROAD AND R.O.W. 2700± L.F.
7. UPGRADE PIPELINE IN CLINIC ROAD FROM CHALLIS CREEK ROAD TO RODEO ROAD. USE EXISTING ROAD AND R.O.W. 1650± L.F.
8. UPGRADE AS NEEDED EXISTING CITY MAINS ALONG CHALLIS SCHOOLS FROM CHALLIS CREEK ROAD TO US 93. USE EXISTING ROADS AND R.O.W. 2250± L.F.
8.1. PROPOSED WATERLINE LOCATION VARIES ALONG GARDEN CREEK. WATERLINE IS APPROXIMATELY 25 FEET TO 50 FEET NORTH OF VEGETATION ALONG CREEK EMBANKMENT. ANY REQUIRED CROSSINGS WILL BE MADE BY UTILIZING EXISTING POTABLE WATERLINE CROSSINGS OR THROUGH HORIZONTAL DIRECTIONAL DRILLING THAT WILL BEGIN AND END OUTSIDE OF ANY WATERWAYS AND WETLAND OR AREAS.
8.2.



202 Falls Avenue
Twin Falls, Id. 83301
Phone: (208) 733-2446
Fax: (208) 734-2748

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Engineering

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NO.	DATE	BY	DESCRIPTION

CITY OF CHALLIS
ENVIRONMENTAL INFORMATION DOCUMENT (EID)
MAY 2015

GARDEN CREEK STREAM CROSSINGS

**PRELIMINARY
NOT FOR
CONSTRUCTION**

DESIGNED	CLB
DESIGN CHECKED	KTS
DETAILED	CLB
DRAWING CHECKED	KTS
FILE NAME	1970-STREAM CROSSINGS.dwg
DRAWING DATE	5/25/15
DRAWING SCALE	AS SHOWN

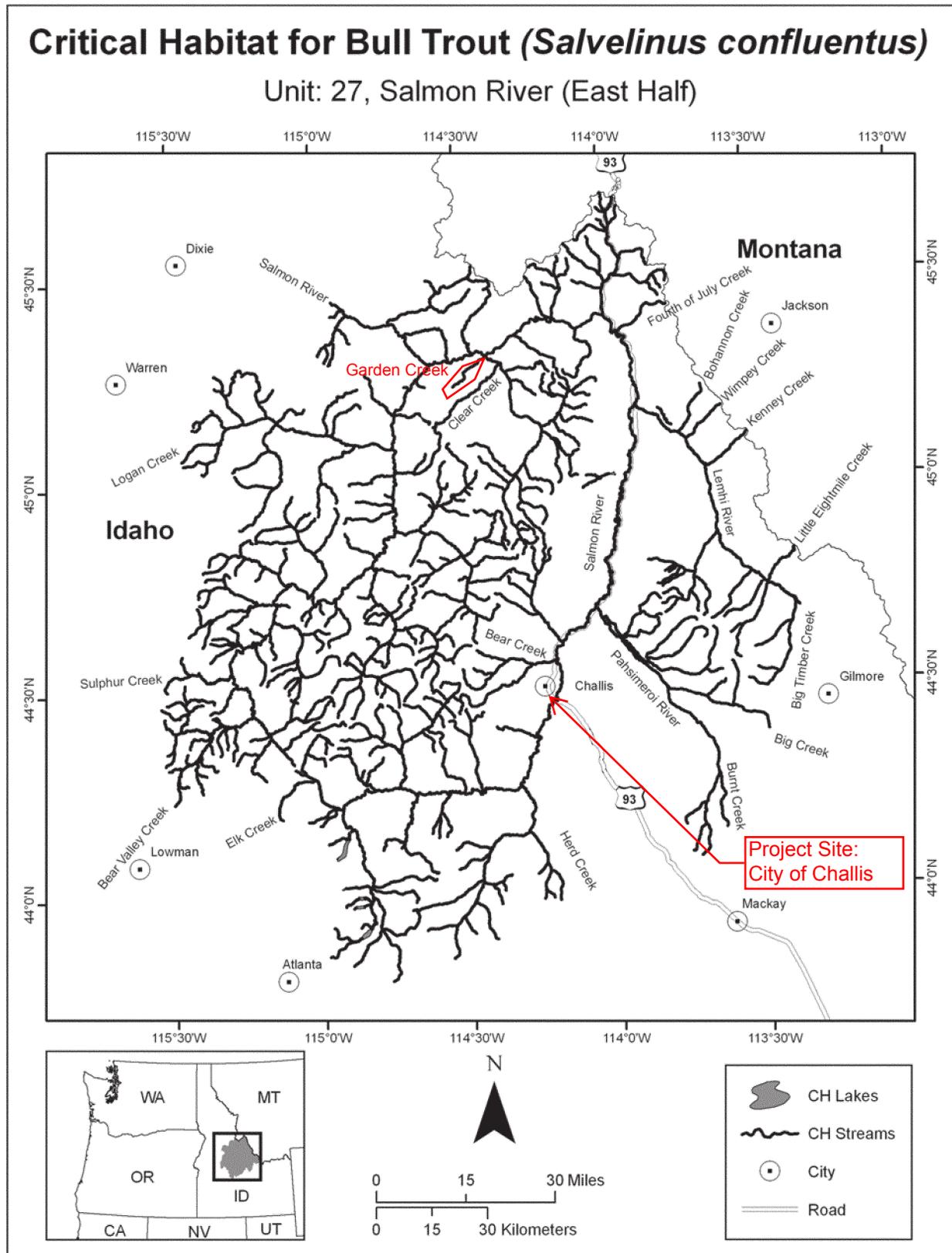
PLOT DATE: 5/26/2015
C:\USERS\CBAL\Y01\DESKTOP\CHALLIS1970-STREAM CROSSINGS.DWG

U.S. Fish and Wildlife Service • Idaho Fish and Wildlife Office

LISTED, CANDIDATE, AND PROPOSED SPECIES & DESIGNATED AND PROPOSED CRITICAL HABITAT IN IDAHO

Common Name	Herps	Birds	Mammals					Fish	Mollusks				Plants										
	Columbia Spotted Frog (Great Basin Population)	Greater Sage-Grouse	Yellow-Billed Cuckoo	Canada Lynx	Grizzly Bear	Northern Idaho Ground Squirrel	Selkirk Mountains Woodland Caribou	Southern Idaho Ground Squirrel	Bull Trout	Kootenai River White Sturgeon	Banbury Springs Lanx	Bliss Rapids Snail	Bruneau Hot Springsnail	Snake River Physa	Goose Creek Milkvetch	MacFarlane's Four-O'Clock	Packard's Milkvetch	Slickspot Peppergrass	Spalding's Catchfly	Ute Ladies'-Tresses	Water Howellia	Whitebark Pine	
Scientific Name	<i>Rana lateiventris</i>	<i>Centrocercus urophasianus</i>	<i>Coccyzus americanus</i>	<i>Lynx canadensis</i>	<i>Ursus arctos horribilis</i>	<i>Spermophilus brunneus brunneus</i>	<i>Rangifer tarandus caribou</i>	<i>Spermophilus brunneus endemicus</i>	<i>Salvelinus confluentus</i>	<i>Acipenser transmontanus</i>	<i>Lanx</i> sp.	<i>Taylorconcha serpenticola</i>	<i>Pyrgulopsis bruneauensis</i>	<i>Haitia (Physa) natricina</i>	<i>Astragalus anserinus</i>	<i>Mirabilis macfarlanei</i>	<i>Astragalus cusickii</i> var. <i>parkardiae</i>	<i>Lepidium papilliferum</i>	<i>Silene spaldingii</i>	<i>Spiranthes dilatata</i>	<i>Howellia aquatilis</i>	<i>Pinus albicaulis</i>	
Gooding		C								E	T		E										
Idaho				T					T-DCH						T				T				C
Jefferson		C	P-PCH	T																T			
Jerome		C									T		E										
Kootenai			P	T					T-DCH										T		T		
Latah				T															T		T		
Lemhi		C	P	T					T-DCH														C
Lewis									T-DCH										T				
Lincoln		C	P																				
Madison		C	P-PCH	T																T			
Minidoka		C	P										E										
Nez Perce				T					T-DCH										T				
Oneida		C																					
Owyhee	C	C	P						T-DCH				E	E					P-PCH				
Payette		C						C	T					E		C			P-PCH				
Power		C	P																				
Shoshone				T					T-DCH											T		T	C
Teton				T	T																		C
Twin Falls	C	C									T		E										
Valley				T		T			T-DCH														C
Washington		C				T		C	T-DCH					E									C

Table Key: C = Candidate Species P= Proposed Species T=Threatened Species E=Endangered Species PCH= Proposed Critical Habitat DCH=Designated Critical Habitat



BILLING CODE 4310-55-C

(36) Unit 27: Salmon River – West Half

(i) The entire Salmon River unit consists of 7,376.5 km (4,583.5 mi) of

streams and 1,683.8 ha (4,160.6 ac) of lakes and reservoirs. The unit is located in central Idaho.

(ii) See paragraph (e)(35)(ii) of this entry for a complete list of individual waterbodies in this unit.

Chinook Salmon Essential Fish Habitat (EFH) in Idaho



Legend

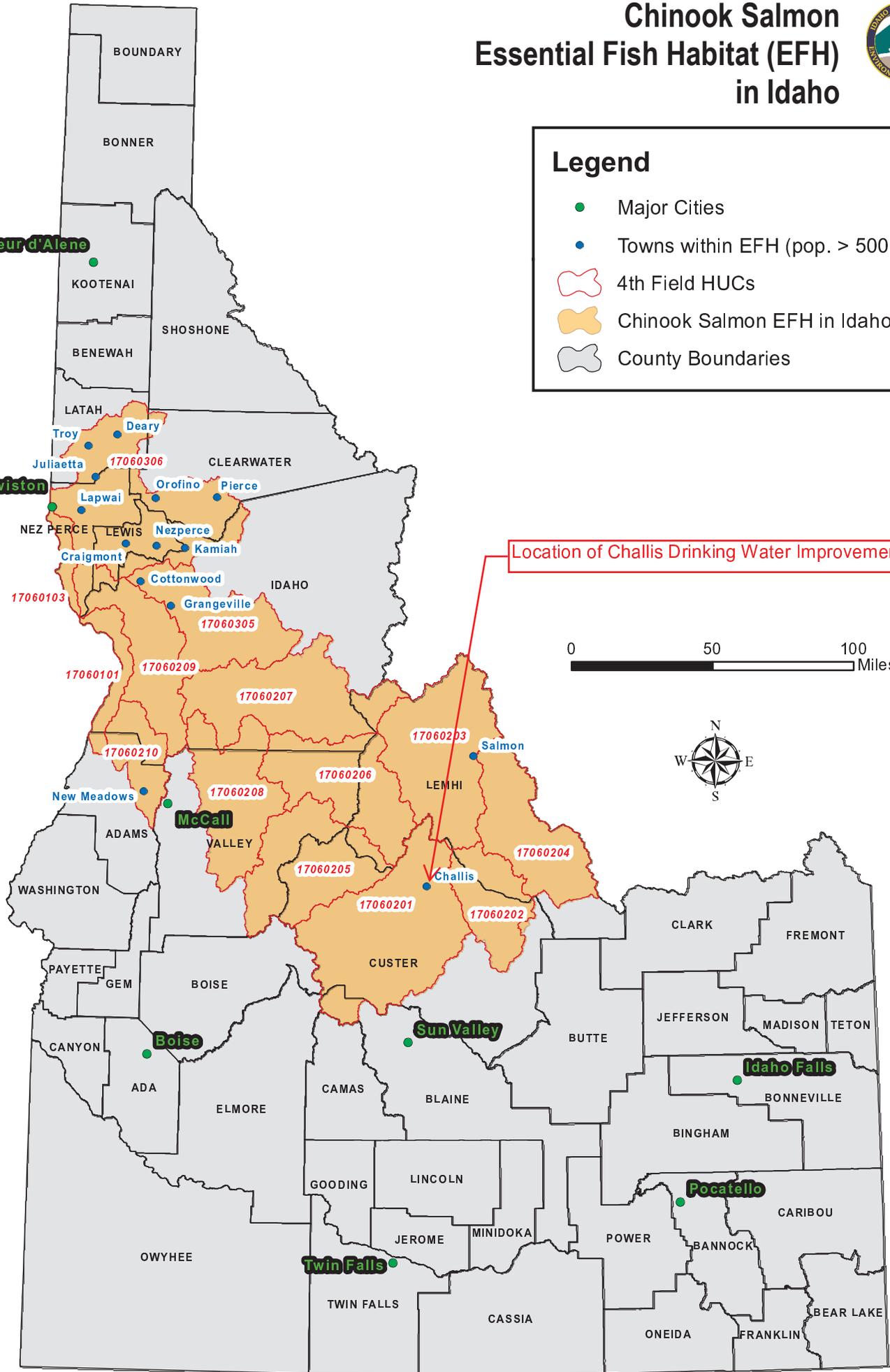
- Major Cities
- Towns within EFH (pop. > 500)
- 🔲 4th Field HUCs
- 🟡 Chinook Salmon EFH in Idaho
- 🔲 County Boundaries

Coeur d'Alene

Lewiston

Location of Challis Drinking Water Improvements

0 50 100 Miles



From: Marks, Nisa <nisa_marks@fws.gov>
Sent: Wednesday, April 23, 2014 14:15
To: Mike May
Cc: cswcd; David Kampwerth
Subject: Re: follow-up consultation on T&E species issues and Challis drinking water improvements

Mike -

OK, thanks for letting me know about the CSWCD project.

Thank you for informing us of your no effect determination for bull trout. We have not identified any other issues that indicate that further consultation under section 7 of the Endangered Species Act would be needed for this project.

Feel free to be in touch with any further questions.

Nisa Marks, Biologist
US Fish and Wildlife Service
Eastern Idaho Field Office
4425 Burley Dr., Suite A
Chubbuck, ID 83202
208-237-6975 x121

On Wed, Apr 23, 2014 at 1:26 PM, <Michael.May@deq.idaho.gov> wrote:
Thanks, Nisa.

The CSWCD project is being run separately, and I expect that they will be consulting you about the specifics of that project. I brought it up because of the cumulative effects issue with NEPA, and the court cases that say reasonably foreseeable related projects should not be ignored.

Regarding the bull trout, the SRF project (the one described by the maps) does not involve any work within Garden Creek or in its riparian zone. I expect it to have no effect on bull trout, as long as we follow standard construction BMPs that prevent sediments from being transported into Garden Creek or the Salmon River. Do we need a more formal determination than that?

From: Marks, Nisa [mailto:nisa_marks@fws.gov]
Sent: Wednesday, April 23, 2014 11:14
To: Mike May
Cc: cswcd@custertel.net; David Kampwerth
Subject: Re: follow-up consultation on T&E species issues and Challis drinking water improvements

Hi Mike,

Thanks for being in contact. To answer your questions:

1) We appreciate being notified of your no effect determination for wolverine, and do not see any issues that would indicate further consultation under the Act would be needed for this species.

- 2) I would not consider the area in the photo suitable yellow-billed cuckoo habitat.
- 3) I have no additional thoughts about sage grouse, beyond what we previously discussed.
- 4) Is the CSWCD project being done as part of the same proposed project as the drinking water project, or separately? (if the same project, I would need more information about that component before being comfortable about an effects determination.)
- 5) Migratory bull trout likely would use the area, in low densities. Do you need additional information? Have you reached an effects determination for bull trout for the project?

Hope that helps; let me know if I can be of additional assistance.

Nisa Marks, Biologist
US Fish and Wildlife Service
Eastern Idaho Field Office
4425 Burley Dr., Suite A
Chubbuck, ID 83202
208-237-6975 x121

On Tue, Apr 22, 2014 at 3:43 PM, <Michael.May@deq.idaho.gov> wrote:

-----< Attachments >-----

USFW Consultation - Challis DW - 29 Nov 2011

Trees along Garden Creek (EID excerpt) - Challis DW - 28 Jan 2014

Revised project map Sheet 1 from EID - Challis DW - 16 Dec 2013

Garden Creek and Old Town expanded scale map - Challis DWL - 21 April 2014

Hi Nisa, I want to follow up on our consultation from last year regarding the City of Challis drinking water project. First, to refresh your memory, I am pasting in my notes from our May 21, 2013 telephone conversation.

May 21, 2013 10:30

- I clarified the operation of the SSF and indicated that I thought the intake was also being left in place. Flows were being replaced in near term and intermediate term with wells, so habitat would presumably be improved by greater flows. City is retaining water right. Some stream crossings, don't know if they are on bridges, or how replacements would be done.
- Nisa fine w/ determination for lynx, sage grouse, Whitebark pine
- Is there dense riparian cottonwood/willow zone for breeding? Season would be mid-March to August 1, but only if habitat present. Otherwise, might be present during migration only, not a concern.
- For bull trout, clarify in-stream activity, withdrawals or anything creating noise, such as pumps. She will check on specifics of bull trout in Garden Creek

Now, some clarifications that should be relevant to bull trout, yellow-billed cuckoo and North American wolverine:

- My telephone conversation notes didn't indicate anything about the North American wolverine. Please confirm whether there any concerns there. I assume the very thin snow cover is dispositive for this species.
- The scope has changed somewhat, and I am attaching an updated project map (two 11"x17" sheets).
- For this project, there is no work planned on stream crossings, and the drinking water intake in Garden Creek will remain in place. Challis will be retaining the water right, but plans to use Garden Creek only as a redundant source (when one of its wells is out of service), so most of the time the water now being withdrawn will be allowed to flow in Garden Creek.
- However, a related project to be conducted by the Custer Soil and Water Conservation District (CSWCD) and funded by Bonneville Power will be removing the existing intake, which blocks fish passage, and installing a new intake upstream that does not block fish passage. They will also be drilling two new wells. The contact for that project is Karma Bragg of CSWCD, who is being copied on this email. She will be consulting with you in detail, but it appears that the long term effects should be positive as far as bull trout are concerned.
- The engineers have supplied some photographs of the trees along Garden Creek within the project area, which I have provided in an attached PDF. The trees appear to lie in a narrow riparian corridor, and are often in close proximity to single-family homes. Is this likely yellow-billed cuckoo habitat that we should be concerned about?

I checked the current Idaho Species List <www.fws.gov/idaho/species/IdahoSpeciesList.pdf>, which was last updated on October 23, 2013. The same six species are identified as on the February 6, 2013 list that was current when we last spoke, although the Yellow-billed cuckoo status was changed from Proposed to Candidate. Also, the draft BLM Greater sage-grouse land use plan amendment went through public comment. Have these or any other recent developments changed your view about whether the Greater sage-grouse would be impacted by the project?

Thanks for your assistance with this project.

Mike May
Sr. Water Quality Analyst
Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706
(208) 373-0406
Michael.May@deq.idaho.gov

From: Mike May
Sent: Friday, May 17, 2013 15:19
To: Nisa Marks (USF&WS)
Subject: T&E species issues and Challis drinking water improvements

Hi Nisa, sorry we missed each other playing telephone tag today. I wanted to follow up on a few items.

There had been contact between the engineer and your office back in November of 2011, at which time salmon, steelhead and bull trout were the only species identified. For reference, I am attaching a copy of the correspondence. By the way, since I am preparing an Essential Fish Habitat Determination for submittal to NMFS, I will be interested in any insights you have on salmonids, although I didn't ask about them previously.

Also, I have obtained somewhat better maps, which may or may not be helpful to you. The first two maps in the attached set are the same as I sent on Wednesday, so the current attachment contains four maps:

- Locator map. I'm sure you know where Challis is, but it includes a more visible project boundary than the next map;
- Project Map (aerial photo); unfortunately the color of the project boundary doesn't contrast well;
- Existing system map; shows where the existing features are, particularly the intake on Garden Creek; note that the boundary on this map is only a portion of the project area; and
- Project features, divorced from underlying land features; more legible than the previous version, with more project features visible.

Hopefully we can touch bases on Monday morning. Thanks again.

Mike May

Sr. Water Quality Analyst
Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706
(208) 373-0406
Michael.May@deq.idaho.gov

From: Mike May
Sent: Wednesday, May 15, 2013 14:24
To: 'Marks, Nisa'
Subject: RE: T&E species issues and Challis drinking water improvements

Thanks, that will be excellent. Here's the map that I neglected to attach. Actually, it's a set of three maps in one PDF:

- Locator map. I'm sure you know where Challis is, but it includes a more legible project boundary than the next map;
- Project Map (aerial photo); unfortunately the color of the project boundary doesn't contrast well; and
- Project features, divorced from underlying land features; probably not useful for your purposes, but illustrative of the project scope.

From: Marks, Nisa [mailto:nisa_marks@fws.gov]
Sent: Wednesday, May 15, 2013 13:39
To: Mike May
Cc: DAcheson@riedeseleng.com; dstark@northwindgrp.com; MaryAnna Peavey; Ester Ceja
Subject: Re: T&E species issues and Challis drinking water improvements

Thank you for the email; I will take a look and be in touch in the next couple of days.

Best,

Nisa Marks, Biologist
US Fish and Wildlife Service
Eastern Idaho Field Office
4425 Burley Dr., Suite A

Chubbuck, ID 83202
208-237-6232 x121

On Wed, May 15, 2013 at 1:30 PM, <Michael.May@deq.idaho.gov> wrote:

I am writing to enquire about potential effects on threatened and endangered species of a proposed drinking water improvements project in the City of Challis, potentially funded by the Idaho Drinking Water State Revolving Fund or other federally-derived funds.

The project site is shown on the attached map, and consists mostly of previously developed land and adjacent lands within the valley floor and adjoining arid foothills.

The proposed project for the City of Challis Drinking Water Improvements includes construction of two new wells and appurtenances; mothballing an existing surface water intake and treatment plant on Garden Creek; replacement of existing distribution mains and construction of new extensions; installation of valves, hydrants, pressure-reducing valves and replacement of meters.

The current Idaho species list indicates several threatened, endangered, candidate and proposed species in Custer County. Based on our initial review, we believe the effects on threatened and endangered species will be as follows:

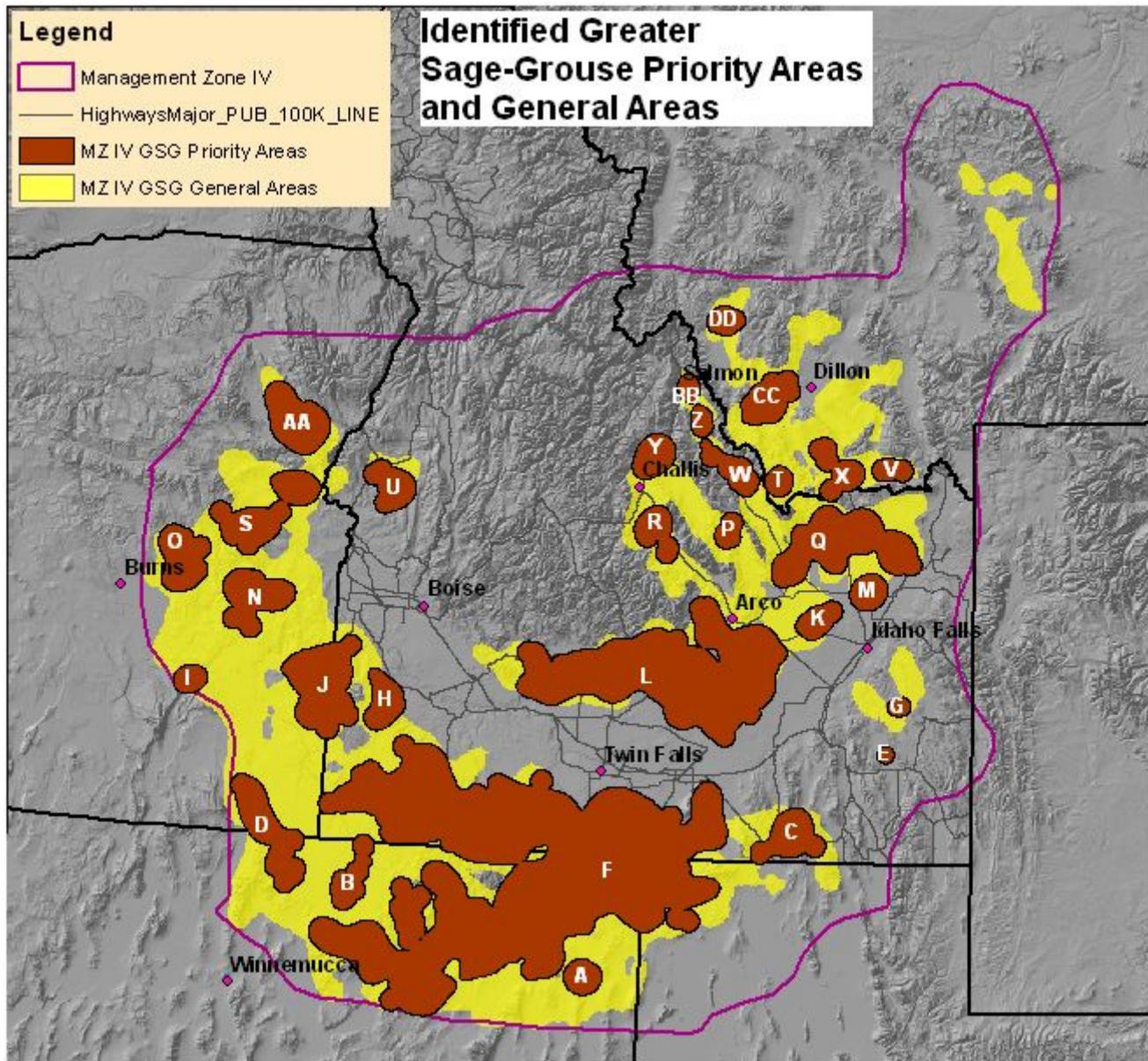
- **Canada Lynx** (*Lynx canadensis*). Because the Canada Lynx resides in arboreal forests which have deep fluffy snow cover for extended periods, and the project site is in suburban developed land and adjacent arid treeless foothills with typical winter snow cover of 2 inches or less, we expect that there will be no impact from the project.

- **Bull Trout** (*Salvelinus confluentus*). The Salmon River near Challis is identified in 75FR63898 (2010) as critical habitat for bull trout in Unit 27 (Salmon River). Although there is a Garden Creek listed in the water body table for Unit 27, the coordinates indicate that it is not the Garden Creek that flows through Challis. Reduced withdrawal from Garden Creek has the potential to improve habitat, but since the city is retaining its water right, the improvements may not be permanent. We expect that there is a limited potential for negative short-term impacts during construction, and request agency advice regarding appropriate mitigation measures.

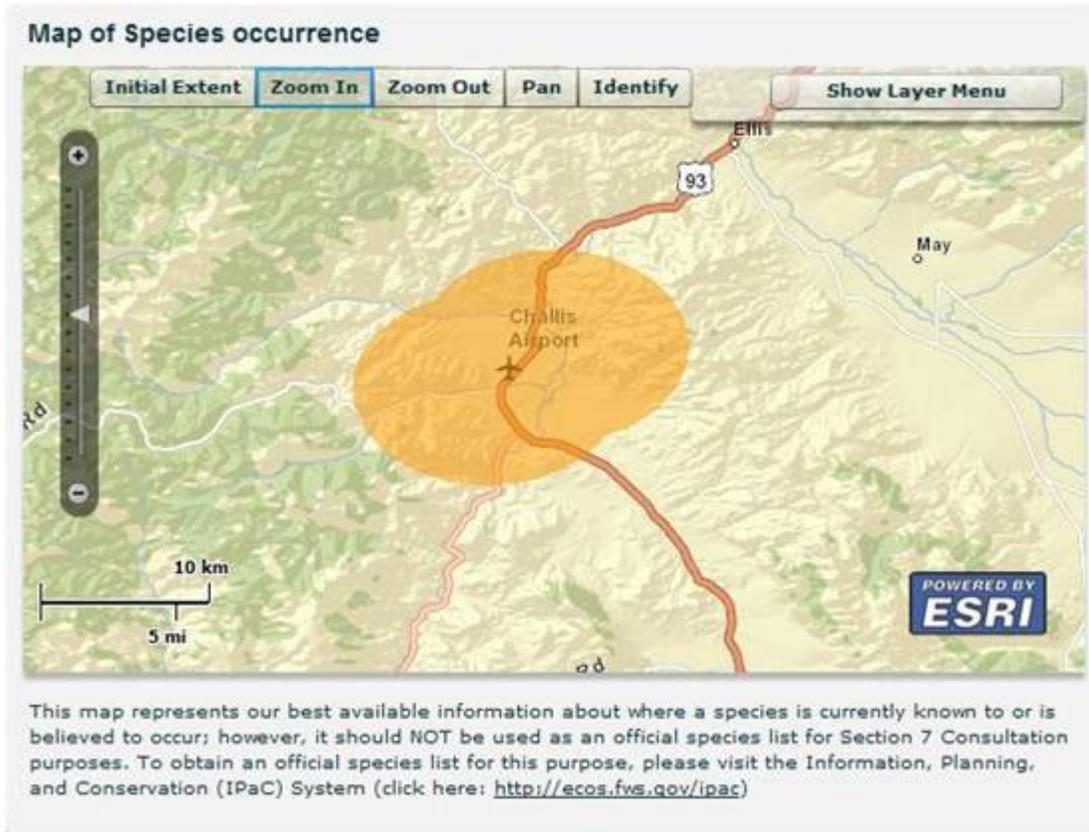
- **Whitebark Pine** (*Pinus albicaulis*). Because the Whitebark Pine is typically found near the alpine timber line, and the project site is in suburban developed land and adjacent arid treeless foothills, we expect that there will be no impact from the project.

Greater Sage Grouse (*Centrocercus urophasianus*). Grouse reside in sagebrush steppe environments and prefer slightly elevated features surrounded by flat terrain, but not lower portions of hillsides beneath areas that could contain raptors or other predators. The Challis area has been identified as having generally intact sagebrush that could provide suitable habitat at some point during the year, and Priority Area Y is located just north of town, as can be seen in the figure below <www.blm.gov/pgdata/etc/medialib/blm/id/wildlife/sensitive_species/sg_scoping_meeting.Par.67149.File.dat/Idaho_Sage-grouse_Priority_Areas_White_Paper_September_27_2011_FINAL_508.pdf>. However, nearly the entire project site is within ¼ mile of existing residential, commercial or industrial buildings, and all of it is within

one mile of such buildings. We believe that the existing human activity within the project area makes it unsuitable for sage grouse habitat, and therefore the project will have no impact on Greater Sage Grouse.



Yellow-Billed Cuckoo (*Coccyzus americanus*). The species profile ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B06R contains a map purporting to show that this candidate species is known or believed to inhabit Challis and the project area. However, the 2011 *Species Assessment and Listing Priority Assignment Form* ecos.fws.gov/docs/candidate/assessments/2012/r8/B06R_V01.pdf states that the species was considered a rare and local summer resident in Idaho, with only four records of Yellow-Billed Cuckoo in northern and central Idaho over the last century. The only riparian areas within the proposed project planning area are Garden Creek within the city and an irrigation canal that adjoins the city on the southeast. Please clarify whether this is a species of concern for this project. If so, please advise regarding mitigation measures.



· **North American Wolverine** (*Gulo gulo luscus*). Because wolverine distribution is restricted to high elevation areas of deep, persistent winter snow, and the project site is in suburban developed land and adjacent arid treeless foothills with typical winter snow cover of 2 inches or less, we expect that there will be no impact from the project.

Thank you for your attention to this matter. If I can provide any additional information, please contact me by email or telephone.

Mike May
 Sr. Water Quality Analyst
 Idaho Department of Environmental Quality
 1410 North Hilton
 Boise, Idaho 83706
 (208) 373-0406
Michael.May@deq.idaho.gov



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
7600 Sand Point Way N.E.
Seattle, Washington 98115

June 23, 2014

Refer to NMFS No: WCR-2014-1027

Ms. Michelle Guay
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

Lt. Col. Andrew D. Kelly
U.S. Army Corps of Engineers
Walla Walla District
201 North Third Avenue
Walla Walla, Washington 98362-1836

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Garden Creek Rehabilitation Project, Garden Creek, - 170602011602, Custer County, Idaho

Dear Mrs. Guay and Lt. Col. Kelly:

On May 12, 2014, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the Bonneville Power Administration (BPA) Garden Creek Rehabilitation Project is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

A U.S. Army Corps of Engineers (COE) 404 Clean Water Act (CWA) permit may also be required to complete these actions. Therefore, the issuance of the COE permit, a separate Federal action, has also been considered in this concurrence letter.

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 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, consultation under the MSA is not required for this action.

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 concurrence letter will be available through NMFS' Public Consultation Tracking System [<https://pcts.nmfs.noaa.gov>]. A complete record of this consultation is on file at the Snake Basin Office, Boise, Idaho.

Proposed Action and Action Area

The BPA, in conjunction with the Pacific Coastal Salmon Recovery Fund, proposes to fund Garden Creek Rehabilitation Project. There are two diversions on Garden Creek which are fish passage barriers. The City of Challis Garden Creek municipal diversion structure (municipal diversion) is a steel slide gate structure with no fish passage facilities. There is a 4½ foot drop across the structure. This structure is a complete barrier for upstream fish migration at all flows. Approximately 100 feet upstream of the municipal diversion there is a private unscreened headgate and irrigation ditch that receives water from an instream push-up dam formed from stream substrate and sandbags. This diversion is also considered a fish migration barrier.

The objective of Garden Creek Rehabilitation project (Figure 1) is twofold: (1) Remove the existing municipal diversion and the private irrigation instream pushup and sandbag diversion structure to permit fish passage under all but no flow conditions; and (2) consolidate and upgrade the municipal and private irrigation points of diversion (POD) to a single POD and install a NOAA Fisheries compliant fish screen. These actions will provide fish access to an additional 1.2 miles of Garden Creek habitat.

The municipal and private irrigators have combined water rights of 10.03 cubic feet per second (cfs) for diversion. The City of Challis has a senior water right of about 3.2 cfs from Garden Creek. The city is developing a groundwater source for their primary water supply and will replace the existing dam and headgate with a structure that will permit fish passage and act as an emergency backup water supply for the city. Approximately 0.08 cfs of water will be required to maintain the function of existing slow sand filter drinking water ponds; the remaining approximately 3.12 cfs will remain in Garden Creek until or if needed in an emergency. The municipal water diversion and the unscreened private irrigation POD are fish migration barriers. Approximately 100 feet upstream of the municipal diversion there is a private unscreened headgate and irrigation ditch that receives water from an instream push-up dam formed from stream substrate and sandbags. This diversion is also a fish migration barrier.

The private irrigation and the municipal PODs will be consolidated into a single upstream private POD (referred to as the "consolidated POD"). The consolidated POD will be located approximately 275 feet upstream of the private sandbag diversion, and 375 feet upstream from the municipal POD. The existing private and municipal POD's will be closed. The streambed

will be contoured at the consolidated POD, and from the existing private POD to the municipal POD, to match existing stream features and elevations.

All proposed work will occur during the recommended instream work window of July 1 to August 15. No Federally listed fish have been documented at either of the existing diversion structures. Based on this scenario, the stream flow will be diverted into an 18 to 24-inch flexible pipe with cofferdam structures placed from the bank to maintain water flow, if present, through the work areas. Placing and removing a cofferdam to divert the water into the pipe will be the only inwater work associated with this project. All other construction work will be in the dry and will be completed in 3 weeks. Placing and removing a cofferdam to divert the water into the pipe will be the only in water work associated with this project. All other construction work will be in the dry and will be completed in 3 weeks.

The work will consist of two segments. The first segment will be to divert the stream flow through the work site with an 18 to 24-inch pipe. The sandbag irrigation diversion will be removed and the boards in the existing municipal check dam will be removed to allow the remaining water to slowly exit the work area. This will allow any fish in the work area to move downstream to safer habitat. Once this area is dry, the headgate and check dam will be removed.

The second segment will consist of contouring the streambed to grade with a stable constructed streambed surface comprised of native and, if needed, imported substrate. Streambank restoration will consist of laying back or filling the streambank slopes at a 1.5H:1V ratio before placing willow stakes and brush bundles on the streambank, and installing the headgate structure.

The Construction Plan lists an overall construction sequence to be implemented after the water is diverted into the bypass pipe. The sequence is summarized here:

1. Remove boulders and other materials from the streambed and sort to be reused.
2. Excavate the streambed to grade for engineered streambed materials and pools and install the stable constructed streambed surface comprised of native and, if needed, imported substrate.
3. Construct pools and place roughness boulders, beginning downstream and moving upstream.
4. Once the roughness boulders are in place and compacted by the excavator bucket, fines will be added and washed into interstitial spaces to seal the streambed and reduce percolation losses and stream bed movement. This step will be completed with recycled water salvaged from the pool areas as designed in the Construction Plan.
5. Lay back or fill slopes using excavated material at 1.5H:1V ratio.
6. Complete all work, including streambank revegetation, within each swing of the excavator before moving to the next section.
7. The excavator will move upstream and the construction steps will be repeated until the project is completed.
8. The final step will be to slowly turn water from the pipe into the upper end of the work area

and remove the cofferdam. This sequence will greatly reduce silt mobilization and downstream transport.

Riparian disturbance and bank disturbance will be kept to a minimum at the project site. Any large willows that need to be removed will be salvaged with intact root mass and replanted on site to speed site recovery. All disturbed streambanks will be replanted with willow stakes, brush bundles, and other native herbaceous plants. Disturbed pasture or cultivated grass lands will be planted with an approved pasture and grass seed mixture.

Silt that may be generated due to work in the stream channel when placing and removing the cofferdams will be contained using straw wattles or with a bonded fiber matrix at the lower end of the channel. When Garden Creek is turned back into the main channel, silt is expected to settle out within 160 yards downstream due to stream gradient and low flow volume.

The following measures will be implemented to minimize sediment introductions to waters within the action area:

1. Silt fence or equivalent measures such as bonded fiber matrix will be deployed where overland sediment delivery may occur during typical rain events for the area.
2. Proposed instream work will occur in the dry.
3. The dewatered work area will be pre-wet prior to cofferdam removal; cofferdam installation and removal will occur slowly to minimize turbidity input and ensure fish are not stranded during the process.

All possible steps will be taken to minimize the possibility of machine lubricants entering the streambed (i.e., equipment will be leak free prior to arrival on site and inspected daily). Contractors will be required to have a spill containment kit onsite of appropriate size for the equipment used in the excavation. Construction equipment and materials staging, including refueling areas, will occur well away from the stream course (>150 feet).

All fish that may be electroshocked will be non-anadromous fish because they do not currently occur in and are blocked from entering into the project area. Fish will first be encouraged to passively leave the dewatered area by slowly installing the cofferdam to incrementally diminish flows in the mainstream and divert the water through the work area via an 18 to 24-inch bypass pipe. Any fish stranded in pools will be electrofished and netted and transported in aerated buckets to a point below the work area and released back into live water. All settings and methodologies will be within the guidelines for electrofishing waters containing salmonids listed under the ESA.

The action area includes the project area, upstream of the existing Municipal Water Diversion 100 yards, and downstream of the same structure 160 yards.

Action Agency's Effects Determination

The BPA and COE determined the proposed action would be NLAA Snake River spring/summer Chinook salmon, Snake River Basin steelhead, and their designated critical habitats. See Table 1 for species specific Federal Register notices and ESA-listing status.

Table 1. Federal Register notices for final rules that list threatened and endangered species, designated critical habitat, or apply protective regulations to listed species considered in this consultation (Listing status: 'T' means listed as threatened under the ESA; 'E' means listed as endangered).

Species	Listing Status	Critical Habitat	Protective Regulations
Chinook salmon (<i>Oncorhynchus tshawytscha</i>)			
Snake River spring/summer run	T 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543 10/25/99; 64 FR 57399	6/28/05; 70 FR 37160
Steelhead (<i>O. mykiss</i>)			
Snake River Basin	T 1/05/06; 71 FR 834	9/02/05; 70 FR 52630	6/28/05; 70 FR 37160

Consultation History

The BPA provided NMFS with a Biological Assessment on May 12, 2014, and consultation was initiated at that time.

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is NLAA listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Species Determination

The potential effects of this restoration project to juvenile Snake River Basin steelhead and juvenile Snake River spring/summer Chinook salmon are anticipated to be of short duration, low magnitude, and short downstream extent. Due to the passage barriers, fish will not be present in the project area. It is possible that the stream will be dry when work takes place. If not, the diversion of water through the project area will be accomplished in a slow fashion so as to allow any fish that are present downstream of the lower passage barrier to move to safety. The flow bypass pipe will be placed immediately downstream of the lower passage barrier so the flow

depletion will be limited to a very small area. The risk of adverse effects to listed salmonids from the dewatering portion of the project is therefore discountable.

The second phase of the project will consist of contouring the streambed to a natural form and reshaping the streambanks. This will involve disturbing the existing substrate with the resulting likelihood of resuspending some of the streambed's fine sediment when the channel is re-watered. Some sediment from the streambank work may be introduced into the stream channel. Straw waddles or a bonded fiber matrix will be used at the lower end of the channel to help contain suspended sediment. Additionally, the newly constructed channel will be pre-wetted to help settle sediment before the channel is re-watered. Re-watering will be conducted slowly so as to further minimize the suspension of sediment. Any turbidity produced will be low intensity, a one-time occurrence, and will be of short duration. For these reasons, the turbidity produced by the project will likely only cause insignificant effects.

Suspended sediment produced by the proposed action has the potential to settle into the substrate downstream and potentially reduce substrate suitability for spawning and forage production. However, the small amount of sediment which will be suspended is insignificant and, for this reason, any sediment which would settle out and become embedded will also be insignificant.

Riparian vegetation in the project area will also be altered by the proposed action. Alterations of riparian vegetation may increase stream temperatures. However, any large willow that are removed during project implementation will be salvaged with their rootballs intact to use in revegetation work. All disturbed streambanks will be revegetated with willow stakes, brush bundles, and other native herbaceous plants. The project will seek to minimize bank and riparian vegetation disturbance. For these reasons, effects to riparian vegetation will be insignificant.

Use of heavy machinery adjacent to action area streams presents opportunities to produce a fuel/oil spill capable of chemically contaminating Garden Creek. As referenced above, no ESA-listed fish are present in the project area. All work with heavy machinery will be conducted in the dry and no in-channel work in moving water is proposed. Contractors will be required to have a spill containment kit on site of appropriate size for the equipment used in the excavation. Construction equipment and materials staging, including refueling areas, will occur well away from the stream course (>150 feet). For these reasons, the likelihood of chemical contamination is discountable.

Critical Habitat Determination

The proposed action has the potential to affect the following essential physical and biological features (Chinook salmon) or primary constituent elements (PCEs) (steelhead) of designated critical habitat (hereinafter collectively referred to as PCEs): (1) Water quality (i.e., temperature, turbidity, and chemical contamination); (2) substrate/spawning gravel; and (3) forage (Table 2). Any modification of these PCEs may affect freshwater spawning, rearing or migration in the action area. Proper function of these PCEs is necessary to support successful adult and juvenile migration, adult holding, spawning, and the growth and development of juvenile fish. No other PCEs would be affected.

Table 2. Types of sites and essential physical and biological features designated as PCEs, and the species life stage each PCE supports.

Site	Essential Physical and Biological Features/PCEs	ESA-listed Species Life Stage
Snake River Basin Steelhead^a		
Freshwater spawning	Water quality, water quantity, and substrate	Spawning, incubation, and larval development
Freshwater rearing	Water quantity & floodplain connectivity to form and maintain physical habitat conditions	Juvenile growth and mobility
	Water quality and forage ^b	Juvenile development
	Natural cover ^c	Juvenile mobility and survival
Freshwater migration	Free of artificial obstructions, water quality and quantity, and natural cover ^c	Juvenile and adult mobility and survival
Snake River Fall and Spring/summer Chinook Salmon		
Spawning and Juvenile Rearing	Spawning gravel, water quality and quantity, cover/shelter, food, riparian vegetation, and space	Juvenile and adult
Migration	Substrate, water quality and quantity, water temperature, water velocity, cover/shelter, food ^d , riparian vegetation, space, safe passage	Juvenile and adult

a. Additional PCEs pertaining to estuarine, nearshore, and offshore marine areas have also been described for Snake River Basin steelhead.

These PCEs will not be affected by the proposed action and have therefore not been described in this letter of concurrence.

b. Forage includes aquatic invertebrate and fish species that support growth and maturation.

c. Natural cover includes shade, large wood, log jams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

d. Food applies to juvenile migration only.

The action's potential to affect the water quality PCE (i.e., water temperature, turbidity, and chemical contamination) were described in the effects to species section. Although minor shade reductions may occur in the project area, the affected area is too small to result in measurable water temperature increases. Water temperatures may be cooled over time as the current streamside is revegetated and begins shading Garden Creek. As described above, the proposed Best Management Practices are expected to render the likelihood of chemical contamination discountable. Therefore, the action's effects on this PCE will be insignificant (water temperature) and discountable (chemical contamination).

The action's effects on substrate/spawning gravel and forage will be insignificant for the reasons referenced above. Because the amount of sediment that will be suspended by the action will be insignificant, the amount deposited and embedded will also be insignificant. Similarly, because the amount of sediment expected to be deposited is insignificant, it is very unlikely to affect macroinvertebrates and the forage PCE.

Conclusion

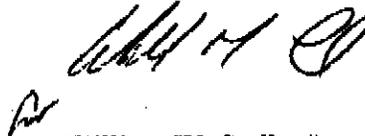
Based on this analysis, NMFS concurs with the BPA and the COE that the proposed action is NLAA the subject listed species and designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the BPA and/or the COE where discretionary Federal involvement or control over the action has been retained or is authorized by law, and if: (1) New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) 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 this concurrence letter; or, (3) if a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes this ESA consultation.

Please direct questions regarding this letter to Nikki Leonard, Boise Idaho Office,
208-378-5708.

Sincerely,



William W. Stelle, Jr.
Regional Administrator

cc: R. Holder
C. Colter



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Eastern Idaho Field Office
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Chubbuck, Idaho 83202
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Michelle Guay
Environmental Protection Specialist-KEC-4
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

JUN 20 2014

Subject: Garden Creek Rehabilitation Project — Custer County, Idaho—Concurrence
In Reply Refer To: 01EIFW00-2014-I-0511

Dear Ms. Guay:

This letter transmits the U.S. Fish and Wildlife Service's (Service) concurrence on the effects to species listed under the Endangered Species Act (Act) of 1973, as amended, for the proposed Garden Creek Rehabilitation Project – BPA Project #2007-268-00, contract 63589, work element H (Project) near Challis, Idaho. In a letter dated May 19, 2014, and received May 22, 2014, the Bonneville Power Administration (BPA) requested concurrence on the determination, as documented in the Biological Assessment (Assessment), that the Project may affect, but is not likely to adversely affect the Columbia River bull trout (*Salvelinus confluentus*).

The proposed Project entails the following components.

- Close and remove two points-of-diversion (POD) which are barriers to upstream fish migration in Garden Creek. One is a private irrigation diversion and the other is a municipal water diversion.
- Consolidate the two PODs into one diversion which is passable by fish.
- Screen the new diversion compliant with National Oceanic and Atmospheric Administration - Fisheries criteria to prevent fish entrainment.
- Construct the new POD approximately 275 feet upstream of the private diversion and 375 feet upstream from the municipal diversion.
- Place rocks around the headgate to pool water at the opening of the structure of the new POD.
- Dewater the project area. If flow is present during construction, the project area would be dewatered slowly by placing cofferdams to direct stream flow into an 18-24 inch flexible pipe, bypassing the project area, and emptying back into Garden Creek below the area of activity.
- Contour the streambed at the new POD and between the private POD and the municipal POD (approximately 198 feet) to match existing stream features and slope upstream and downstream of those areas.
- Restore a more natural configuration of the streambank on both sides of Garden Creek along approximately 198 feet by laying back and filling material to reach a 1.5 foot horizontal to 1 foot vertical ratio.

- Further restore streambanks and disturbed riparian habitat using willow stakes, brush bundles, and other native herbaceous plants.

A more detailed description of the proposed action is contained in the Biological Assessment (Donahoo 2014, pp. 4-10).

Service concurrence that the Project is not likely to adversely affect the Columbia River bull trout is based on the following rationales.

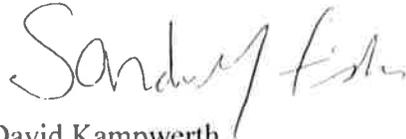
- There is a low likelihood of bull trout being present during project implementation. Bull trout are known to be present in the upper reaches of Garden Creek on US Forest Service managed lands and one bull trout was found in 2002 in Hannah Slough, a tributary to the lower end of Garden Creek near the Salmon River. It is highly likely the bull trout population in Garden Creek contained a migratory component (using the Salmon River for foraging, migrating, and overwintering habitat and the upper reaches of Garden Creek for spawning) prior to establishment of barriers to upstream fish migration. Currently, bull trout cannot migrate past the project area due to physical barriers and/or low or no water. Due of the lack of recent (within the last 70-plus years) connectivity, apparent lack of suitable spawning habitat due to temperature and flow, lack of flow, and timing of implementation when water temperature should be the highest of the year, the potential for bull trout to be present in the action area during construction is negligible.
- Instream work would be completed between July 1 and August 15 which is outside of the bull trout spawning period for tributaries of the main Salmon River between the Pahsimeroi River and Valley Creek (USBWP 2005, p. 18).
- All work would be conducted in the dry except for placement of the cofferdams.
- The project area generally has little or no flow during the construction period in a normal year due to irrigation use.
- Turbidity is expected to be negligible due to low or no flow at the time of cofferdam placement and no flow in the project area during other instream work. Best management practices, including slow and careful dewatering of the project area prior to instream activity and slowly allowing flows (if any) to re-water the stream post-construction should minimize turbidity.
- The new diversion would provide access to an additional 1.2 miles of habitat in Garden Creek for upstream migrating fish of all life stages.

If successful, the long-term effects of this project are considered beneficial to bull trout. Conditions for bull trout foraging, migrating and overwintering in lower Garden Creek would be improved and the amount of habitat increased. This project furthers the progress already made to eventually result in the bull trout population in upper Garden Creek becoming connected to the Salmon River.

We appreciate the cooperative conservation efforts of all parties involved to improve aquatic ecosystems in the Challis area. This project is the third in a series which will have provided fish access to 6.45 miles of previously inaccessible habitat in Garden Creek from the Salmon River.

This concludes informal consultation on the proposed Garden Creek Rehabilitation Project under section 7 of the Act. If the proposal addressed in this letter is modified, environmental conditions change, or additional information becomes available regarding potential effects on listed species, you should verify with the Service that your conclusions are still valid. Thank you for your continued interest in the conservation of threatened and endangered species. Please contact Nisa Marks (208) 237-6975, ext. 121, if you have questions concerning this letter.

Sincerely,



for David Kampwerth
Supervisor, Eastern Idaho Field Office

cc: Custer Soil and Water Conservation District, Challis (K. Bragg)
NOAA, Salmon (C. Fealko)
USACE, Idaho Falls (J. Joyner)

References Cited

- Donahoo, M. 2014. Biological Assessment: Garden Creek Rehabilitation Project. Prepared for Custer Soil and Water Conservation District, Challis, Idaho. 35 pp.
- Upper Salmon Basin Watershed Project (USBWP). 2005. Upper Salmon River Recommended Instream Work Windows and Fish Periodicity for river reaches and tributaries above the Middle Fork Salmon River including the Middle Fork Salmon River drainage. Prepared by the Upper Salmon Basin Watershed Project Technical Team, June 2004, revised November 30, 2005. 29 pp.



Department of Energy

Official File

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

ENVIRONMENT, FISH AND WILDLIFE

May 19, 2014

In reply refer to: KEC-4

David Mabe
Snake Basin Office Director
National Marine Fisheries Service
10095 W Emerald St.
Boise, ID 83701

RE: Biological Assessment, Garden Creek Rehabilitation project
BPA project # 2007-268-00, contract 63589, work element H

Dear Mr. Mabe:

In complying with its responsibilities under the Endangered Species Act of 1973, as amended, Bonneville Power Administration (BPA) is submitting the enclosed biological assessment for the Garden Creek Rehabilitation Project. This project is sponsored by the Custer Soil and Water Conservation District and funded by BPA. The Biological Assessment was prepared by Michael J. Donahoo, a contractor for the Custer Soil and Water Conservation District.

It is BPA's opinion that the proposed actions covered in this BA may affect, but are **not likely to adversely affect** Snake River spring/summer Chinook salmon, Snake River Basin steelhead, or their critical habitat.

We are requesting your review of the BA and concurrence with the effect determination. If you have any questions or require additional information, please contact me at 503.230.3459 or mxguay@bpa.gov. Alternatively, you may contact the project sponsor, Karma Bragg of the Custer Soil and Water Conservation District, at 208.879.4428 or cswcd@custertel.net.

Sincerely,

A handwritten signature in blue ink that reads "Michelle Guay".

Michelle Guay
Environmental Protection Specialist

Enclosure:
Biological Assessment

ecc: (w/enclosure)
Chad Fealko, NMFS, Chad.Fealko@noaa.gov
Karma Bragg, Custer Soil and Water Conservation District, cswcd@custertel.net



Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

ENVIRONMENT, FISH AND WILDLIFE

May 19, 2014

In reply refer to: KEC-4

David Kampwerth
US Fish and Wildlife Service
Eastern Idaho Field Office
4425 Burley Dr., Suite A
Chubbuck, ID 83202

RE: Biological Assessment, Garden Creek Rehabilitation project
BPA project # 2007-268-00, contract 63589, work element H

Dear Mr. Kampwerth:

In complying with its responsibilities under the Endangered Species Act of 1973, as amended, Bonneville Power Administration (BPA) is submitting the enclosed biological assessment for the Garden Creek Rehabilitation Project. This project is sponsored by the Custer Soil and Water Conservation District and funded by BPA. The Biological Assessment was prepared by Michael J. Donahoo, a contractor for the Custer Soil and Water Conservation District.

It is BPA's opinion that the proposed actions covered in this BA may affect, but are **not likely to adversely affect** federally listed bull trout.

We are requesting your review of the BA and concurrence with the effect determination. If you have any questions or require additional information, please contact me at 503.230.3459 or mxguay@bpa.gov. Alternatively, you may contact the project sponsor, Karma Bragg of the Custer Soil and Water Conservation District, at 208.879.4428 or cswcd@custertel.net.

Sincerely,

A handwritten signature in blue ink that reads "Michelle Guay".

Michelle Guay
Environmental Protection Specialist-KEC-4

Enclosure:
Biological Assessment

ecc: (w/enclosure)

Nisa Marks, USFWS, nisa_marks@fws.gov

Karma Bragg, Custer Soil and Water Conservation District, cswcd@custertel.net

**Biological Assessment
Garden Creek Rehabilitation
Project**

April 2014



**Prepared For the
Custer Soil and Water Conservation District
Challis, Idaho**

Prepared by: Michael J. Donahoo

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1.0 Introduction

The Bonneville Power Association (BPA) funds projects similar to the Garden Creek Rehabilitation Project throughout the Pacific Northwest to meet commitments for the NOAA Fisheries 2008 Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp) (NMFS 2008). The BPA projects implemented throughout the region have made important contributions to improve the status of Endangered Species Act-listed species, prevent extinctions, and protect currently healthy populations.

The Pacific Coastal Salmon Recovery Fund (PCSRF) was established by Congress in Fiscal Year 2000 to protect, restore, and conserve Pacific salmon and steelhead populations and their habitats. Under the PCSRF, NOAA Fisheries manages a program to provide funding to states and tribes of the Pacific Coast region - Washington, Oregon, California, Nevada, Idaho and Alaska – for these types of projects.

The Endangered Species Act (ESA) of 1973, as amended, directs all Federal agencies or any project that has a Federal nexus, to implement measures to protect all federally listed species and their listed habitat found in the project area and not jeopardize their continued existence. The ESA also requires agencies or projects with a Federal nexus to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) on actions that may affect federally listed species or their listed habitat. The U.S. Army Corps of Engineers is party to the consultation for the Garden Creek Rehabilitation Project by virtue of their responsibility to consider permitting actions under the Clean Water Act.

This project has been developed with the input of numerous county, state and federal agencies including: Custer Soil and Water Conservation District (CSWCD), Natural Resources Conservation Service (NRCS), Idaho Department of Fish and Game (IDFG), Idaho Department of Water Resources (IDWR), NMFS, USFWS and the U.S. Bureau of Reclamation. Funding is being provided from the BPA and PCSRF. The city of Challis is a major participant in the project planning process. This Biological Assessment (BA) was prepared by Michael J. Donahoo Consulting under contract to CSWCD which is also funded in part by the BPA.

2.0 Project Location and Action Area

The ‘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).

Garden Creek flows east out of the U.S. Forest Service (Forest Service) managed lands in the Salmon River Mountains on to private land, past the Garden Creek Rehabilitation project site, through the city of Challis, and under the Gini Canal project site. It is then joined by the highly productive spawning and rearing waters of the Hannah Slough before entering into the Salmon River (Figure 1). The total stream length is 14.9 miles from the headwaters to the confluence.

The project site is 4.9 miles upstream from the Garden Creek/Salmon River confluence in the 50,000 acre City of Challis Garden Creek Watershed, Custer County, Idaho (Figure 1) (USGS hydrologic unit code 170602011602). The Watershed has no perennial tributaries (IDEQ 2003).

The Action Area for the project is defined as 100 yards above the existing Municipal Water Diversion structure (Figure 2) to 160 yards downstream of the same structure.

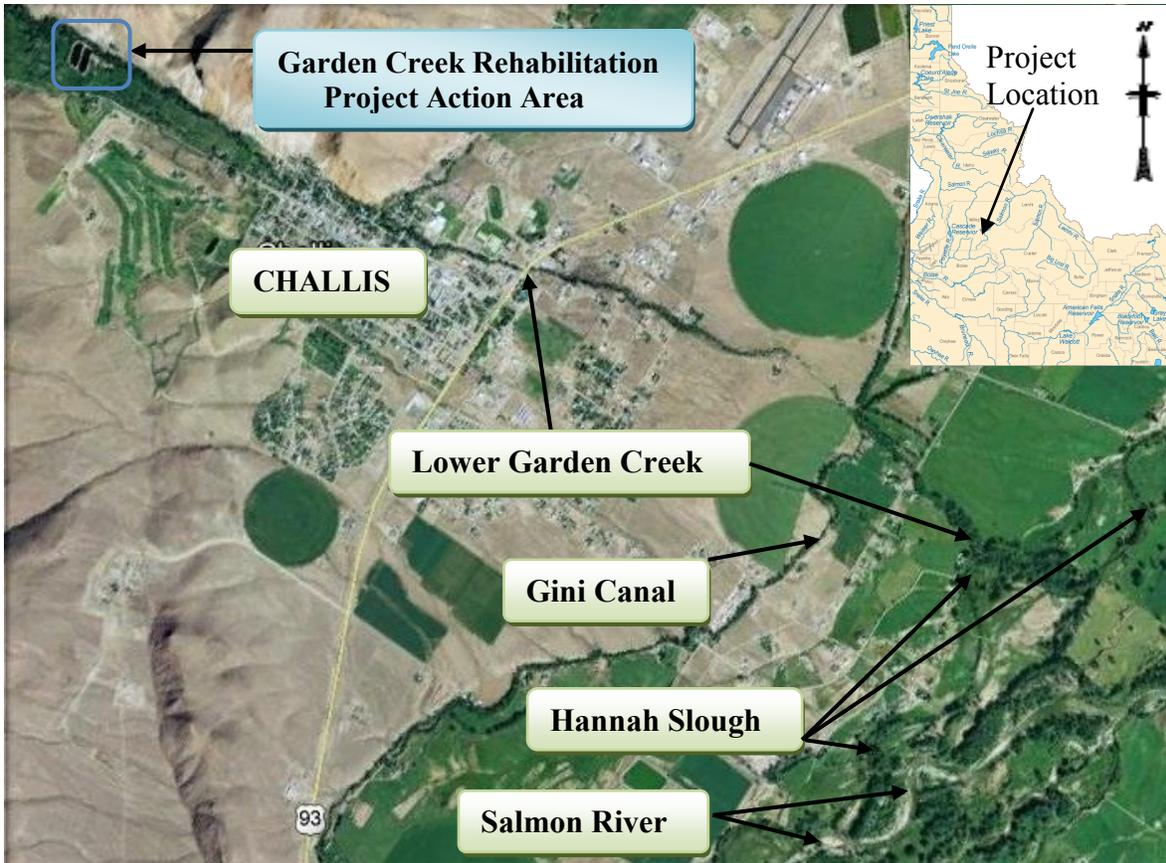


Figure 1. Project Location



Figure 2. Action Area and Project Site – Garden Creek Rehabilitation Project

3.0 Need for Action and Objective

Irrigation practices and some municipal water diversions, both past and to some degree present, have reduced or completely cut off federally listed salmonid populations from accessing many Salmon River tributaries, including Garden Creek. The fragmentation of salmonid migration between the Salmon River and its tributaries has been identified as a limiting factor affecting salmonid production in the Salmon River watershed (USDI, USFS 2001).

Approximately 4.5 miles, including the headwaters, of Garden Creek are on Forest Service managed lands. This section of Garden Creek has also been identified as containing suitable bull trout spawning and rearing habitat (Gamett 2011). The remaining approximately 10.4 miles of Garden Creek, from the Forest Service boundary to the confluence with the Salmon River, is on private land.

The Garden Creek Road crosses Garden Creek one mile upstream of the action area and project site. The County road culvert is a probable seasonal migration barrier for juvenile fish due to the position of the culvert in relation to the stream bed. The culvert is mentioned here for information purposes only and is not part of the BA discussion.

Garden Creek was reconnected with the Salmon River after completion of the Gini Canal project in 2004 (NW 2004). This provided access to an additional three miles of previously inaccessible habitat. When the Garden Creek 3rd Street Bridge project (City of Challis 2009) was completed, fish could access Garden Creek from the confluence of the Salmon River to the project site; a total distance of 5.25 miles.

The City of Challis Garden Creek municipal diversion structure (municipal diversion) is a steel slide gate structure with no fish passage facilities (Figure 3 and Appendix D). There is a 4 ½ foot drop across the structure. This structure is a complete barrier for upstream fish migration at all flows.

Approximately 100 feet upstream of the municipal diversion (Figure 3) there is a private unscreened headgate and irrigation ditch that receives water from an instream push-up dam formed from stream substrate and sandbags (Figure 4). This diversion is also considered a fish migration barrier.

The objective of Garden Creek Rehabilitation project (Figure 5) is twofold: 1) Remove the existing municipal diversion and the private irrigation instream pushup and sandbag diversion structure to permit fish passage under all but no flow conditions; and 2) Consolidate and upgrade the municipal and private irrigation points of diversion (POD) to a single POD and install a NOAA Fisheries compliant fish screen. These actions will provide fish access to an additional 1.2 miles of Garden Creek habitat.

This project is supported through the BPA State of Idaho MOA process as a high priority for inclusion. Both IDFG and NOAA Fisheries recovery plans have highlighted the importance of carrying out habitat actions to assist recovery of key anadromous populations through providing access to historic spawning and rearing habitat.



Figure 3. Existing Municipal Water Diversion Structure on Garden Creek



Figure 4. Existing Private Irrigation Headgate and Diversion on Garden Creek

4.0 Proposed Action

The municipal and private irrigators have a combined 10.03 cubic feet per second (cfs) diversion water rights. The City of Challis has a senior water right of about 3.2 cfs from Garden Creek. The city is developing a groundwater source for their primary water supply and will replace the existing dam and headgate with a structure that will permit fish passage and act as an emergency backup water supply for the city. Approximately 0.08 cfs of water will be required to maintain the function of existing slow sand filter drinking water ponds; the remaining approximately 3.12 cfs, will remain in Garden Creek until or if needed in an emergency. The municipal water diversion (Figure 3 and Appendix D) and the unscreened private irrigation POD are fish migration barriers (Figure 4 and Appendix D).

The private irrigation and the municipal PODs will be consolidated into a single upstream private POD (referred to as the “consolidated POD”). The consolidated POD is approximately 275 feet upstream of the private sandbag diversion and 375 feet upstream from the municipal POD. The existing private and municipal POD’s will be closed. The streambed will be contoured at the consolidated POD and from the existing private POD to the municipal POD to match existing stream features and elevations (Figures 5, 6 and Appendix A).



Figure 5. Project site and plan overview

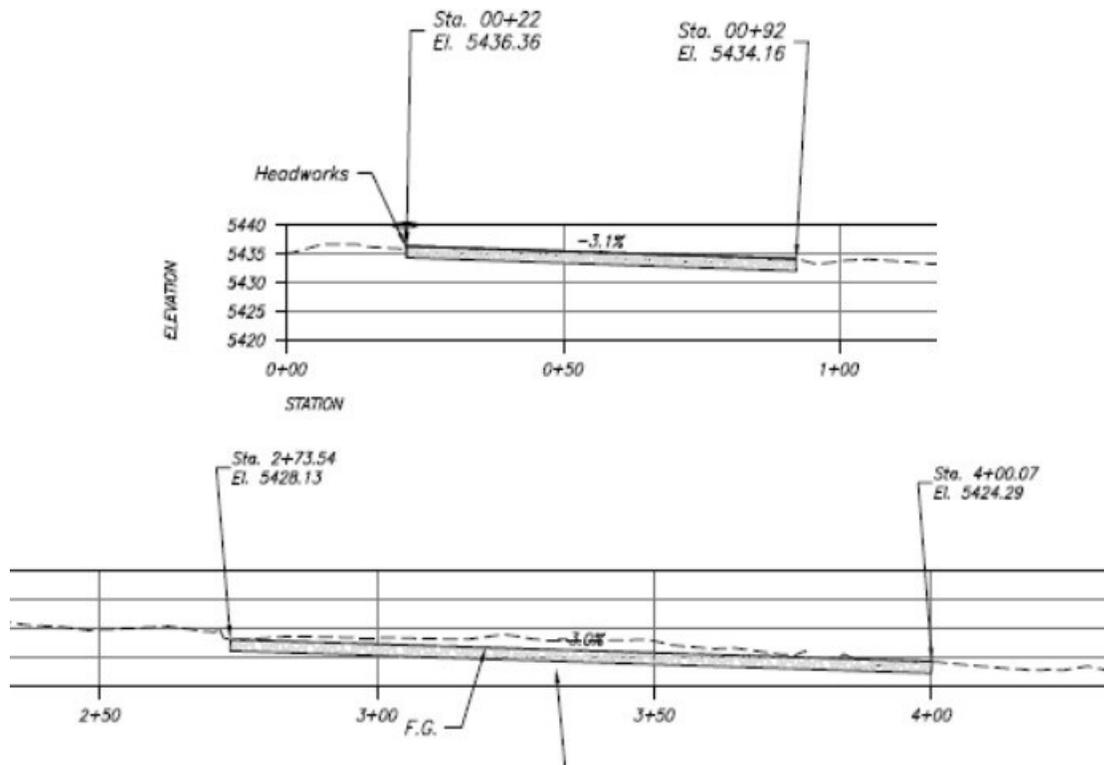


Figure 6. Elevations and streambed gradients for the headworks and the municipal diversion.

The diversion structures and fish screen will be constructed on private land as shown in Appendix A. The new headworks structure will be installed at the consolidated POD site and about 180 feet of 24 inch diameter schedule 80 PVC pipe will connect the consolidated POD to a 25 foot settling pond. IDFG will install a 24 inch NOAA compliant fish screen downstream of the settling pond and the fish screen will connect to a splitter box via a newly excavated ditch.

The fish screen bypass will discharge back into the creek just downstream of a placed boulder.

The ripening line POD for the municipal ponds will be placed just downstream of the fish screen discharge to take advantage of a constructed pool and boulder protection (Figure 7).

Channel work will include removing the existing sandbag dam and the municipal check dam and fish barrier structure. A combined total of about 198 feet of the streambed will be recontoured with native and, if needed, imported substrate. The result will be a stable constructed streambed that matches the up and downstream gradients (Figure 6). The instream diversion will consist of rocks placed to pool water at the opening of the headgate structure. Willow cuttings and brush bundles will be incorporated into the stream banks as outlined in Appendix A.

All work will be done in the dry. Each of the proposed construction actions are shown in Appendix A.

4.1 Proposed Conservation Measures

The following conservation actions apply to the described project site and are designed to minimize disturbance to ESA-listed species and designated critical habitat within the action area.

Construction Timing and Techniques

All proposed work would occur during the instream work window of July 1 to August 15 as recommended in the *Upper Salmon River Recommended Instream Work Windows and Fish Periodicity* charts on page 21, as revised November 5, 2005 (USBWP 2004). There is currently no fish passage in this section of the Garden Creek because of the two diversion structures and low to no water flow due to irrigation use during the proposed work window time. No federally listed fish have been documented at either of the existing diversion structures. Based on this scenario, the stream flow will be diverted into an 18 to 24 inch flexible pipe with cofferdam structures placed from the bank to maintain water flow, if present, through the work areas.

Placing and removing a cofferdam to divert the water into the pipe will be the only in water work associated with this project. All other construction work will be in the dry and will be completed in 3 weeks (See Figure 6 in Appendix A).

The work will consist of two segments. The first segment will be to divert the stream flow through the work site with an 18 to 24 inch pipe. The sandbag irrigation diversion will be removed and the boards in the existing municipal check dam will be removed to allow the remaining water to slowly exit the work area. This will allow any fish in the work area to move downstream to safer habitat. Once this area is dry, the headgate and check dam will be removed.

The second segment will consist of contouring the streambed to grade with a stable constructed streambed surface comprised of native and, if needed, imported substrate (Figures 7 and 8). Stream bank restoration will consist of laying back or filling the stream bank slopes at a 1.5H:1V ratio before placing willow stakes and brush bundles on the stream bank, and installing the headgate structure.

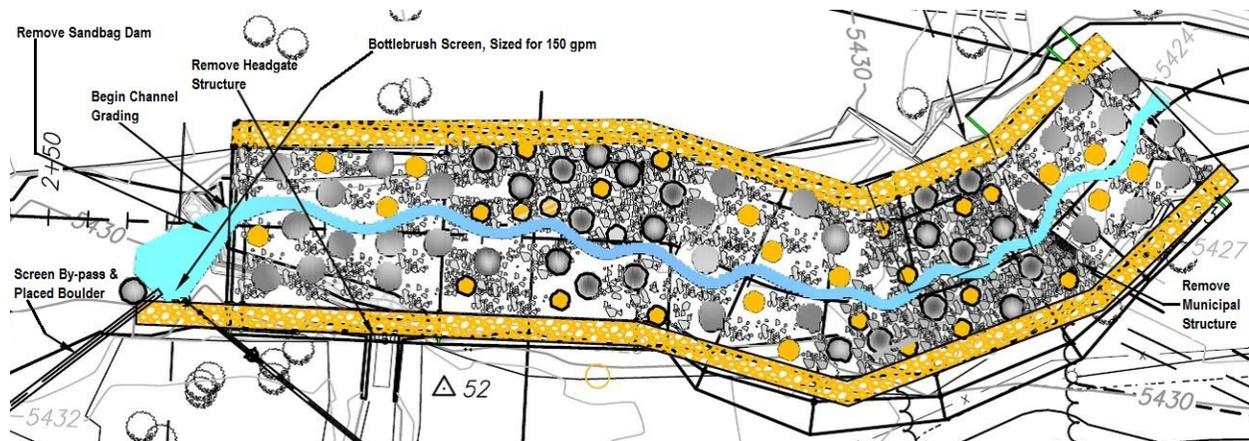


Figure 7. Garden Creek rehabilitation site for existing headgate and municipal structure.

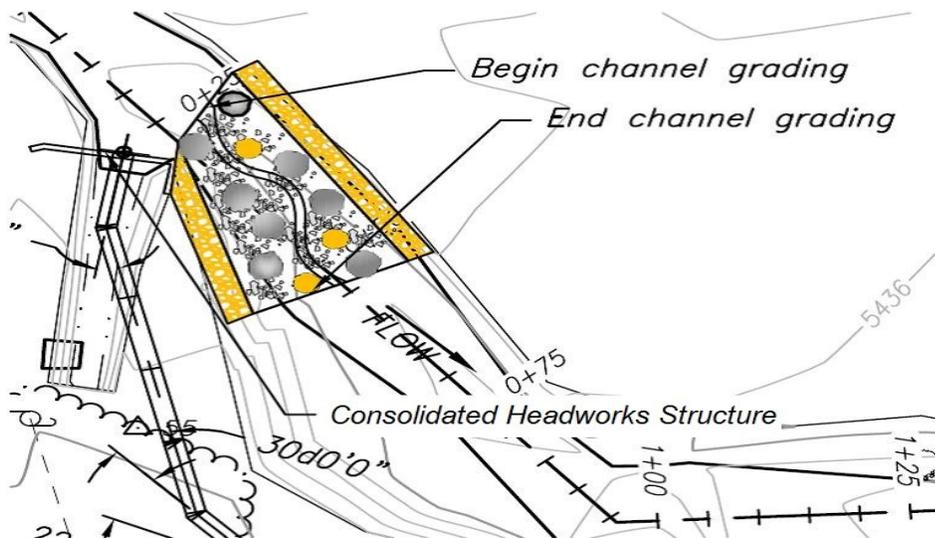


Figure 8. Consolidated headworks, pipeline and channel rehabilitation site and plan.

The Construction Plan (Figure 6 of Appendix A) lists an overall construction sequence to be implemented after the water is diverted into the by-pass pipe. The sequence is summarized here.

1. Remove boulders and other materials from the streambed and sort to be reused.
2. Excavate the streambed to grade for engineered streambed materials and pools and install the stable constructed streambed surface comprised of native and, if needed, imported substrate.
3. Construct pools and place roughness boulders, beginning downstream and moving upstream.
4. Once the roughness boulders are in place and compacted by the excavator bucket, fines will be added and washed into interstitial spaces to seal the streambed and reduce percolation losses and stream bed movement. This step will be completed with recycled water salvaged from the pool areas as designed in the Construction Plan.
5. Lay back or fill slopes using excavated material at 1.5H:1V ratio.
6. Complete all work, including stream bank revegetation, within each swing of the excavator before moving to the next section.
7. The excavator will move upstream and the construction steps will be repeated until the project is completed.
8. The final step will be to slowly turn water from the pipe into the upper end of the work area and remove the cofferdam. This sequence will greatly reduce silt mobilization and downstream transport.

Revegetation

Riparian disturbance and bank disturbance will be kept to a minimum at the project site. Any large willows that need to be removed will be salvaged with intact root mass and replanted on site to speed site recovery as listed in Figure 5 of Appendix A. All disturbed stream banks will be replanted with willow stakes, brush bundles and other native herbaceous plants. Disturbed pasture or cultivated grass lands will be planted with an approved pasture and grass seed mixture. The project will help decrease stream water temperatures, and improve riparian habitat quality and stream bank stability.

Sediment Control

Silt that may be generated due to work in the stream channel when placing and removing the cofferdams will be contained using straw wattles or with a bonded fiber matrix at the lower end of the channel. When Garden Creek is turned back into the main channel, silt is expected to settle out within 160 yards downstream due to stream gradient and low flow volume.

The following measures will be implemented to minimize sediment introductions to waters within the action area:

1. Silt fence or equivalent measures such as bonded fiber matrix will be deployed where overland sediment delivery may occur during typical rain events for the area.
2. Proposed instream work will occur in the dry.
3. The dewatered work area will be pre-wet prior to cofferdam removal; cofferdam installation and removal will occur slowly, to minimize turbidity input and ensure fish are not stranded during the process.

The *Catalog of Stormwater Best Management Practices* (BMP), Idaho Department of Environmental Quality, for Idaho Cities and Counties will be cited for construction direction. Construction spill prevention and control will be in accordance with BMP 8: Spill prevention and control. All possible steps will be taken to minimize the possibility of machine lubricants entering the streambed (i.e., equipment will be leak free prior to arrival on site and inspected daily). Contractors will be required to have a spill containment kit on site of appropriate size for the equipment used in the excavation. Construction equipment and materials staging, including refueling areas, will occur well away from the stream course (>150 feet).

Electrofishing/Fish Salvage

Fish will be encouraged to passively leave the dewatered area by slowly installing the cofferdam to incrementally diminish flows in the mainstream and divert the water through the work area via an 18 to 24 inch by-pass pipe. Any fish stranded in pools will be electrofished and netted and transported in aerated buckets to a point below the work area and released back into live water. Electrofishing will be conducted with a Smith-Root backpack LR-24 battery powered electrofisher. All settings and methodologies will be within the guidelines for electrofishing waters containing salmonids listed under the Endangered Species Act (NMFS 2000).

5.0 Listed Species and Critical Habitat

The Endangered Species Act (ESA) of 1973 directs that any project with a Federal nexus implement measures to protect all federally listed species found in the project area. NOAA Fisheries and USFWS identify five aquatic and four terrestrial species that occur and/or contain critical habitat within Custer County, Idaho. These threatened or endangered species under the ESA of 1973, as amended, were listed on the USFWS Species List Update for Custer County, Idaho (Appendix B) and the NOAA Fisheries anadromous species for the Snake River (Appendix B).

Suitable habitat for the proposed yellow-billed cuckoo and wolverine and the candidate greater sage-grouse does not occur in the proposed project area. Proposed species are those for which listing rules have been published in the Federal Register, but formal listing still awaits administrative action. Candidate species have no statutory protection under ESA and are mentioned here and listed in Appendix B for information purposes only and to indicate the

project will not cause the species or habitat to trend toward listing under ESA regulations.

The action area consists of agricultural land and dry scrublands. Suitable habitat for Canada lynx consists of mature forest. Therefore, there is no suitable habitat for lynx in the action area. The grey wolf is known to travel through the mountains and foothills around the action area and could use the area occasionally as a travel corridor. Wolf denning sites are normally found in generally secluded areas with a degree of isolation for protection. The action area is surrounded by agricultural and grazing land that is not suitable denning habitat. No dens have been identified in proximity to the action area (IDFG and Nez Perce Tribe 2012). There are no known gray wolves in the project area.

The current species lists issued by the USFWS (last updated May 7, 2014) and by NOAA Fisheries (last updated May 7, 2014) identifies four ESA listed fish species as occurring on or adjacent to the Project Site. These are:

- Snake River Sockeye Salmon (Endangered) (FR 56 58619)
- Snake River Spring/Summer Chinook Salmon (Threatened) (FR 57 14653)
- Snake River Steelhead (Threatened) (FR 62 43937)
- Bull Trout (Threatened) (FR 63 31647)

The scope of this BA, including species descriptions and analysis of effects, will be limited to the four federally listed fish species listed above and designated critical habitat in the Garden Creek corridor which includes the action area and project site.

The species description, status, distribution and discussion of critical habitat in the Garden Creek watershed in this BA are compiled from several existing biological assessments, primarily the *Biological Assessment for the Garden Creek 3rd St Bridge Project* (City of Challis 2009), *Biological Assessment for the Gini Canal – Garden Creek Structure Replacement* (NW 2004) and the *Aquatic Species Biological Assessment for Livestock Grazing on the Garden Creek Allotment* (Gamett 2011).

6.0 Biological Information

Snake River Sockeye Salmon

Status and Distribution within the Action Area and Project Site

The Snake River sockeye salmon was listed as endangered on November 20, 1991 (56 FR 58619) and critical habitat was designated December 28, 1993 (58 FR 68543) effective January 27, 1994.

The mainstem Salmon River is a migratory corridor for Snake River sockeye salmon that spawn in lakes near Stanley, Idaho. Sockeye do not enter the Garden Creek watershed during any part of their life cycle. The action area and project site is about 4.9 miles upstream from the Garden Creek confluence with the Salmon River. Due to the distance from the action area and the project site to the confluence with the Salmon River, and based on the fact that fish surveys in Garden Creek and Hannah Slough have not found any sockeye salmon, it is determined that the proposed project will have “**No Effect**” on sockeye salmon or designated critical habitat and the species will not be considered further.

Snake River Spring/Summer Chinook Salmon

Status and Distribution within the Action Area and Project Site

The Snake River spring/summer and fall Chinook salmon were federally listed as threatened April 22, 1992 (57 FR 14653). Critical habitat for the species was designated on December 28, 1993 (58 FR 68543) and covered the entire Snake River and its tributaries, including the Salmon River and its major tributaries which includes Garden Creek.

Fish surveys above and below the project site have not found any individuals or populations of Chinook salmon in the project reach of Garden Creek (Bartel, et.al. 2009; Gamett, 2011; IDFG, unpublished data reviewed in 2012).

No Chinook salmon have been found in the upper reaches of the Garden Creek watershed on Forest Service managed lands (Bartel, et. al. 2009; Gamett 2011). One Chinook salmon was found during the 2010 survey of Garden Creek near Challis High School, about 1.4 miles downstream of the project site. Several Chinook salmon have been observed in Hannah Slough, approximately 3.5 miles downstream of the project site, during annual surveys from 2000 through 2011 (IDFG, unpublished data reviewed in 2012).

Snake River Steelhead

Status and Distribution within the Action Area and Project Site

The Snake River Basin steelhead was listed as threatened under the Endangered Species Act on August 18, 1997 (62 FR43937) and reaffirmed on January 5, 2006 (71 FR 834). Critical habitat for the species was designated on September 2, 2005 (70 FR 52630) and includes Garden Creek.

Rainbow trout have been found in Buster Lake, a high mountain lake located in the head of Garden Creek, as well as the inlet to Buster Lake (Brimmer et al. 2006; Bartel et al. 2009). The U.S. Forest Service fish biologist believes these fish are from the rainbow trout that were stocked in the lake in 2001 and they do not consider them to be steelhead (Gamett 2011).

A fish survey conducted by IDFG personnel in 2008 near Challis High School documented numerous rainbow trout, but no steelhead. The survey did capture two westslope cutthroat trout. In 2009 cutthroat trout were also observed in Hannah Slough.

Surveys have documented steelhead in Hannah Slough, approximately 3.5 miles downstream from the project site, during annual surveys from 2000 through 2011 (IDFG, unpublished data reviewed in 2012).

Bull Trout

Status and Distribution within the Action Area and Project Site

All bull trout populations in the Salmon River Subbasin were listed as Threatened under the ESA in 1998 and are defined as one recovery unit of the Columbia River distinct population segment. General life history and status information can be found in the Final Rule of the Federal Register (FR 63 31647) and in the State of Idaho Bull Trout Conservation Plan (Batt1996). Bull trout display wide, yet patchy distribution throughout their range. Within the entire Columbia Basin, the Central Idaho Mountains (more than half of which falls within the Salmon Subbasin) support the most secure populations of bull trout.

Bull trout are found in the Salmon River and Garden Creek is a tributary to the Salmon River. A single bull trout was found in 2002 in Hannah Slough, a tributary to the lower end of Garden Creek and a major salmonid spawning and rearing area adjacent to the Salmon River (IDFG, unpublished data reviewed in 2012). Bull trout are also found in the upper reaches of Garden Creek on Forest Service managed lands (Bartel et al. 2009; Gamett 2011). Bull trout have not been found in the section of Garden Creek between the Forest Service managed land and Hannah Slough, including the action area and project site. This is likely due to dewatering of the stream channel at certain times of the year and migration barriers such as at the project site (City of Challis 2009).

Critical Habitat

On October 18, 2010, the final rule on designation of critical habitat for bull trout was published in the Federal Register (75 FR 63898). Garden Creek in the Garden Creek Watershed was not included in the critical habitat designation; therefore, no critical habitat for the federally listed bull trout is considered in this BA.

7.0 Endangered Species Recovery Goals

The USFWS recommend several actions to aid in the recovery of bull trout. Though the needs of bull trout and salmon are somewhat different, they share much of the same habitat. Bull Trout Interim Conservation Guidance, a December 9, 1998 USFWS publication outlined recommended actions for bull trout including improving and restoring habitat, providing connectivity between tributaries, and reducing stream water temperatures. This project will adhere to and compliment these biological objectives.

NOAA Fisheries issued final biological opinions in May of 2008 for the Federal Columbia River Power System (FCRPS) and the Upper Snake projects. NOAA Fisheries finds that, with the actions in the FCRPS Reasonable and Prudent Alternative, salmon and steelhead are on a trend to recovery. The Alternative includes offsite mitigation in the form of habitat implementation projects that improve or restore freshwater habitat for anadromous fish. This project is a direct approach to implement actions that improve habitat and support recovery of the Chinook salmon and steelhead in the Salmon River Watershed.

The Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin (SHIPUSS) is intended to address fish conservation needs on or adjacent to irrigated agricultural and livestock ranching lands. SHIPUSS is a prioritized list of streams within watersheds to guide fish screening and habitat improvement efforts on privately owned lands throughout the Upper Salmon River Basin (USRB). SHIPUSS was developed by the Upper Salmon Basin Watershed Project (USBWP) Technical Team (Tech Team), which is comprised of numerous professional technical experts and fisheries biologists from regional, state, Federal, and tribal agencies, and other biologists familiar with fisheries populations in the USRB. SHIPUSS was developed to assist the Tech Team and USBWP Advisory Board in prioritizing the funding of conservation efforts across the USRB, and is intended to be used by these groups in conjunction with existing project-level prioritization methods. This project is compatible with the intent of SHIPUSS.

8.0 Environmental Baseline Conditions

Regulations implementing the ESA (50 CFR 402.02) define the environmental baseline “*as the past and present impacts of all Federal, State or private actions and other human activities in the project area*”.

In the Garden Creek watershed, the past and present activities that may affect federally listed species considered in this assessment include those activities associated with irrigated agriculture, prescribed burning, and habitat restoration and development projects. In many watersheds, including Garden Creek, land management and development activities have:

- 1) reduced connectivity (i.e., the flow of energy, organisms, and materials) among streams, riparian areas, floodplains and uplands;
- 2) elevated fine sediment yields, degrading spawning and rearing habitat;
- 3) reduced large woody material that traps sediment, stabilizes streambanks, and helps form pools;
- 4) reduced the vegetative canopy that minimizes solar heating of streams;
- 5) caused streams to become straighter, wider, and shallower, thereby reducing rearing habitat and increasing water temperature fluctuations;
- 6) altered peak flow volume and timing, leading to channel changes and potentially altering fish migration behavior; and
- 7) altered floodplain function, water tables and base flows.

Under State of Idaho Water Law, early settlers in the Garden Creek watershed were granted water rights to virtually all existing spring and stream surface water sources in the valley. Many of these water rights were granted in the late 1800's to early 1900's and are still recognized as valid uses under existing state water law. Because of the current irrigation practices, the upper reaches of Garden Creek are no longer accessible to the federally listed salmonid populations which once spawned and reared there.

Interruption or blockage of salmonid migration between the Salmon River and its tributary spawning area in upper Garden Creek has been identified as a limiting factor affecting salmonid migration and production in the Garden Creek watershed (City of Challis 2009).

9.0 Analysis of the Potential Effect

Habitat fragmentation and degradation are believed to limit salmonid production and migration due to severe instream flow reductions and highly altered channel morphology from the upper Challis City limits to the confluence with Hannah Slough. Each of these factors may act cumulatively or independently to adversely affect Chinook salmon, steelhead, and bull trout populations.

Water Quality

Due to past practices of removing water from the system upstream of the project site, water quality ranges from nonexistent to poor during the summer irrigation season. A privately owned river crossing at the lower end of the action area can contribute sediment to the system if private vehicles use the site. However, the bridge (also private) next to the river crossing is the preferred method used to cross the stream. The stream crossing is used only in emergencies. Within the City limits the streambanks are stable but highly channeled with riprap. Above the City of

Challis, the Beneficial Use Reconnaissance Program scores are above the full support thresholds and fisheries data show full support of the salmonid spawning beneficial use (IDEQ 2003).

Vegetation

Stream bank cover and stability average 87.5% and 96 % respectively within the action area (IDEQ 2003). Access to the existing private and municipal diversion structures will be from City of Challis owned land on an existing access in an effort to reduce disturbance to the vegetation around the project site. The consolidated diversion and fish screen site will be accessed through private property.

The contractor will remove and stockpile all willow clumps and replant them to aid site recovery. The rock pile and staging areas will be on existing areas that are devoid of vegetation and currently used as a parking area. Willow cuttings and debris bundles will be established along the stream banks in areas disturbed by construction. Debris bundles will include tree branches, stems, live willow stakes and general brush to form a compacted 8 to 10 inch bundle (Figure 5 in Appendix A). Disturbance of existing vegetation will be kept to a minimum.

Fish

Primary negative effects to all fish species will be downstream impacts of turbidity/sediment pulses at the beginning and end of construction, and potential mortality and stress due to electrofishing and salvage in the dewatered reach. Sediment release will be controlled by slowly reducing the flows out of and into the stream channel at the start and completion of the project. Fish salvage will be conducted during dewatering of the construction area and the installation and removal of the cofferdam. Any fish that may be in the construction area will be encouraged to passively leave dewatered areas by slowly installing the cofferdam to incrementally diminish the flow. IDFG personnel will electrofish all fish stranded in isolated pools, place them in aerated buckets and transport them to an area below the project to be released. Electrofishing will be conducted with a Smith-Root backpack LR-24 battery powered electrofisher. All settings and methodologies will be within the guidelines for electrofishing waters containing salmonids listed under the Endangered Species Act (NMFS 2000).

No Chinook salmon or steelhead have been found upstream or within 3 miles downstream of the project site. Bull trout have been documented in Garden Creek on Forest Service land about 10 miles above the project site and on private land more than 3 miles downstream of the project site.

Mitigation Measures to Reduce Adverse Effects of the Proposed Action

This project will be conducted in accordance with Idaho Department of Environmental Quality (IDEQ) best management practices: The BMPs for Idaho Cities and Counties will be cited for construction direction. The BMPs will be incorporated into all contractual documents and specifications for installations. Mitigation measures used to minimize adverse effects to listed species, designated and proposed critical habitat include the following:

1. A cofferdam will be installed to dewater the river reach during construction. The cofferdam will be installed slowly and incrementally to decrease the amount of turbidity as the water is diverted into the 18 to 24 inch by-pass pipe. Slow installation of the cofferdam will encourage any fish to leave the area on their own.
2. Staging of construction equipment and materials will occur at least 100 feet away from Garden Creek.

3. Fuel storage and refueling, if needed, will occur no closer than 150 feet from the Garden Creek. The existing roads and paths will be used to access the project area and utilized as a staging/refueling area for equipment and vehicles. They will be operated using best management practices (use of catch-basins and/or sediment berms) and will be equipped with an appropriate spill containment system. Absorbent pads to soak up leaks and a fuel spill response kit of appropriate size for the equipment used will be readily available throughout the construction period.
4. Heavy equipment will be washed to remove oil/grease before delivery to the job site.
5. All equipment will be inspected before use to remove vegetation and dirt clods that may contain noxious weeds and seeds.
6. Machinery will be inspected daily for fuel or lubricant leaks.
7. Machinery will be operated from the top of the stream bank on adjacent upland and developed areas at each site to the maximum extent practicable. Equipment will not be driven or operated in flowing water.
8. Sediment barriers and erosion controls such as fences, weed-free straw matting/bales or fiber wattles will be used as necessary in all work areas sloping toward the water channel to intercept any surface flow that might transport sediment to the stream channel.
9. Excavated material, if any, will be covered and stockpiled away from the stream channel or flanked with sediment fencing or fiber wattles to minimize opportunity for fine sediment to be transported into the stream.
10. Where construction would otherwise destroy existing riparian vegetation, project managers will direct machinery to remove existing willows prior to disturbance, stockpile them so they can be replanted in disturbed areas to aid site recovery.
11. All operators of construction equipment and/or construction personnel are required to immediately cease operation if a sick, injured, or dead specimen of a threatened or endangered species is found in association with project activities. Take care in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death.
12. Cease any instream work, such as installing or removing cofferdams, during any heavy precipitation events in order to limit the potential for adverse sedimentation from erosion.
13. Slowly dewater the work area at the beginning of the project and then wet the dewatered site to minimize the suspension of disturbed sediments and avoid excessive downstream turbidity at the completion of the project.
14. Turbidity monitoring will be conducted at the project site to the following standards:
 - a. A standard, regularly calibrated turbidity meter, measuring NTUs, will be used.
 - b. A background sample will be taken at a relatively undisturbed area approximately 100 feet upstream from the project site, prior to the expected turbidity pulses to establish background turbidity levels.
 - c. A sample will also be taken every 30 minutes at a spot approximately 500 feet downstream from the point of discharge or the most appropriate downstream site during sediment pulses for comparison to the background measurement.
 - d. The monitoring results will be compared to the background measurements at 30 minute intervals. Turbidity levels that exceed 50 NTUs over background levels for two consecutive readings (60 minutes) shall result in cessation of work until turbidity levels subside.
 - e. All readings and times will be recorded for later report preparation.

15. A post-project report, providing the information discussed above and confirming the successful application of all conservation measures described in this BA will be submitted within four (4) weeks of project completion.

10.0 Conclusion

CHINOOK SALMON and SNAKE RIVER STEELHEAD

This project **May Affect but is Not Likely to Adversely Affect (NLAA)** federally listed Chinook salmon and steelhead trout. The rationale for this determination is based on the following biological information specific to the action area and project site:

1. No Chinook salmon or steelhead have been found on Forest Service land 10 miles upstream of the project site. Chinook salmon and steelhead have been found in the Hannah Slough 3.5 miles downstream of the project site. One Chinook salmon was found 1.4 miles downstream of the project site in 2010.
2. The cofferdam placement will be the only in-water work at the point of construction, but the placement will be done during the low water period between July 7 and August 15. All remaining construction work will be in the dry.
3. There is no fish passage currently at the project site, so water, if present, will be directed through the site in an 18 to 24 inch pipe. However, if needed, IDFG will relocate any fish found in the area when the construction site is dewatered. No federally listed fish are expected to be in the area due to low or no water in the action area.
4. Completion of the project will remove two existing fish passage barriers and replace them with a new, single POD and recontoured streambed that will permit fish passage.
5. The two unscreened diversions will be consolidated into one diversion and a NOAA Fisheries compliant fish screen and by-pass pipe will be installed; 3.12 additional cfs of water will remain in the stream. This will provide access/passage for all species of fish to the upper reaches of Garden Creek during low water times. This is a beneficial effect for Chinook salmon and steelhead.

Critical Habitat

Critical habitat for Chinook salmon (58 FR 68543) and Snake River Steelhead (70 FR 52630) was designated in this reach of the Salmon River and its tributaries in October 1993 and September of 2003, respectively. No Chinook salmon or steelhead have been found within 3 miles of the project site. This project will remove a migration corridor barrier and improve water levels through and downstream of the project site. Therefore the project **May Affect but is Not Likely to Adversely Affect (NLAA)** listed critical habitat for Chinook salmon and steelhead. The project will be beneficial to the species and listed critical habitat.

BULL TROUT

This project **May Affect but is Not Likely to Adversely Affect (NLAA)** listed bull trout. The rationale for this determination is based on the following biological information specific to the action area:

1. Bull trout are only found 10 miles above and more than 3 miles downstream of the project site in Garden Creek.

2. The cofferdam placement will be the only in-water work at the point of construction, but the placement will be done during the low water period between July 7 and August 15. All remaining construction work will be in the dry.
3. There is no fish passage currently at the project site, so water, if present, will be directed around the site in an 18 to 24 inch pipe. If needed, IDFG will relocate any fish found in the area when the construction site is dewatered. No federally listed fish are expected to be in the area due to low or no water in the action area.
4. Completion of the project will remove two existing fish passage barriers and replace them with a new, single POD and recontoured streambed that will permit fish passage.
5. The two unscreened diversions will be consolidated into one diversion and a NOAA Fisheries compliant fish screen and by-pass will be installed. The project will leave 3.12 cfs of water in the stream and open migratory access to and from the upper reaches of Garden Creek. This is considered a beneficial effect for bull trout. It will also benefit all other fish and the aquatic habitat of Garden Creek.

Critical Habitat

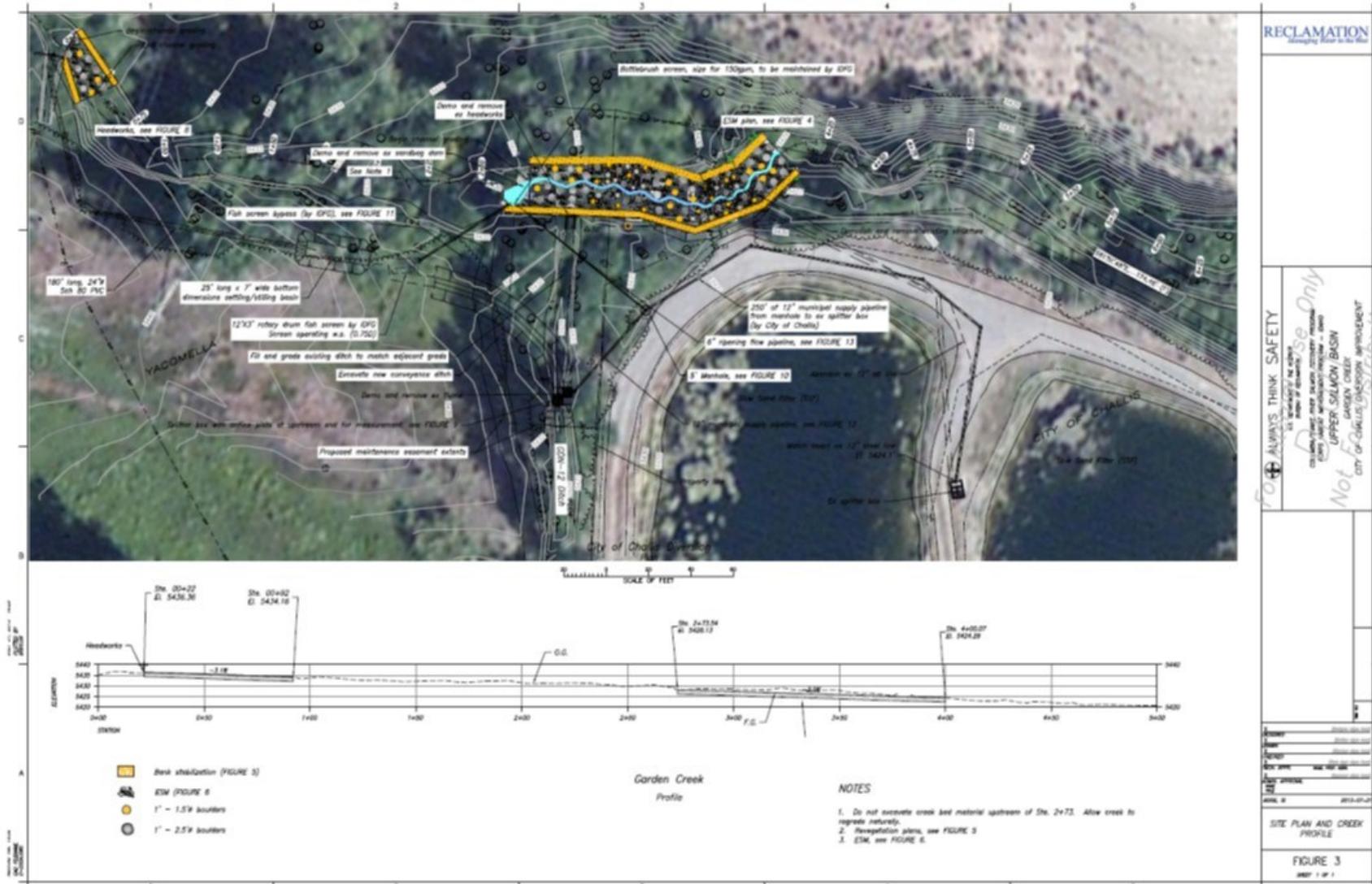
On October 18, 2010, the USFWS published a Federal Register notice: *Endangered and threatened wildlife and plants; Revised designation of critical habitat for bull trout in the coterminous United States* that includes the Garden Creek (75 FR 63898). Garden Creek, a tributary to the Salmon River, was not included in the critical habitat designation; therefore, no critical habitat for the federally listed bull trout is in the action area and the project will **Not Affect (NA)** bull trout critical habitat.

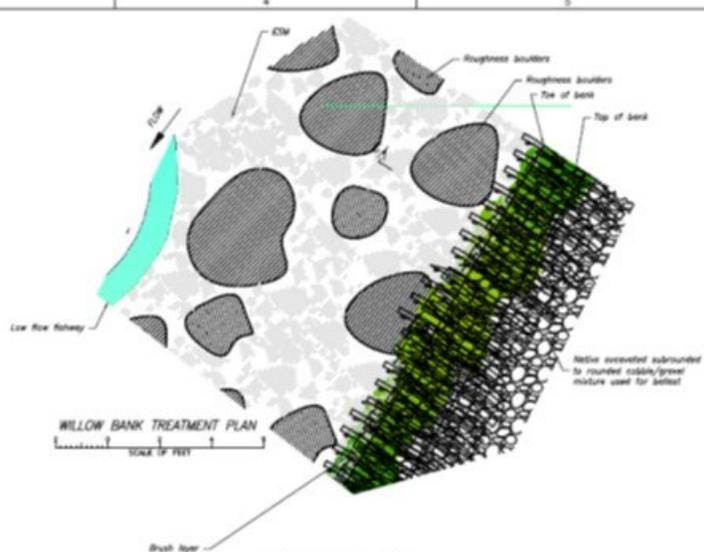
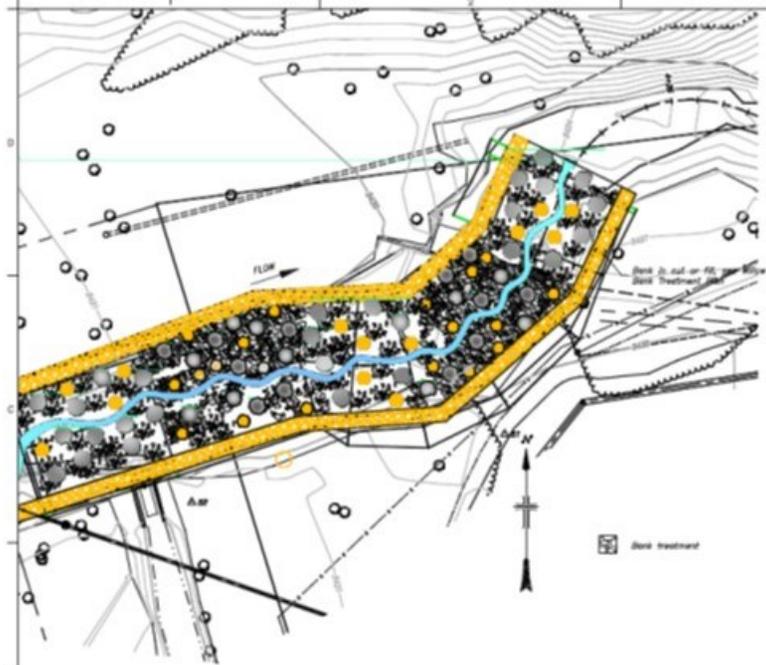
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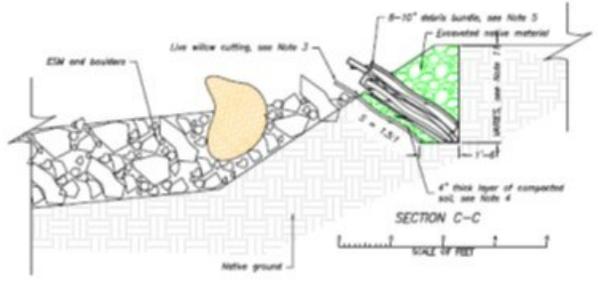
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Appendix A. Diagrams of City of Challis Diversion and Headgate Structure





- Will Bank Treatment Notes:**
- Bank treatment shall be constructed according to the plan view.
 - Excavate material as shown in Section C-C and abutment. Excavated materials are to be used as select post debris and willow placement. Excavation shall fit into ESM cross planement.
 - Willow cuttings shall be placed at 6 to 12 inches on center along the base of the excavation. The cuttings shall be 1/2 to 3/4 inches in trunk diameter and from 2.5 to 4 feet in length. Cuttings shall retain all side branches but will have the top first of the previous year's growth removed. Cuttings shall be cut and installed on the same day or shall be soaked in water for a maximum of 14 days prior to planting to enhance stem moisture and rapid root development following planting.
 - A 4" layer of loose earth shall be placed over willow cuttings to support establishment. Install debris and slash including tree branches, stems, live willow stems, and general brush to form a compacted 8 to 10 inch debris bundle. Material should be between 2.5 and 4 feet in length and consist of a range of stem diameters between 2 to 4 inches. Material can be either live or dead except the live stakes included in the debris.
 - Brush layering benefit shall be placed in incremental lifts. Fill layer thickness prior to compaction shall not exceed 6 inches. Fill shall be compacted to a density equivalent to that of the surrounding in-situ material by means of hand tamping, power tampers, plate vibrators, or machine compaction. Check fill elevations to match design grade as identified in the plans.
 - Upstream and downstream transitions shall be constructed at the direction of the project inspection.
 - Transplants for clump planting shall consist of a contiguous mass of above-ground and below-ground portions of multiple or single stemmed willows. Soil bound by roots shall be considered a component of the transplant. The transplant shall contain stems or trunks that exceed 4 to 8 feet from the top of the root crown, and have a minimum of 2 viable axillary buds.
 - Planting hole shall be deep enough to ensure that 1/3 to 1/2 of the root mass in the live water hole. The planting hole shall be one-third full with the soil excavated from the planting hole. Once the clump is placed in the planting hole, the hole shall be filled with water to displace air pockets around roots. After the hole has drained, add more soil and water into until substrate basalt material covers the top of root crown to a minimum depth of 2 inches. After free water has drained, backfill hole with remaining soil to finish grade. Each transplant shall be thoroughly watered after planting.
 - Notify the COR of any process changes prior to implementation. The COR reserves the right to modify structure design specifications during construction if warranted due to unforeseen conditions.
 - Bottom of live debris and willow stakes needs to be 6-inches below channel thalweg in rubble and 6-inches below the top of post water surface.



ALWAYS THINK SAFETY
 U.S. DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 UPPERCANALIS RIVER PLAIN RECOVERY PROGRAM
 UPPER SALMON SUBBASIN - DAM
 GREEN CHIEF
 CITY OF CHANELL DRAINAGE IMPROVEMENTS

REVEGETATION WILLOW BANK TREATMENT PLAN AND SECTIONS

FIGURE 5

Sheet 1 of 1

ENGINEERED STREAMBED MATERIAL (ESM)		
Gradation	# of Mx	Size
D100	18E	2 feet
D84	34E	1.8 feet
D60	34E	1.2 feet
D16	6E	2.25 inch
D8	8E	0.75 inch

*Roughness and grade control boulders are considered D100-D84 of ESM.

FINES (USCS SILTY SAND)		
Gradation	# of Mx	US Sieve Size
D100	15E retained	No. 4
D60	55E retained	No. 200
D30	30E passing	No. 200

ESTIMATED CONTRACTOR FURNISHED QUANTITIES		
Material	Quantity	Units
Grade Control and Roughness Boulders	80	EA
ESM D84 minus	190	CY
Fines	25	CY
Grout	12	CY
Off Haul Unusable Material*	80	CY

*Dispose to be directed by contracting officer.

ESTIMATED CONTRACTOR SORTED* QUANTITIES		
Material	Quantity	Units
Grade Control and Roughness Boulders (Existing Weirs)	150	EA
Existing Streambed Material	50	CY

*Sorted material from existing weirs and streambed to be reused.

RIPRAP GRADATION (FT)	
2	100E
1.50	80E
1.25	60
0.85	40
0.50	30
0.30	10

ESM NOTES

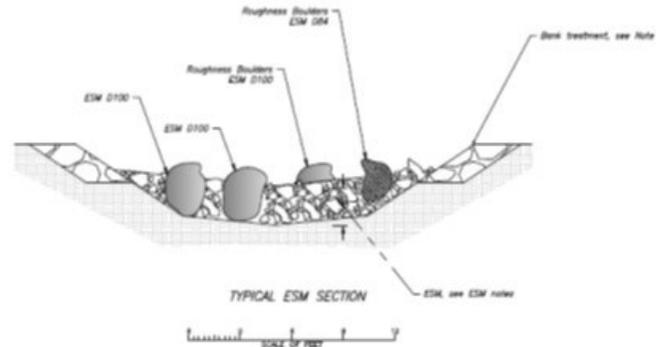
- Obtain ESM material in three separate ranges of size, D100-D84, D84-No. 4 Sieve, and fines. Store in separate piles onsite.
- Following shall reference angularity of particle size class in ESM:
 - 0 - 6-inch material: rounded to subrounded
 - 6-inch to 2-foot material: angular
 - 2-foot and above: rounded to subrounded
- Use a 2" trash pump for sluicing/washing D16 minus material into voids. Nozzle may be required. Minimize turbidity by reusing water used for sluicing/washing.

CONSTRUCTION SEQUENCING

- Remove boulders of existing creek bed and sort material for reuse.
- Excavate to bottom grade of ESM and pools. Sort material for reuse under direction of COR. Haul off excess material.
- Finished grading to proceed from downstream to upstream moving stepwise a distance within swing radius of excavator constructing channel/banks then moving to next section.
- Build pool structures and place roughness boulders within swing radius of excavator under direction of engineer.
- Begin placing D84 minus of ESM around grade control structures and roughness boulders. Use max. 1' lifts and bucket compact with excavator.
- Add fines and wash/sluice material liberally and continuously into voids reusing water from sump to minimize turbidity until all voids are filled and water sheets over placed material.
- Utilize constructed pool as authorized by COR as sump for dewatering and sluicing/washing ESM material into voids.
- Repeat steps 6-7 until grade of roughened channel is reached.
- Lay back or fill slopes using excavated material at 1.5H:1V under direction of engineer.
- Wash fines into voids to completely seal banks.
- Move upstream repeating steps 5-10 until roughened channel is complete.

GENERAL NOTES

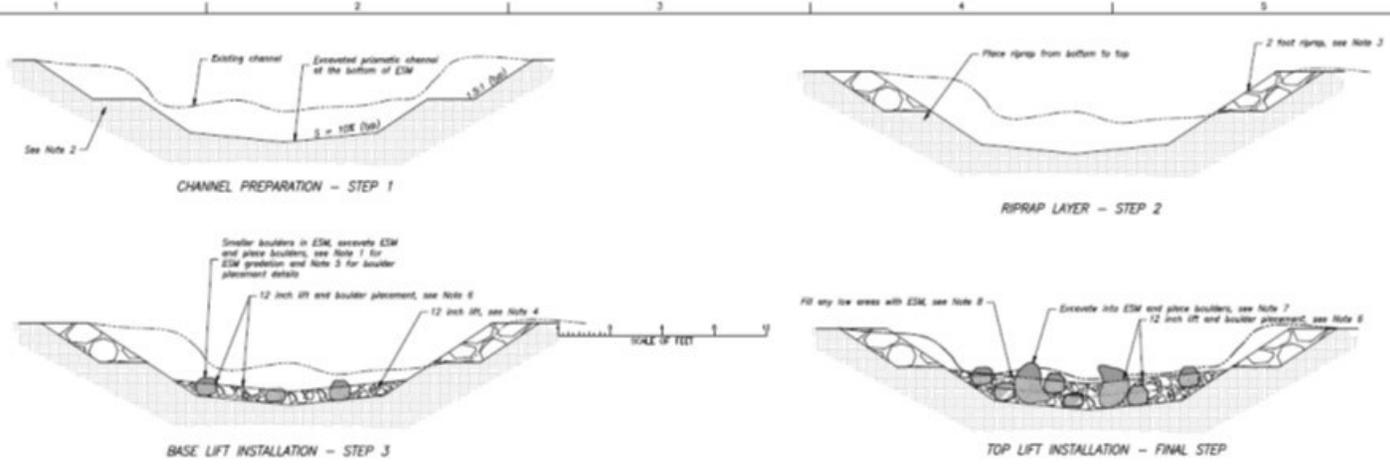
- Reference FIGURE 5 for bank treatment.



ALWAYS THINK SAFETY
 City of Gallegos
 JIPPEY SALMON/SUBBACH
 Use Only
 Not for Distribution

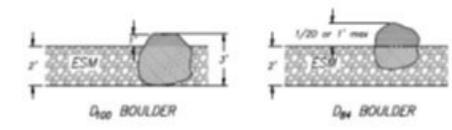
DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT NO.	
SCALE	
DATE	

ENGINEERED
STREAMBED MATERIAL,
DETAILS AND NOTES
FIGURE 6
SHEET 1 OF 1



NOTES

1. Contractor to stockpile ESM per design specifications, see drawing FIGURE 6. Materials are to be graded, mixed, and stockpiled at the material pit and hauled to the immediate project area for placement.
2. Tear existing channel bed by removing organics, creating a planimetric working surface, and compacting that surface with a CAT345 or larger excavator.
3. Construct berms (see FIGURE 6 and 7) 2 feet thick, with 1.5:1 side slopes. There will be areas of the berms that are designed to utilize a mix of riprap and soil wrap or excavated material and willow bundles, see drawings 6 and 7 to determine where the differing bank stabilization techniques will be used.
4. Import ESM, compact media material in 12 inch lifts using CAT345 or larger excavator, track on ESM sufficiently to compact material. Pressure wash fines into ESM using a brush pump and 2 inch fire hose with nozzle until water runs on surface.
5. Excavate pockets into ESM and set boulders to embankment per detail; pressure wash fines into media surrounding boulders and compact with excavator bucket.
6. Repeat media construction and boulder placement in 12 inch lifts to the design channel thalweg bed elevation.
7. Boulders sized and spaced as shown on FIGURE 4 are to be added to the top media lift to create diverse flow paths and habitat. Each boulder is to be embedded per detail.
8. Excavate and shape low flow fishways as authorized by CDR and as shown on FIGURE 4 during and before boulder placement.
9. Hand compact ESM around each boulder with vibratory compactor (or similar).
10. Top dress completed engineered fill with ESM per C.O./Engineer.



DESIGN INTENT

The intent of the engineered fill is to provide a stable constructed surface comprised of native and imported substrate. The ESM is used to increase the river channel bed elevation and is typically constructed to form riffle, run, and glide habitat units. The ESM composition includes three primary substrate classifications including gravels and cobbles, boulders, and fines. Boulders provide the armor resistance, influence low flow stream flow patterns and hydraulics, and create habitat while the gravels and cobbles fill majority of the pore space around the boulders. Fines are pressure washed into the media material to seal the streambed to reduce percolation losses and bed material movement. The ESM is constructed in 12 inch lifts. Boulders protrude from the ESM surface to promote diverse flow paths, provide energy dissipation, and create aquatic habitat.

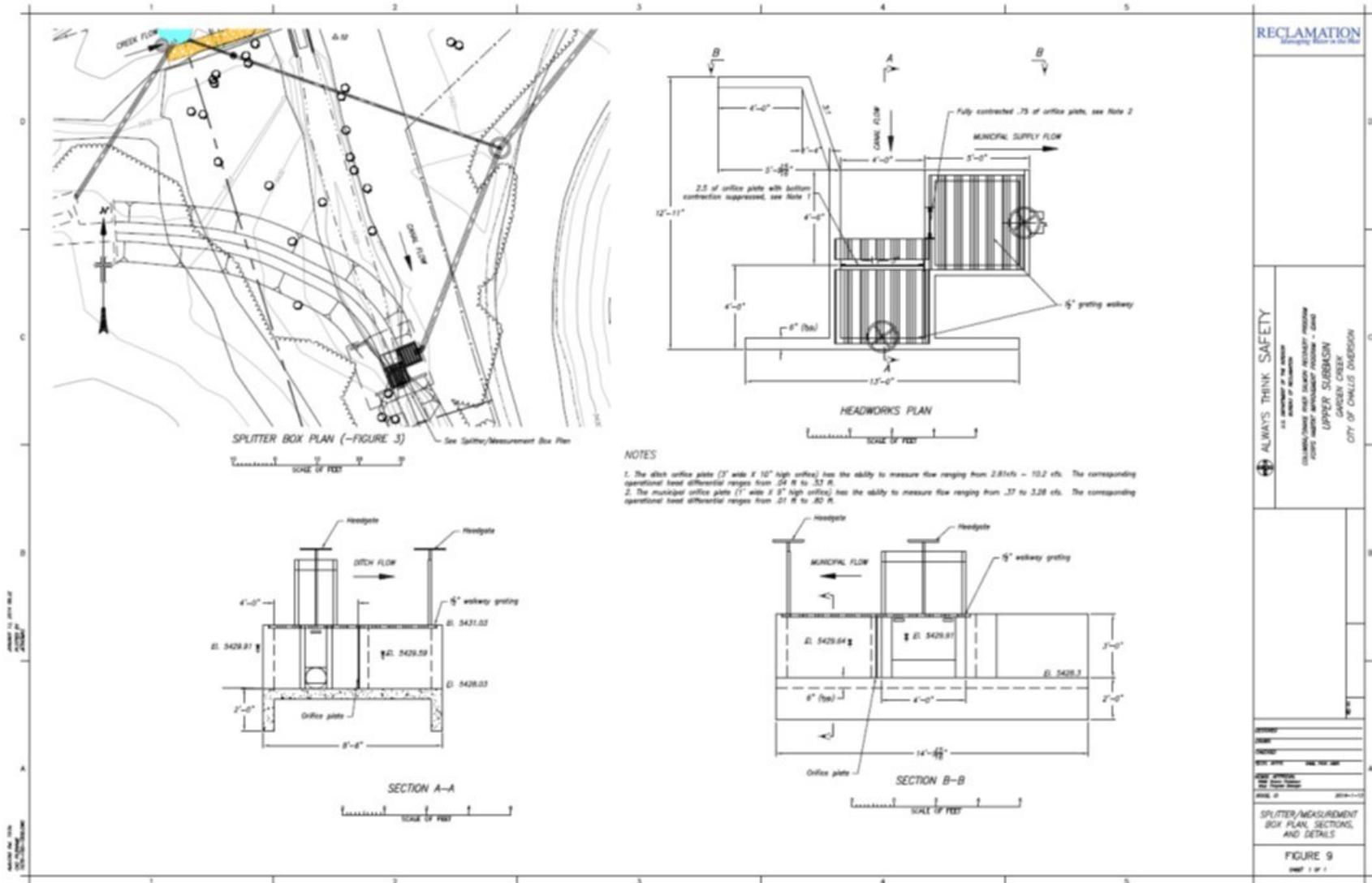


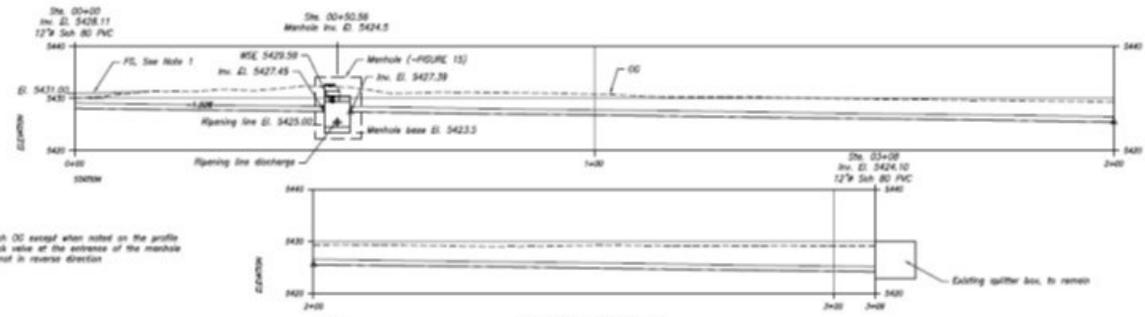
FIGURE 7 ESM PLACING PROCEDURE, PLAN AND SECTION

ALWAYS THINK SAFETY
 Use Only
 UPPER SALMON SUBBASIN
 City of Delta's physical jurisdiction

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
SCALE	DATE

ESM PLACING PROCEDURE, PLAN AND SECTION
FIGURE 7
Sheet 1 of 1





- NOTES**
1. Finished grade to match OG except when noted on the profile
 2. Supply to have a check valve at the entrance of the manhole to allow flow through but not in reverse direction

ALWAYS THINK SAFETY
 ALL WORKERS MUST WEAR
 PROTECTIVE GEAR
 UPPER SOLUTIONS/BCON
 CITY OF DENVER
 NOT FOR CONSTRUCTION

Project	Upper Solution
Sheet	MS-P-12
Scale	AS SHOWN
Date	04/20/10
Drawn	MS-P
Checked	MS-P
Project Lead	MS-P
City of Denver	1000-00-00
MUNICIPAL SUPPLY PIPELINE	
FIGURE 12	
SHEET 1 OF 1	

Appendix B. Federally Listed Species

The U.S. Fish and Wildlife Service county species list and the National Oceanographic and Atmospheric Administration Fisheries Service (collectively referenced as the Services) list are for informational purposes only. The Services biologists have used the best scientific and biological information available to formulate these lists. The lists are updated regularly. Section 7 of the Act requires Federal agencies to assure that their actions are not likely to jeopardize the continued existence of endangered or threatened species. Federal funding, permitting, or land management decisions are considered to be Federal actions subject to Section 7. If the proposed action may affect a listed species, consultation with the Services is required. Formal consultation must be initiated for any project that is likely to adversely affect a threatened or endangered species. If a proposed species is likely to be jeopardized by a Federal action, regulations require a conference between the Federal agency and the Service (www.fws.gov/idaho/species/IdahoSpeciesList.pdf ; www.nmfs.noaa.gov/pr/species/esa/fish.htm 76 FR 66370).

Custer County, Idaho Species List

CANDIDATE SPECIES	FEDERAL STATUS	CRITICAL HABITAT	COMMENTS
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	PT	None	FWS Jurisdiction
Greater Sage-Grouse (<i>Centrocercus urophasianus</i>)	C	None	FWS Jurisdiction
Wolverine (<i>Gulo gulo luscus</i>)	PT	None	FWS Jurisdiction (Petition was found “warranted but precluded”)
LISTED SPECIES			
Canada lynx (<i>Lynx canadensis</i>)	LT	Not in designated LAU	FWS Jurisdiction
Gray Wolf (<i>Canis lupus</i>)	XN	None	FWS Jurisdiction
Bull trout (<i>Salvelinus confluentus</i>)	LT	Designated	FWS Jurisdiction
Snake River Steelhead trout (<i>Oncorhynchus mykiss</i>)	LT	Designated	NOAA Fisheries jurisdiction
Snake River Spring/summer Chinook salmon (<i>O. tshawytscha</i>)	LT	Designated	NOAA Fisheries jurisdiction
Snake River Sockeye salmon (<i>O. nerka</i>)	LE	Designated	NOAA Fisheries jurisdiction

LT = Listed Threatened; LE = Listed Endangered; PT = Proposed Threatened; C = Candidate; XN = Experimental Nonessential

**Endangered and Threatened Marine and Anadromous Fish
List of Fish Species under NMFS' Jurisdiction**

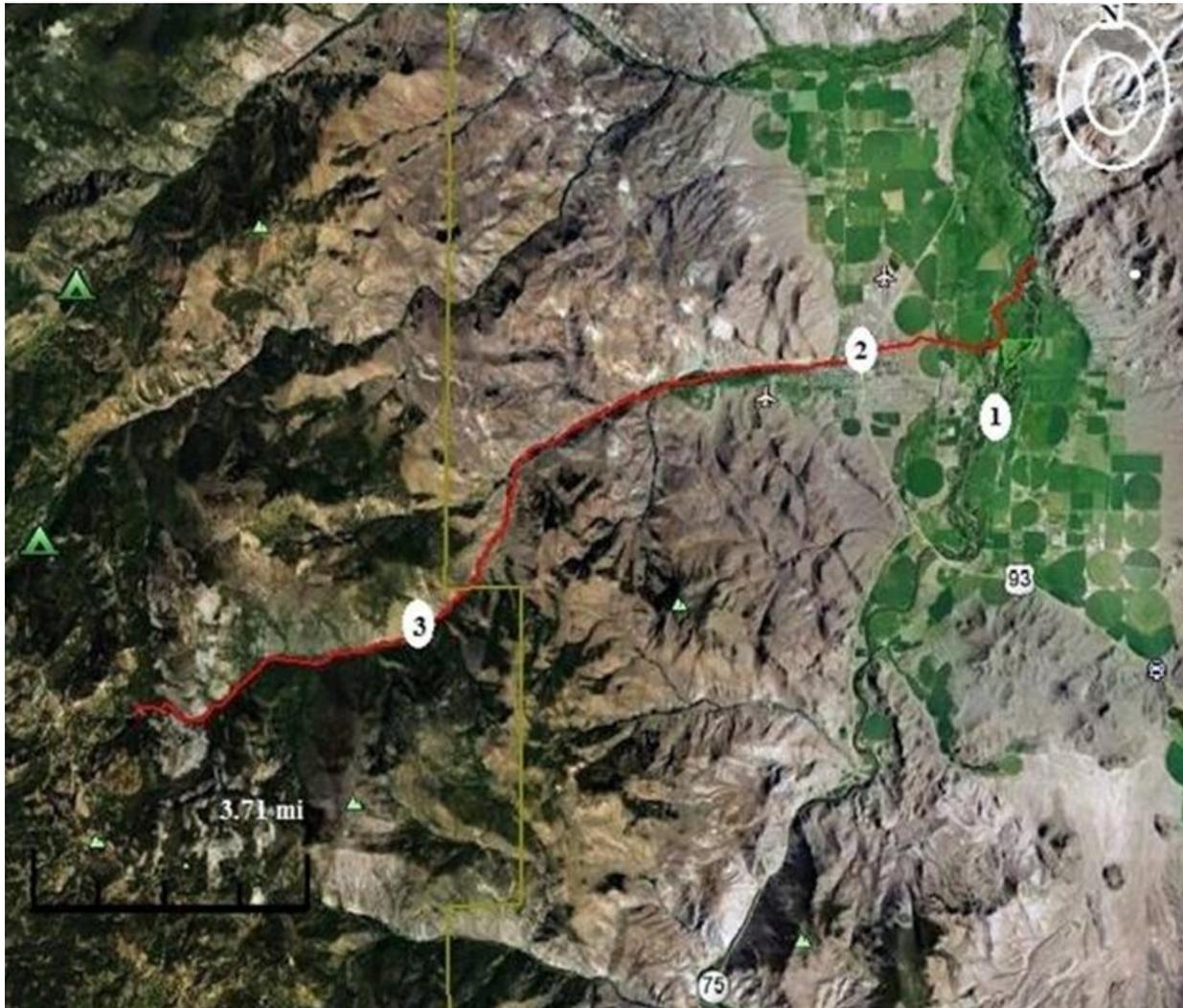
Species	Year Listed*	Status	Critical Habitat	Recovery Plan
Chinook Salmon (<i>Oncorhynchus tshawytscha</i>)				
Snake River fall-run	1992	T	final	in process
Snake River spring/ summer-run	1992	T	final	in process
Sockeye Salmon (<i>Oncorhynchus nerka</i>)				
Snake River	1991	E	final	in process
Steelhead Trout (<i>Oncorhynchus mykiss</i>)				
Snake River Basin	1997	T	final	in process

(E = Endangered; T = Threatened *)

* All Pacific salmonid listings were revisited in 2005 and 2006. Only the salmonids whose status changed as a result of the review will show the revised date; for all others, only the original listing date is shown.

Updated May 7, 2014

Appendix C. Fish Survey Sites (IDFG, unpublished data reviewed in 2012; Gamett 2011; Bartel, et al. 2009)



Fish survey sites: 1-Hannah Slough; 2- Challis High School; 3- US Forest Service managed land.

Appendix D. Project Site Photographs



Lower end of the Action Area, 160 yards downstream of the municipal diversion.



Garden Creek channel downstream of the project area. Looking upstream near the lower end of the Action Area.



Downstream view of the City of Challis Municipal Water Supply diversion on Challis Creek. Note the structure drop is 4 ½ feet across the entire structure with no fish passage.



Looking upstream from the Municipal Water supply diversion to the private irrigation diversion.



Looking downstream from the existing private irrigation headgate.



Looking upstream from the private irrigation diversion.



Approximate location, on private land, of new headgate installation site looking upstream.



Looking downstream from approximate location, on private land, of new headgate structure.

RECEIVED

AUG 07 2015

DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE WATER QUALITY PROGRAMS



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to NMFS No: WCR-2015-3171

August 4, 2015

Mike May
Senior Water Quality Specialist
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

Re: Endangered Species Act Section 7 Informal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the City of Challis, Idaho Potable Water-line Replacement Project HUC #1706020104 – Garden Creek

Dear Mr. May:

On June 11, 2015, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the Idaho Department of Environmental Quality (IDEQ) is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). IDEQ received Federal funding for this project, and is acting on behalf of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Housing and Urban Development (HUD). EPA transmitted Federal funds pursuant to section 1443(a) of the Safe Drinking Water Act, while HUD transmitted Federal funds pursuant to Community Development Block Grants authorized by the Housing and Community Development Act. This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

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 pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR Part 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. In this case, NMFS concluded that the action would not adversely affect EFH. Thus, consultation under the MSA is not required for this action.



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 concurrence letter will be available through NMFS' Public Consultation Tracking System [<https://pcts.nmfs.noaa.gov>]. A complete record of this consultation is on file at the Snake Basin Area Office, Boise, Idaho.

Proposed Action and Action Area

The proposed action is to replace an existing potable domestic water delivery system in Challis, Idaho. The IDEQ proposes to authorize the City of Challis (COC) to install, operate, and maintain the City water system. The project proposes the following:

- Replacement of approximately 13,000 linear feet of water main, installation of 52 new fire hydrants, and two pressure-reducing valves in existing roadways in the "Old Town" section of Challis.
- Installation of approximately 6,000 linear feet of new 8-inch water main, approximately 1,950 linear feet of new 6-inch water main, 32 new fire hydrants and associated fittings within existing roadways to extend service to the airport.
- Replacement of 760 water meters and ancillary equipment.
- Installation of a Supervisory Control and Data Acquisition telemetry system for monitoring and control of the water system.
- Horizontal drilling the water line under Garden Creek is not anticipated but is included as part of the analysis if it is deemed necessary as the project moves forward. There may be one or two potential crossings using horizontal drilling as part of the project.

Horizontal Directional Drilling Practices

The proposed pilot bore hole will be 2 inches in diameter. After the pilot bore is successfully drilled, a reamer and the conduits will be attached and will be pulled together back through the pilot hole, enlarging it sufficiently to accommodate the two conduits (3 or 4 inches in diameter). Drilling fluids or muds will be used to lubricate and cool the drilling equipment, stabilize the bore, and to transport cuttings or spoils out of the bore hole. The project proposes to use the bentonite clay-based product, Bore-Gel®. The boring may also incorporate the additive 'No-Sag' for better suspension of drill cuttings and stabilization of the bore (when needed). The bore pits, located at each end of the bore, will be approximately 4 feet deep, 5 feet long, and 2 feet wide. They will also be set back from waterbodies according to the depth required and the directional equipment's grade limitation of 10 to 15 degrees. This results in a minimum setback of more than 37 feet at a 10-foot bore depth.

IDEQ proposes the following best management practices (BMPs) for horizontal drilling and working near the stream:

- When excavating the drilling pits, the existing topsoil and vegetation mats will be separated and set aside from the deeper subsoil for later use in rehabilitating the site.
- Horizontal directional drilling beneath designated critical habitat will occur only during the recognized instream work windows: beginning the second week of July through the second week of August.
- Drilling mud return volumes will be continuously monitored as an indicator of bore integrity. Return volumes must indicate an intact bore, or drilling will be halted immediately. Drill fluid pumping will also be immediately halted and static pressure within the bore hole immediately relieved. Boring effort would resume only after reevaluation with the IDEQ Engineer or assignee.
- Where designated critical habitat for ESA-listed fish will be crossed by horizontal directional drilling, bores will be at least 10 feet below the deepest part of the channel or culvert. Monitors will observe the watercourse continuously during the drill for signs of underground fracturing and surface migration (frac-out) of drilling mud. With any indication of a surface connection, drilling will be halted immediately and static pressure within the bore hole immediately relieved. If a point source is apparent, containment with sediment filters or something similar would also be attempted. The effort would resume only after reevaluation with the Engineer or assignee.
- All drilling mud and/or waste material will be contained and disposed of at appropriate sites, such as old material source pits, as directed by the permit administrator.
- Washing of tools and equipment will occur only within staging areas, or other areas approved by the permit administrator, where there is no potential for effluent to reach surface waters.
- Fuel storage will occur only within staging areas, and refueling will not occur within 150 feet of streams. If fueling must occur at less than 150 feet, it will occur inside an impervious containment structure with a volumetric holding capacity equal to at least 110% of the fueling tank. Engine and hydraulic fluids will be monitored for leaks. Spill packs will also be on hand for minor leaks/spills.
- To minimize the potential for introducing hazardous material to the aquatic system, a spill prevention and control countermeasures plan will be prepared by the contractor and approved by the permit administrator prior to project.
- Where construction activities occur within 75 feet of stream channels or standing water, or in areas where water may concentrate during snowmelt periods, standard sediment and pollutant prevention and retention practices will be utilized (e.g., silt fence, wattles).

- Where new construction occurs within wetland or riparian conditions, existing vegetation will be protected to the extent possible and disturbed areas will be promptly rehabilitated.
- If needed, water drafting sites will be pre-identified through coordination with an aquatics specialist to avoid spawning and key rearing areas. All drafting equipment and operations will meet NMFS screening criteria of openings \leq 3/32-inch with approach velocities $<$ 0.40 feet per second.
- No equipment will operate and no construction activity will occur instream.

For the purposes of this consultation, the action area is the area adjacent to Garden Creek and includes the existing road right-of-ways where new water lines, fire hydrants, and a telemetry monitoring and control line will be installed (Figure 1). As such, the action area is confined within the identified corridors in: Garden Creek, from the wells through town and a new line to the airport (Figure 1) and downstream approximately 2 miles to the confluence with the Salmon River for turbidity and stream flow.

Endangered Species Act

The IDEQ determined the proposed action would have “No Effect” on Snake River sockeye salmon and their designated critical habitat. The regulations implementing section 7 of the ESA do not require NMFS to review or concur with “no effect” determinations; therefore, NMFS will not further address effects to sockeye salmon or their critical habitat in this letter.

Spring/summer Chinook salmon and Snake River Basin steelhead are likely to occur within the action area. The action area also contains designated critical habitat for ESA-listed spring/summer Chinook salmon and Snake River Basin steelhead (Table 1). Pursuant to NMFS’ ESA responsibilities and authorities, NMFS evaluated the effect of the projects on ESA-listed species and designated critical habitat.

Table 1. Federal Register notices for final rules that list threatened and endangered species, designated critical habitat, or apply protective regulations to listed species considered in this consultation (Listing status: ‘T’ means listed as threatened under the ESA; ‘E’ means listed as endangered).

Species	Listing Status	Critical Habitat	Protective Regulations
Chinook salmon (<i>Oncorhynchus tshawytscha</i>)			
Snake River spring/summer run	T 6/28/05; 70 FR 37160	10/25/99; 64 FR 57399	6/28/05; 70 FR 37160
Steelhead (<i>O. mykiss</i>)			
Snake River Basin	T 1/05/06; 71 FR 834	9/02/05; 70 FR 52630	6/28/05; 70 FR 37160

Consultation History

The IDEQ submitted a biological assessment (BA) on June 11, 2015. The water line replacement project was first discussed in an email from Tina Daniels from the Idaho Department of Commerce Block Grant Funds on November 11, 2014, when the COC was beginning to apply for Federal funding. A prior consultation (WCR 2014-107) was completed on June 23, 2014, for the Garden Creek Rehabilitation Project which included combining two instream diversions into one and providing fish passage, installing a fish screen, and providing 3.12 cubic feet per second (cfs) for instream water until needed or an emergency. Informal consultation was completed resulting in a NLAA determination for Snake River Basin steelhead and Snake River spring/summer Chinook salmon. One of these diversions from Garden Creek was for the potable water supply for the City that has since been replaced with two groundwater wells, but the City has retained the rights to the 3.12 cfs as discussed above and in an emergency could use this water for the City and convey it through the new water line as proposed in this project.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is NLAA listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Most of the proposed waterline and hydrants occur within the street right of way on paved or gravel streets and roads. Due to the distance to streams, operations in these upland locations present a discountable risk of affecting ESA-listed species. Where the route crosses streams, there is potential to affect ESA-listed species through direct disturbance associated with equipment noise and activities, effects from sediment delivery to waters, and potential chemical contamination. Sediment could be delivered as a result of stormwater runoff from disturbed areas in close proximity to streams or if bore drilling results in a frac-out. The following discussion focuses on potential effects at stream crossings, particularly crossings that are either designated critical habitat and/or occupied by ESA-listed anadromous fish.

Species Determination

The proposed action, including interrelated actions, will require: (1) Excavating a trench approximately 3 feet wide and up to 10 feet deep to place the waterline; and (2) potentially boring beneath Garden Creek in one or two locations designated as critical habitat for Snake

River spring Chinook and summer steelhead. Potential effects differ fundamentally by the method used to install the water line and the proximity to occupied or potentially occupied habitat. Since none of the proposed methods will enter stream channels directly, no structural changes to habitat features will occur.

Directional drilling under streams presents unique risks, an expanded area of disturbance, and a greater period of activity at each crossing. However, the work will occur at a significant set-back distance from each stream (typically more than 35 feet where species will be present). The separation of construction activity from the stream results in little opportunity to directly disturb individuals. Any disturbance that does occur as a result of equipment noise or human activity at these sites will be insignificant.

Boring under the stream avoids any direct impact to the streams, unless a connection between the bore hole and the stream exists or is created during the boring process. During typical bore operations, some drilling fluids, which are circulated through the bore under pressure, are deposited and absorbed into the adjacent substrates, essentially self-sealing the sides of the borehole. This minor lateral diffusion of the fluids is a normal occurrence, and does not necessarily mean the drilling fluid is rising to the surface where it could enter the stream from below. However, if a large fracture or cavity in the substrate is encountered, it is possible that drilling fluids can reach the surface. Frac-outs have potential to affect ESA-listed species by exposing them to high levels of turbidity or potential chemical exposure. Proposed drill fluids will contain Bore-Gel® and potentially, the additive No-Sag, which are composed of non-toxic bentonite (essentially a clay) and Xanthan gum (a food thickening agent), respectively. Although non-toxic, should a frac-out occur, exposure to high bentonite levels could cause suffocation of fish or other adverse effects associated with exposure to ultra-fine particles.

The risk of a frac-out is considered discountable given the proposed conservation measures, existing substrate conditions, and nature of the proposal. The risk of a frac-out is relative to the type of substrate, the depth and distance of the bore, and the size of the borehole/equipment. The action area substrate is primarily sands and gravels, which are typically effective at containing and self-sealing the borehole. In addition, bore hole diameters will be small and bore lengths relatively short (less than 100 feet), which minimizes the amount of drilling fluid used and reduces potential to create fractures. In addition, the action requires bores be more than 10 feet below the deepest part of any streams if they are designated as critical habitat (where ESA-listed fish are most likely to occur); and between 5 and 10 feet below other channel crossings. This depth is typical within the industry for these types of crossings, and risk of frac-out is considered discountable with these measures in place. The bore construction requires: (1) Permit administrator (IDEQ or their assignee) to constantly monitor drilling fluid levels and stream turbidity during drilling activities (shutting down work if either is observed); and (2) all bore drilling be conducted during the identified instream work window for the area. It is assumed that with the small diameter bore, at a depth of 10 feet or more, a considerable margin of error exists for detecting a compromised bore (e.g., a drop in pressure, or return volumes) well before drilling fluids could reach the stream. These measures provide additional assurance that drilling will be immediately stopped in the unlikely event that a frac-out occurs, and assurance that no spawning or incubating fish would be affected.

Rearing Chinook salmon and steelhead could be affected by turbidity plumes and sediment deposition on the channel bottom as a result of sediment generated and mobilized by the proposed action. Turbidity plumes can cause salmonids to avoid affected reaches in the stream and suspended sediments can physically abrade gill surfaces. Sediments can fill interstitial spaces in the stream channel as they settle out of suspension. Sediment deposition can suffocate eggs (if sufficient quantities of sediment are deposited on top of redds), effectively reducing spawning and rearing habitat for fish, and diminishing habitat for prey species. However, redds are unlikely to be affected as Chinook salmon are not known to spawn in Garden Creek, and steelhead spawning should be complete before the project is implemented. The potential for sediment delivery to action area streams is discountable for the following reasons. Drill pits will occur more than 37 feet from surface waters, and all disturbed areas within 75 feet of surface waters will have standard BMPs for sediment retention and capture in place. In addition, all disturbed areas will be recontoured, seeded, repaved or graveled, and monitored to ensure appropriate revegetation occurs. Together, these practices should control most, if not all, sediment delivery to Garden Creek, and any levels of sediment delivered are expected to be insignificant. Therefore, the effects to rearing juvenile Chinook salmon and steelhead from turbidity and sediment deposition are expected to be insignificant.

A risk of chemical contamination exists from potential fuel or fluid spills during project implementation. Petroleum-based contaminants such as fuel, oil, and some hydraulic fluids, contain poly-cyclic aromatic hydrocarbons, which can cause chronic sub-lethal effects to aquatic organisms. Ethylene glycol (the primary ingredient in antifreeze) has been shown to result in sub-lethal effects to rainbow trout. Brake fluid is also a mixture of glycols and glycol ethers, and has similar toxicity as antifreeze. The action requires all equipment be leak and drip free prior to arriving on site. Further refueling will only occur more than 150 feet from any surface waters or within containment barriers with a larger capacity than the quantity of fuel present. These measures make chemical contamination of surface waters discountable.

Critical Habitat Determination

Within the action area, Garden Creek is designated as critical habitat for Snake River spring/summer Chinook salmon and Snake River Basin steelhead. NMFS reviews the status of designated critical habitat affected by the proposed action by examining the condition and trends of essential physical and biological features (Chinook salmon) or primary constituent elements (PCEs) (steelhead) throughout the designated area (hereinafter collectively referred to as PCEs). The PCEs consist of the physical and biological features identified as essential to the conservation of the listed species (Table 2).

Table 2. Types of sites and essential physical and biological features designated as PCEs, and the species life stage each PCE supports.

Site	Essential Physical and Biological Features	ESA-listed Species Life Stage
Snake River Basin Steelhead^a		
Freshwater spawning	Water quality, water quantity, and substrate	Spawning, incubation, and larval development
Freshwater rearing	Water quantity & floodplain connectivity to form and maintain physical habitat conditions	Juvenile growth and mobility
	Water quality and forage ^b	Juvenile development
	Natural cover ^c	Juvenile mobility and survival
Freshwater migration	Free of artificial obstructions, water quality and quantity, and natural cover ^c	Juvenile and adult mobility and survival
Snake River Spring/summer Chinook Salmon		
Spawning and Juvenile Rearing	Spawning gravel, water quality and quantity, cover/shelter, food, riparian vegetation, and space	Juvenile and adult.
Migration	Substrate, water quality and quantity, water temperature, water velocity, cover/shelter, food ^d , riparian vegetation, space, safe passage	Juvenile and adult.

^a Additional PCEs pertaining to estuarine, nearshore, and offshore marine areas have also been described for Snake River Basin steelhead. These PCEs will not be affected by the proposed action and have therefore not been described in this letter of concurrence.

^b Forage includes aquatic invertebrate and fish species that support growth and maturation.

^c Natural cover includes shade, large wood, log jams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

^d Food applies to juvenile migration only.

Because the above discussion on potential sediment and chemical contamination effects to species focused on habitat-related impacts, the rationale for the species' determinations are also applicable to critical habitats within the action area. As such, the action will result in insignificant levels of sediment delivery during installation of the proposed waterline route. There is also a discountable potential for chemical contamination of critical habitat due to the anticipated effectiveness of the proposed conservation measures. In addition, the action will result in discountable potential for sediment delivery from horizontal drilling as frac-outs are not expected to occur should drilling be necessary to install a stream crossing. There is also a discountable potential for chemical contamination of critical habitat due to the anticipated effectiveness of the proposed conservation measures.

Small quantities of riparian vegetation will be removed to accommodate the drill pit excavation at both ends of all bore sites (zero to three crossings on designated critical habitat). In addition, some of the proposed waterline or hydrants may cross wetland sites or pass through riparian areas and the nature of the installation will require disturbing existing vegetation, up to 4 feet wide, in these locations. All disturbances will be minimized to the extent practicable and will be immediately recontoured and revegetated after installation. The IDEQ will also monitor revegetation efforts to ensure recovery of pre-existing conditions occurs. As such, the effects to

riparian vegetation are expected to be temporary, and fully recovered in 1 to 2 years. The small footprint and widely scattered nature of individual riparian disturbances will not measurably affect any PCEs of critical habitat at the local or stream reach scales, and anticipated disturbance is discountable and not likely to affect the long-term conservation value of critical habitat.

Based on the best available information and successful implementation of conservation measures described in the BA, NMFS concurs with the IDEQ finding that the subject actions are "not likely to adversely affect" designated critical habitat for spring/summer Chinook salmon and Snake River Basin steelhead.

Conclusion

Based on this analysis, NMFS concurs with the IDEQ that the proposed action is NLAA Snake River spring/summer Chinook salmon, Snake River Basin steelhead, and their designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the IDEQ, EPA, HUD or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law, and: (1) New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) 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 this concurrence letter; or (3) if a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Please direct questions regarding this letter to Mr. Mark Lacy (541) 975-1167, ext. 227 or Mr. Bill Lind (208) 378-5697.

Sincerely,



WWS

William W. Stelle, Jr.
Regional Administrator

cc: R. Holder – USFWS
C. Colter – SBT
D. Opalski – EPA
T. Wendland - IDEQ
D. Porter – IDC



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to NMFS No: WCR-2015-3171

September 3, 2015

Mike May
Senior Water Quality Specialist
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

RE: Request for modification of the Proposed Action for the Endangered Species Act Section 7 Informal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat City of Challis Idaho Potable Water-line Replacement Project HUC #1706020104 (NMFS No. WCR-2015-3171)

Dear Mr. May:

Thank-you for your letter of August 25, 2015 requesting a modification to the Letter of Concurrence (LOC) issued by the National Marine Fisheries Service (NMFS) dated August 4, 2015, regarding the City of Challis (COC) waterline project to clarify the bore diameter and trench width for the project. As stated in your letter you are requesting two minor changes: the bore diameter for the water line and the trench width.

The original proposed action that was analyzed in the LOC was to replace an existing potable domestic water delivery system in Challis, Idaho. The Idaho Department of Environmental Quality proposed to authorize the COC to install, operate, and maintain the City water system. As stated in your letter, you are requesting the following modifications to the project:

- a) In the Biological Assessment, bore diameter was not specified and we used language from other boring projects we have analyzed in the past, "*the pilot boring would be reamed out to accommodate two conduits (3 or 4 inches in diameter)*". This has now been clarified to be 6 to 8 inches because: (1) The Idaho Rules for Public Drinking Water Systems (IDAPA 58.01.08.542.06) require a minimum water main diameter of 6 inches; and (2) the exact diameter of the main to be installed will be based on hydraulic modeling, but is likely to be 8 inches or larger.

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Department of Environmental Quality
State Water Quality Programs

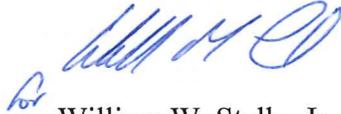


- b) The second modification is regarding trench width. NMFS original LOC stated that “*the bore pits, located at each end of the bore, will be approximately 4 feet deep, 5 feet long, and 2 feet wide*” to “*4 feet wide to accommodate steel trench protection boxes*”. Based on your letter, NMFS understands that these dimensions will not accommodate the trench boxes, a requirement by OSHA to prevent the trench from collapsing on workers as a safety measure. The bore pits will instead be approximately 4 feet deep, with a minimum width and length to support trench shoring during work operations.

NMFS has reviewed the rationale in the original LOC and has determined that these modifications are not likely to result in any effects not previously considered in that consultation. The modification is within the scope of the original scope of the analysis that was completed on August 4, 2015. Therefore, reinitiation of consultation is not required at this time.

Please direct questions regarding this letter to Mr. Mark Lacy (541) 975-1167, ext. 227 or Mr. Bill Lind (208) 378-5697.

Sincerely,

A handwritten signature in blue ink, appearing to read "William W. Stelle, Jr.", with a small blue mark to the left of the signature.

William W. Stelle, Jr.
Regional Administrator

cc:

R. Holder – USFWS
C. Colter – SBT
D. Opalski – EPA
T. Wendland – IDEQ
D. Porter – IDC