
**The Northwestern Band of the Shoshone Nation**
**2575 Commerce Way**
**Ogden, UT 84401**

**Project Title:**

*The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs)*

Project Manager:

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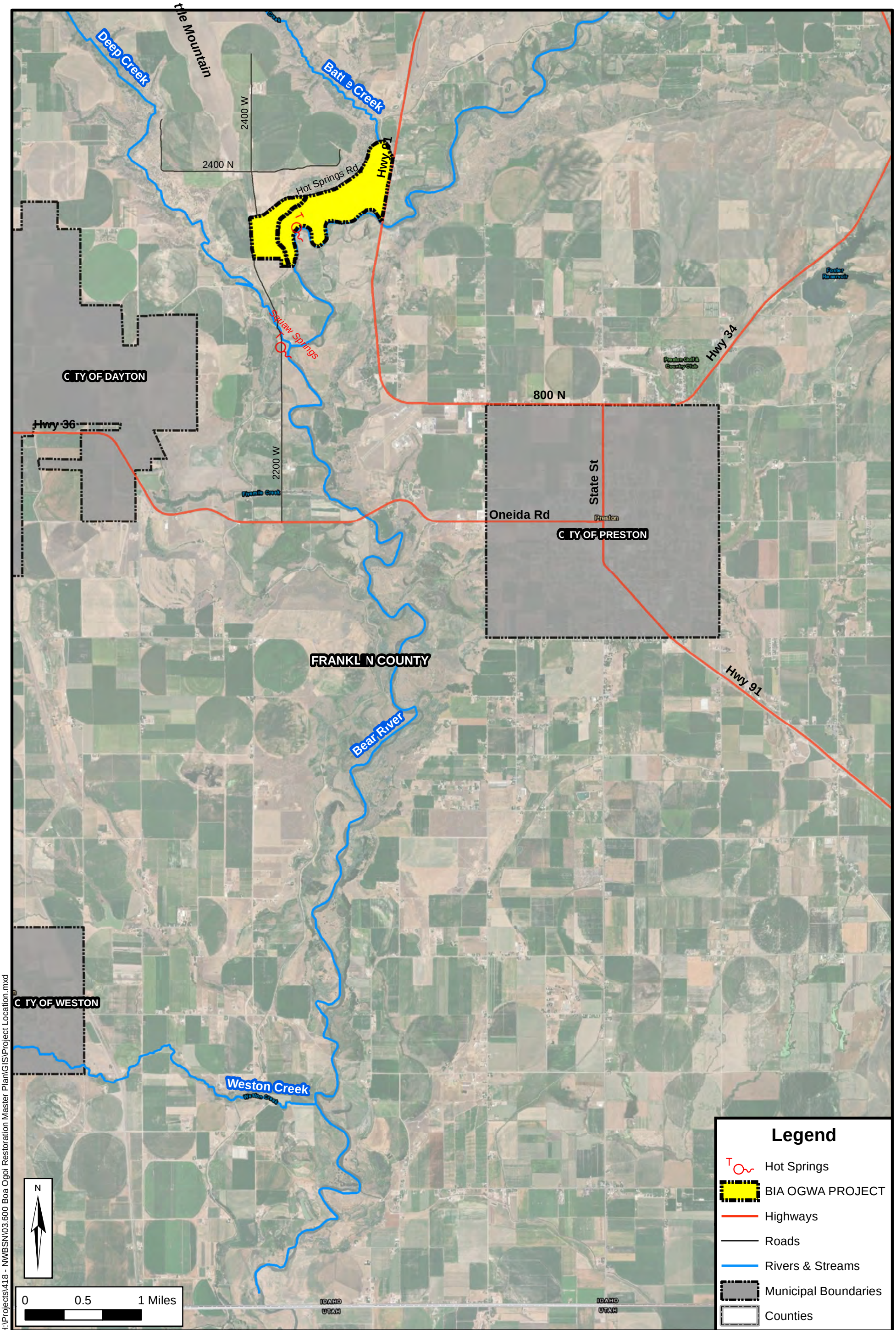


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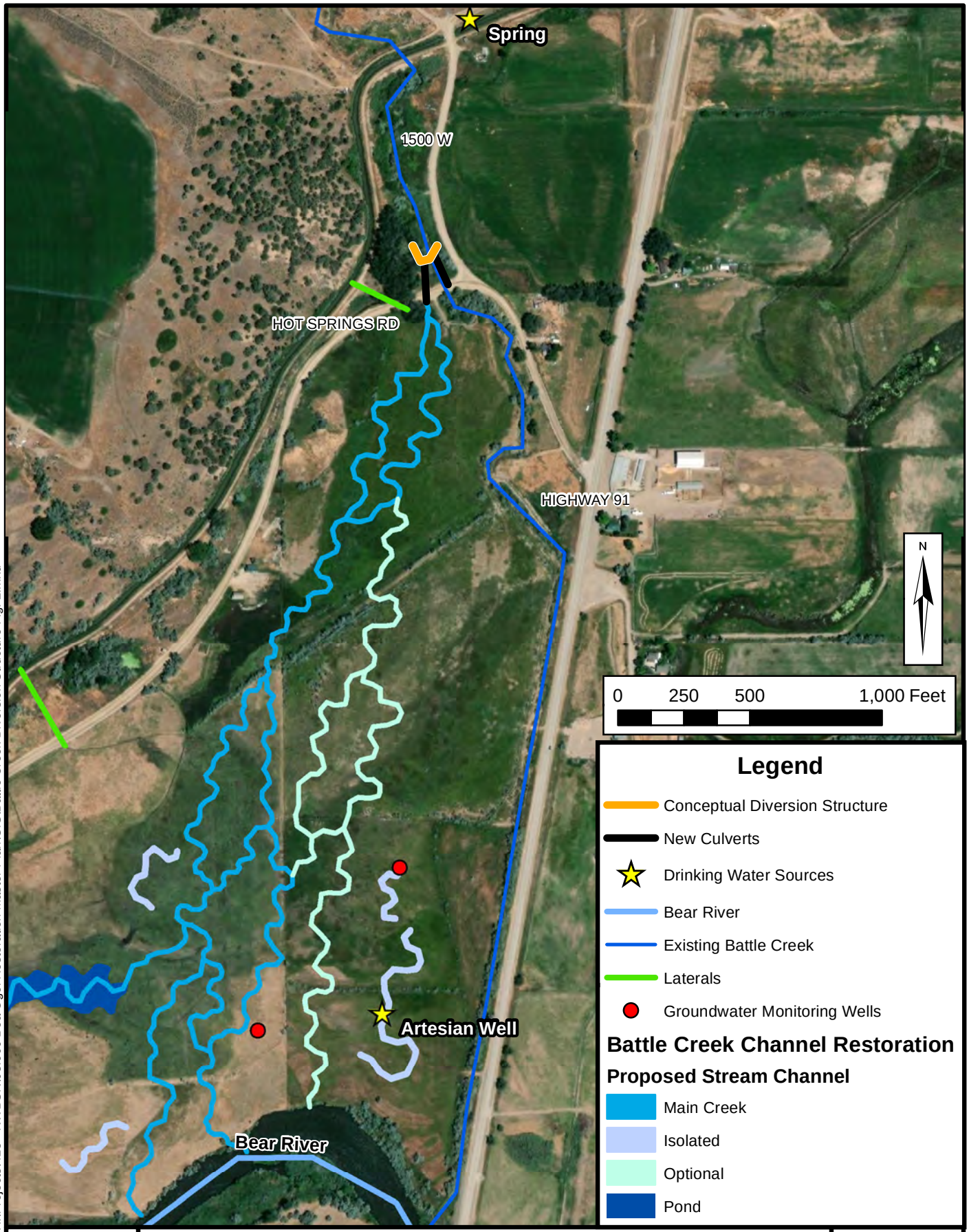
**NORTHWESTERN BAND OF THE SHOSHONE NATION**

**BIA OGWA PROJECT PROJECT LOCATION**

**FIGURE 1**

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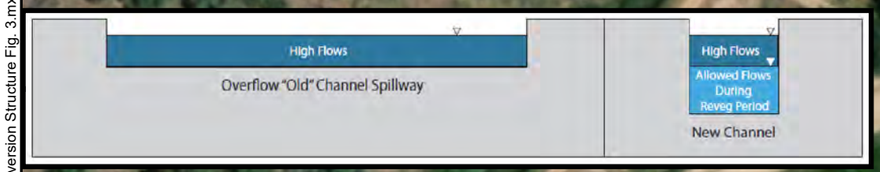
# NORTHWESTERN BAND OF THE SHOSHONE NATION
# BATTLE CREEK RESTORATION

**FIGURE 2**

EXISTING CULVERT AT HOT SPRINGS RD

EXAMPLE OF CONCEPTUAL PROJECT DIVERSION




Concept Design and Notes:
- During "regular" flow periods, a l streamflow is delivered into the new channel because the invert is lower than the old channel spi lway.
- During high flow events, the majority of the "exce s" streamflow and suspended sediment is delivered into the old channel, because of the wide spi lway entrance.
- The relative flow distribution is roughly determined by the width ratio between the entrances, for example:
if the spi lway entrance width is 3 times the width of the new channel entance, 1/4 of the "excess" flow enters the new channel
and 3/4 enters the old channel.
- The spi lway is typica ly quite steep on the downstream side and can be a free drop onto a concrete apron or a more gradual slope.
It should allow unrestricted flow into the old channel and avoid backwater effects.
- Following vegetation establishment, if more flow is desired in the main channel, the overflow can be raised using boards or plates

1500 W

HOT SPRINGS RD

HIGHWAY 91

N

0 50 100 200 Feet

**Legend**

- Conceptual Diversion Structure
- New Culverts
- Existing Battle Creek

**Battle Creek Channel Restoration**

- Main Creek
- Isolated
- Optional
- Pond

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**NORTHWESTERN BAND OF THE SHOSHONE NATION**
**BEAR RIVER MASSACRE SITE RESTORATION**

**BATTLE CREEK RESTORATION**
**DIVERSION STRUCTURE LOCATION**

**FIGURE 3**

# I. EXECUTIVE SUMMARY

The Northwestern Band of the Shoshone Nation 12/07/2021
2575 Commerce Way
Ogden, Utah 84401 Category A – Federally Recognized Indian Tribe

The Northwestern Band of the Shoshone Nation (Tribe) is a federally recognized Tribe committed to developing, managing, and protecting tribal water and related resources. In conjunction with Trout Unlimited, Utah State University (USU), Sageland Collaborative, Utah Nature Conservancy, Bonneville Environmental Foundation (BEF), and PacifiCorp's Bear River Environmental Coordination Committee (ECC), the Tribe will be improving stream channel restoration along the Battle Creek Tributary, near the Bear River Massacre Site in Franklin County, Preston, Idaho. Tribal members are the direct descendants of the Bear River Massacre on January 29th, 1863. The Bear River Massacre is considered one of the largest massacres of indigenous people in North American history. The Tribe purchased this property in January of 2018 to finally protect and memorialize those lives lost there and to share Tribal cultural with the world. This proposed project addresses the *"Watershed management or restoration projects benefitting ecological values that have a nexus to water resources or water resources management"* section of the EWRP announcement. Currently, Battle Creek is impaired and along the Tribal corridor below Hot Springs Road, Battle Creek has been channelized into an open earthen ditch that carries a lot of sediment to the mainstem of the Bear River. The abundance of natural resources at the confluence of Battle Creek and the Bear River was vastly different before fur trappers and settlers arrived in Cache Valley. The Massacre site is located on the northern bank of the Bear River, in Franklin County, Idaho.

Over the past 160 years the riparian habitat along the Bear River and tributaries have become severely degraded due to agricultural production. Lower Battle Creek has been pushed against Highway 91 and straightened. The Bear River is listed as an impaired waterbody under Section 303(d) of the Clean Water Act. The goal of the project is to restore fluvial and biological processes of the riverine ecosystem in lower Battle Creek to function similarly and evoke the ethos of pre-1863 site conditions, which as an added benefit are more resilient to disturbance and climate change. The Project will (1) provide an existing conditions summary of the Battle Creek channel and riparian corridor, (2) replace the channelized section of Battle Creek with a natural form with braids and meanders recreated on tribal land, (3) include design and construction of a concrete diversion structure and a fish passable 3-Box culvert needed for downstream stream alteration and floodplain restoration, and (4) include installation of beaver dam analogs (BDAs) along Battle Creek (5) The project will also include removal of invasive species and bank stabilization on the Bear River mainstem. The restoration of an active floodplain, including beaver dams and wetland marsh habitats will be a huge sink for sediment and nutrients, significantly reducing turbidity, sediment, and nutrient loads and along with increased flows and lower water temperatures, the project will improve overall water quality in Battle Creek and in Bear River. Creating these conditions will be ideal to reintroduce the Bonneville Cutthroat Trout to Battle Creek, which is a major goal of the project, and is one of the historical beneficial uses of Battle Creek. This project is not located on a federal facility.

For Tribal information about the project site, please click here: https://vimeo.com/511233223

# II. TECHNICAL PROJECT DESCRIPTION

## 1. DESIGN AND INSTALLATION OF DIVERSION STRUCTURE

The Tribe, in collaboration with and funding from Trout Unlimited and the ECC, began work in October 2021 on the feasibility design and planning for a new diversion structure and culvert at the Hot Springs Road crossing to support downstream stream, floodplain, and riparian ecosystem restoration on lower Battle Creek. The design study is looking at the best size and appropriate location of this structure. The concrete structure will be designed to direct all low flows into the proposed restored section of Battle Creek while allowing flood flows to pass down the existing channel until construction is completed and vegetation is established in the restored section. It will also include installation of a Supervisory Control and Data Acquisition Automation (SCADA). This structure will eliminate the need to divert water into the Battle Creek Canal. The Tribe will solicit proposals for construction installation of the diversion structure. The structure will be placed at Hot Springs Road at a different location and at a higher elevation to reconnect lower Battle Creek with its floodplain and restore natural fluvial processes and native vegetation communities on tribal lands. Numerous permits will need to be obtained for the project, including permits to install the structure under the road to be secured from the Franklin County Roads Department. See attached Figures 1 – 3 for project location, diversion structure location and details.

## 2. BOX CULVERT INSTALLATION (2)

A major goal of Battle Creek restoration efforts is to improve fish habitat. Along with partners, the Tribe will contract design and installation of a new box culvert to assist in native fisheries management in the restored reach and in the upper watershed. The current culvert sitting in the Battle Creek system is an eroding, broken down, concrete structure that provides no fish passage or water management. This structure will need to be removed by the construction contractor and cleaned out of the canal. Designs of the new culvert will occur in 30%, 60%, 90% phases, and will be finalized by the group after engineering certification. A construction contractor will be selected to form and install the 3-sided box culvert with a bridge and a natural bottom for installation in the Battle Creek system. The location of the culvert will be determined after engineering and placement of the diversion structure.

## 3. INSTALLATION OF BURIED PIPELINE FROM SPRING WATER

The ECC design study includes planning for the installation of a buried pipeline from spring water right the Tribe owns, approximately 1,000 linear feet Northwest of the Battle Creek Tributary. Design for the spring water pipeline is in collaboration of the Tribe, ECC and Trout Unlimited. Construction contractors will be hired to create the lateral pathway and bury PVC pipe from the spring water right to the head of the Tribe's riparian corridor into Battle Creek. The Project will design a natural water feature for the spring water to enter Battle Creek which is located at a higher elevation and gravity flow will be used to bring the water back into the system.

## *4. Piping of 2 Open Ditch (earthen) laterals*

This is a new action which proposes to purchase and install 2 headgates, and a combined 580 linear feet of 12" PVC Conveyance Pipe. The project would also purchase and install double of the following: Weir Plate & Gage, Drop Structure,120 Linear Feet RCP Casing, Rip/Rap and Fencing. The lateral piping will follow the current channel or be moved slightly to a disturbed area of the property (a canal road). Designs of the new culvert will occur in 30%, 60%, 90% phases, and will be finalized by the group after engineering certification. A construction contractor will be selected to dig the new laterals, lay the PVC pipeline system, install the headgates, gage and structure at the new diversion point and will connect with the new laterals to the diversion structure proposed.

## *5. Stream and Riparian Ecosystem Restoration of Lower Battle Creek*

Lower Battle Creek is currently channelized and straightened for approximately 1 mile on the Tribe's property. We propose to restore stream channel complexity, flood plain connection, riparian/wetland vegetation, and fisheries habitat using active and process-based approaches. Revegetation of native plant communities requires a detailed revegetation plan that works with native species recruitment processes and based on post-project hydrologic and hydraulic conditions and dynamics. Comprehensive restoration plans are being developed by The Tribe, Trout Unlimited, The US Fish and Wildlife Service, USU, and Sageland Collaborative. The restoration involves a series of steps that include: (I) Pre-construction and long-term weed treatment, and removal of undesirable vegetation, (II) excavation of project features including stream channels and ponds, and on-site use or off-site hauling of spoil materials, (III) growing and securing native species from local cuttings, local seed, and transplanting entire trees and shrubs during construction, (IV) seeding and mulching disturbed areas, (V) initial and long-term installation of native plants either as bare root stock or containerized plants, and (VI) project irrigation. Each of these activities will be described briefly in the following sections.

a) Weed Treatment and Removal of Undesirable Vegetation

Before any restoration project begins, substantial effort should be devoted to treating weeds within the project area. Some Russian olive and phragmites treatments on Battle Creek have already begun. The proposed style of restoration involves use of large equipment and usually includes substantial disturbance of existing surfaces. If weeds are present in large numbers, the disturbed areas will be far more difficult to revegetate successfully with the appropriate native vegetation. Aggressively treating weeds around the project site before and during construction will reduce weed seed on disturbed soils and improve the chances of revegetation success. Although existing pasture grasses may not necessarily be invasive, they do provide a difficult barrier for desired native vegetation to establish upon. Thus, selective removal of existing pasture grasses and re-seeding/planting with native species will be used to promote establishment of desired grasses, forbs, and shrubs within the project area. This can be accomplished by removing the existing surface layer of grass and sod and hauling it off-site or using it elsewhere on the project.

b) Excavation of Project Features and On-site or Off-site Hauling of Spoil Materials Basic Equipment Needs

Excavation of restoration projects at the scale of the proposed project design requires the use of large excavation equipment including, track-hoes, bulldozers, 6-wheel drive heavy haul trucks, front end loaders, etc. Track-hoes are typically the best tool for excavating most of the complex

of channels and ponds because they provide the reach and control needed to cut intricate features while moving on tracks that allow access to wetter areas. Experience with restoration at the scale of this project would suggest that a CAT 320 or equivalent track-hoe would be adequate for the proposed work. Hauling of excavated material can be accomplished using 6-wheel drive haul trucks in areas where they can operate. Trucks like a CAT 725 or equivalent provide a large capacity and can operate in most areas so long as the conditions are not overly muddy. In wetter areas, temporary haul roads can be constructed and removed after excavation is complete. Bulldozers can be used to create project features that are large and that do not require intricate shaping. They can also be used to remove surface layers of undesirable vegetation. A CAT D6 or equivalent is typical for this type of work, and one with wide tracks is recommended for wetter areas and where muddy conditions dominate.Equipment that may be used also includes a front-end loader for handling materials on site or for delivering material to the track-hoe, a water truck for keeping down dust during hot or dry periods, fuel, and service trucks for daily maintenance, etc. Excavation of channels in and around existing rivers and other high groundwater areas requires sequencing of excavation activities from downstream to upstream. By beginning excavation at the downstream end and working up the channels, groundwater that seeps into the excavation can move downstream and away from the working area. This means that crews can work in much drier conditions than would otherwise be possible. Pumping at times will be necessary. Best management practices will be used to prevent excessive sediment from leaving the project area. A Storm Water Pollution Prevention Plan (SWPPP), pumping plan, and inspection schedule will be developed as part of the permitting process. Spoil material generated during excavation can be either used somewhere nearby on site or hauled away from the project area using haul trucks. Using materials on site and minimizing haul distance is extremely helpful because trucking costs can be quite high. In some cases, the existing sod can help equipment to operate more effectively, so sod removal can be completed before excavation proceeds, or it can occur after other excavation is complete if soft ground conditions are a concern.

c) Transplanting of Nearby Plant Materials

During excavation, local plant materials will be transplanted where possible. If large willow clumps with root balls or other desirable plants are available for transplanting, that work will occur as the excavation proceeds. A track-hoe will be used to harvest entire plants and relocate them to sites within the restoration area. These plants are often especially important because they are larger in size and take hold more rapidly than cuttings or seed plantings, providing early vegetative structure for the restoration.

d) Seeding and Mulch

Following construction and soil preparation, large areas of future riparian and wetland habitat will be seeded with an appropriate mix of native grasses, forbs, and shrubs and trees. In larger contiguous areas a field drill will be used for seeding, broadcast seed and harrow using a tractor or ATV, and in smaller areas hand seeders will be employed. Following seed application, applying mulch will improve seed gemination and survival, which in turn helps keep weed growth to a minimum.

e) Installation of Native Plants

A revegetation plan will provide planting areas and numbers by species and container size for a variety of native species. lant materials will be raised locally and/or at a local nursery, using locally gathered genetic stock, and installed at appropriate elevations for expected future hydrologic and soil moisture conditions, after large scale work is completed. The sidehills away

from the construction area will be planted as soon as possible with cottonwoods and shrubs. These areas will be fenced temporarily to prevent cow damage.

f) Irrigation

We plan to irrigate the floodplain restoration site for one- or two-years following excavation to help establish desirable vegetation, prior to allowing for significant overbank flooding. At the project restoration site, this irrigation could easily be accomplished while still allowing larger runoff events to flow down the existing channel. Giving the vegetation time to germinate and mature over the first year or two without the threat of extreme flooding will increase the odds of successful community establishment.

## 6. *Russian Olive Removal and Technical Oversight:*

The Tribe will use historic aerial photography and pre-aviation written accounts of the site conditions to develop vegetation restoration goals and mimic pre-1863 conditions as closely as possible. A vegetation inventory and community map of the project area was recently accomplished. High-resolution drone photos and LiDAR data with ground truthing was used to determine the exact areas of Russian Olive and all other visible noxious weed removal. The project will remove 15 acres (about twice the area of the Lincoln Memorial Reflecting Pool) of invasive species, making space for desirable Riparian/Wetland Fremont cottonwood, willow, bulrush/cattail, and aquatic habitats.

A. Frill cutting—this method maximizes the acreage treated while maintaining vertical habitat and overall site occupancy. Partners commonly implement this approach where the goal is to maximize treatment area while waiting for the ability to come back through, remove material and reestablish native species. This approach is also used when site access and biomass removal is difficult and or hazardous. Depending on the terrain, access, and objectives a typical crew (as standardized above) can treat from 5-15 acres.
B. Cut stump with piling/chipping approach to removed biomass—this approach is the most time-consuming approach given the intense attention that removed biomass receives. The tree is cut, herbicide applied to the stump, and the biomass is bucked, for firewood or chipping and limbed for either burn or habitat piles. Depending on the terrain, access, and objectives a typical crew (as standardized above) can treat up to .5 acres (about four times the area of a basketball court).
C. Cut stump with lop and scatter approach to removed biomass—this approach maximizes the amount of work done by a standardized crew (defined above) by reducing the amount of time spent on removed biomass. The overstory is removed and then lopped to a certain size and scattered on the ground. Depending on the terrain, access, and objectives a typical crew (as standardized above) can treat up to 1 acre (about half the area of a Manhattan city block).

Frill cut and stump cut treatments will require herbicide application.

Several methods will be used to destroy the Russian olive biomass piles: The Tribe and its partners will use the methods of biochar, chipping, using the dried trees to assist in creating rip-wrap along the river corridor, drying for up to 1 year and burning on site, drying for up to 1 year and

donating the wood to the local community for firewood. These methods are part of the research that is being conducted by USU. In August 2021, the Utah Nature Conservancy donated $25,000 to the project for Russian Olive and invasive species removal, and the work was also completed in August 2021. The funding allowed for 5 acres (about twice the area of a Manhattan city block) of Russian Olive and other invasive species to be removed from tribal land on the Upper Battle Creek North tributary. The work was performed by the Utah Conservation Corps (UCC) from USU.

## 7. *Installation and Operation of flow gauges, weather stations, and water quality sensors.*

This project is designed as a catalyst for the Bear River watershed restoration spanning from our site where the creek enters Bear River upstream 99 miles below existing small headwater reservoirs. Planning has started for controlling sediment sources, re-introducing beaver, and restoring the riparian corridor upstream of the project in a watershed with actively head-cutting channels and grazing on unstable slopes. There are often >100 NTU difference in turbidity in the upper watershed recently established monitoring sites located upstream of the project area. In researching the area for water quality, water flow and water temperature etc., the Tribe has contacted the Bear River Commission, Idaho Department of Water, Idaho Department of Environmental Quality and has learned that there have never been any studies or data collection in Battle Creek. It has been ungauged. Work for this project would include installing and operating flow gauges, weather stations, and water quality sensors to provide continuous baseline and post-restoration conditions. This data will be used to quantify streamflow, evapotranspiration, water temperature, and sediment/nutrient load reductions. Operating would include analysis and reporting costs. The project will include data collection related to any water quality monitoring required for project permits. Baseline data collection will include a 3D site model of topography (drones & surveys), models identifying channel restoration options & mitigation of flooding issues; installation of 4 water temperature & Mayfly sensors and an app to track real-time streamflow and temperature data. Data will be downloaded and reported quarterly initially and moving to annually after the restoration has been completed. The Tribe and partners will develop a monitoring program & adaptive management Plan. Monitoring activities include tracking streamflow, water temperature, turbidity, conductivity, air temperature and other applicable weather data. The Tribe is currently performing limited baseline monitoring of Battle Creek temperature, turbidity, dissolved oxygen, and pH, along with limited project site groundwater monitoring. This project expands that effort and provide valuable insight into restoration design, implementation, and results. Sensor installation will be done by the Tribe with help from Trout Unlimited and USU, with funding provided from Trout Unlimited. The Tribe, in collaboration with its contractors, USU and Trout Unlimited, will use funding provided by Trout Unlimited to begin tracking streamflow, water temperature, conductivity, and sediment and nutrient loads. This data will help us assess progress towards improving water quality and on-site water storage. Slowing the speed of water moving across the site and spreading the water out will make the site better able to support aquatic life and wetland/riparian habitats and native vegetation assemblage which are more resilient to anticipated increased duration and intensity of heat waves, increased precipitation variability and reduced winter snowpack associated with climate change.

## *8. Beaver Dam Analogs*

- Idaho Joint Stream Alt Permits
- Contractor to install fence posts
- Volunteers to weave BDAs – Lead by Sageland Collaborative (In-Kind Donation)

The Tribe will also work with Sageland Collaborative, providing in-kind costs, to determine the number and the appropriate locations of beaver dam analogs (BDAs) and post assisted log (PALs) that should be constructed on the Battle Creek North Corridor. The restoration strategy will focus on structural additions such as beaver dam analogues or post-assisted structures to Battle Creek following the guidelines of "Low-tech Process-based Restoration of Riverscapes" (Wheaton et al. 2019). We will build beaver dam analogues from untreated wooden fence posts pounded into the stream bed with hand tools or a hydraulic fence post pounder. We will weave in native vegetation and mud into the posts. We will construct the structures during fall to avoid impacts to nesting birds during the breeding season. We will monitor stream condition and expect to see an increase in water quality, hydrogeomorphology, fish and aquatic habitat, riparian vegetation, and terrestrial wildlife habitat. The Tribe is currently conducting an ongoing study of the existing fish community within Battle Creek. This baseline study will be compared with post construction conditions to determine the effects of the project on the existing fish community. Volunteers from Sageland Collaborative, USU and the Tribe will weave and place the BDAs in the corridor. Project partners will work with contractors to install fence posts and structures for the BDAs. The BDA locations and orientation and stabilization plans will be designed and located at the direction of the hydrologists and ecologists that the Tribe has contracted to assist with the overall restoration project. Placing BDA structures in the upper watershed will reduce the sediment supplied to the lower reach over time, improve water quality in Battle Creek, and reduce sediment and nutrient loads to Bear River. Additionally, placing structures in the upper watershed will store more runoff, slow the release of water, and increase base-flow conditions in the lower watershed. This will allow for a more consistent supply of water throughout the summer and attenuate the highest peak flows. The Beaver Restoration Assessment Tool (BRAT) has already identified several locations for the reach between Hot Springs Road and the mainstem Bear River and classified it as currently supporting 2-8 dams per mile. BDA projects will be designed at least 9-12 months ahead of implementation to acquire cultural clearances and environmental permitting. Low-tech stream restoration techniques such as BDAs typically require a Joint Agency Permit between U.S. Army Corps of Engineers and Idaho Department of Water Resources, and Idaho Department of Lands (NWW Form 1145-1/IDWR 3804-B). Partners will complete this form at least 6 months ahead of implementation to leave time for agency staff to review and provide comment on the project.

## *9. Revegetation - Adaptively Managing Vegetation During a Changing Climate*

The Tribe with collaboration from contractors, Trout Unlimited, and USU will co-produce a climate adapted stewardship plan with tribal land managers for implementing climate-adapted ecosystem restoration at Sowo Gahni. This site of tragedy will be transformed into a place of healing and learning focused on social-ecological resilience and reverence expressed with a restored landscape. Our learning goal is to weave Indigenous, Local and Western scientific knowledge to regenerate habitat for endemic species central to Tribal culture. The Tribe and

project collaborators, USU and Trout Unlimited, will begin to braid indigenous with Western scientific knowledge to inform land stewardship. The tasks will include collecting records of grass and riparian meadow species documented by early settler colonists, and from plant diaries created by the Tribe. The Intermountain Planting Guide will be one resource used to select riparian vegetation suited to project site.

Russian Olive and weed treatment technical and construction oversight.

This task involves re-establishing native vegetation communities to conditions that existed prior to fur trapping and settlement in Cache Valley. To successfully implement restoration plans, a significant amount of technical and construction oversight will be required, especially in areas that have become infested with noxious weeds. The Tribe and its contractors will create planting and seeding plans for native species revegetation and specify what quantities are necessary to accomplish revegetation objectives. Seed mixes and plantings will also be developed for upland, riparian, and wetland habitats. Oversight will be provided for all planned restoration activities. Also included, bird monitoring, and put-up temporary bird nesting structures etc. to provide habitat until the trees get bigger. Contractors, during the life of the project will monitor the plant success rates, water quality testing, wetlands monitoring all during the life of the project, and will continue monitoring the success rate of removing invasive species such as Russian Olive, phragmites, and thistle; and oversight of weed control during the project. The Tribe, with USU, and consultants will create a tribal nursery, on the project site, to propagate native plants to be used over the site. The project will take cuttings from plants that are already growing in the area, and replant them on the nursery sites to allow them to grow in native soil before being transferred around the project area. Seed mixes and plantings will be developed for upland, riparian, and wetland habitats. Expected plantings would include Red Willow, Coyote Willow, The Sego Lily, Sage and Choke Cherries, Milkweed, Dogwood, Golden Currant, Skunk brush Sumac, Alder, Birch, Cottonwood Trees, along with a variety of grasses, forbes, sedges, cattails, and rushes in wetlands and along the streambanks. The Tribe would hire a landscaping company to do the plantings, with supplemental seeding and planting by volunteers. The vegetation inventory has already been completed by the Tribe, and this will help guide the revegetation plans of the site. The revegetation will center around native plantings with cultural value to the Tribe. The project will need to fence around on-site plant nurseries and other sensitive trees & riparian habitat for protection from grazing. In the United States Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS) Guide reports that, “Pole cuttings (large diameter unrooted stems) of shrub type willows are recommended for most plantings from water line to mid-bank. Pole cuttings of tree-type willows and cottonwoods are recommended on upper-banks and floodplains where the water table is deep. Pole cuttings provide an effective means to reach saturated soils and establish a high concentration of roots for that portion of the stem within the moist zone. Pole cuttings have the additional advantage of being inexpensive and easy to harvest and store. They are also easy to plant. High mortality can occasionally occur, but this is somewhat offset by lower cost, ability to rapidly plant large numbers, and ease of replanting the following year.” (Hoag 2007). The protocol for gathering Willow and Cottonwood plantings is outlined in the guide written by Lezberg & Giordanengo (2008). The protocol is to harvest cuttings from nearby sites with desired phenotypes. After harvest, bundle and tag cuttings by species, size, date, and site. Keep bundles cool, moist, and shaded during transportation and on-site storage. Before the planting, soak willows in water for 5-14 days to increase speed of adventitious root formation. Willows can be soaked in buckets or a stream.

Lezberg & Giordanengo recommend well-oxygenated water. 50 to 80% of the length of the cutting should be in contact with water while soaking. For disturbance-adapted willows (i.e., sandbar willow, *Salix exigua*), and under hydrologic conditions that are highly favorable to the establishment of willow cuttings, pre-soaking may not be necessary. More revegetation details will be included in the revegetation plan. During the summer of 2021, the Tribe conducted a vegetation inventory of the project area and created a vegetation map and report that will be used as a guide to the revegetation activities taken.

Vegetation Mapping Video
https://vimeo.com/649301105
Password: **centerstar**

## 10. BANK STABILIZATION

The Bear River mainstem riparian corridor slopes are currently unstable, barely accessible, and infested with noxious weeds. The construction restoration of 1,400 linear feet of riparian corridor will also include restoration of the Tribe's the sacred hot springs. The hot springs are located on the banks of the Bear River mainstem on steep slopes next to a heavily grazed field. The project will use bio-engineered techniques such as plantings, soil lifts and coir logs to stabilize areas of erosion or new construction and revegetate eroding slopes and/or riverbanks by addressing the soil structure, bank slope, drainage, and vegetation cover. Removal of Russian Olive and other invasive species will need to be performed during bank stabilization. The first method to stop riverbank erosion will be re-establishing natural vegetation. Natural vegetation such as, cottonwood trees and willows improve stability on a riverbank. The plants form deep root systems which help to hold soil in place and protect it from being washed away. Plants can also absorb the shock of heavy rainfall. Fencing will be installed along the Bear River mainstem on the tribal corridor to prevent cattle grazing near the riverbanks and eliminate cows migrating to the river and back. Soil lifts will be constructed to stabilize some banks using BIO-D block coir fabric, and willow cuttings and plantings. This vegetation will also improve bird and wildlife habitat along the banks of the Bear River.

## 11. FISH RESTORATION AND SAMPLING STUDY

The Tribe conducted a baseline Battle Creek fish sampling study in August 2021.
To our knowledge, there have been no previous fisheries sampling conducted on Battle Creek, and thus this survey will furnish important baseline data to facilitate future fish community comparisons after habitat restoration enhancements to the aquatic ecosystem are complete.

### STUDY AREA

The Project Area (hereafter, Battle Creek) is located approximately 3 miles northwest of the City of Preston in Franklin County, Idaho. Fisheries surveys were conducted on Battle Creek from the Bear River confluence, upstream to just above the US Highway 91 crossing north of Winder, Idaho. Table 1 and Figure 1 show the arrangement and locations of reaches 3, 4, 5, 6, 8, 9, and 10, which are the seven reaches that were sampled for this study to represent baseline available habitats. The reaches were spaced longitudinally throughout the system to represent the current habitat conditions.

**Table 1. Fisheries sampling reaches and GPS coordinates of Battle Creek, ID (WGS 84), August 2021.**

| REACH | UPPER GPS COORDINATES | | LOWER GPS COORDINATES | |
|---|---|---|---|---|
| 3 | 42.11.992 | 111.55.396 | 42.11.959 | 111.55.428 |
| 4 | 42.11.794 | 111.55.313 | 42.11.767 | 111.55.334 |
| 5 | 42.11.238 | 111.56.330 | 42.11.198 | 111.56.358 |
| 6 | 42.10.277 | 111.56.564 | 42.10.232 | 111.56.582 |
| 8 | 42.08.765 | 111.54.835 | 42.08.719 | 111.54.857 |
| 9 | 42.08.620 | 111.54.807 | 42.08.592 | 111.54.763 |
| 10 | 42.08.138 | 111.54.793 | 42.08.075 | 111.54.810 |

## METHODS

Fisheries surveys were conducted August 23–25, 2021, at seven sampling reaches. Reach length was calculated by multiplying the approximated average stream width by 40 (Peck et al. 2006). A minimum reach length of 100 m (about the height of the Statue of Liberty) was used when the average width of the stream multiplied by 40 was less than 100 m (about the length of a football field). For this survey all reaches were determined to be approximately 100 m in length. Additional surveys are planned as described below, to gather a data baseline of aquatic life. Five Gee minnow traps were deployed at each sampling reach and allowed to fish overnight. Deployment and retrieval times were noted for catch-per-unit effort (CPUE) calculations. Minnow traps measured 0.22 m in diameter by 0.42 m long with 6.0 mm mesh and were deployed in a variety of representative habitats within each reach. Habitat types (riffle, run, pool, slack water, etc.), depth (cm), primary and secondary stream substrates, and fish cover was noted at each minnow trap location. Electrofishing was conducted at each reach using a Smith-Root LR-24 backpack electro fisher. Fisheries sampling consisted of electrofishing from downstream to upstream using a two-pass depletion method (Zippin 1958). Before each electrofishing event the appropriate voltage, duty cycle, and frequency were tested for effectiveness and adjusted as needed to ensure effectiveness while not harming the fish. Fishing consisted of one person operating the electro fisher and one or two people netting fish, depending on available help and habitat conditions. As fish were netted, they were placed in a holding bucket containing fresh stream water. Once electrofishing was complete, the time fished was recorded for CPUE calculations. All fish were held until all sampling was complete to ensure individuals were not recaptured during the second pass to calculate depletion population estimations in the reaches sampled (Zippin 1958). Approximately 50 fish of each species were measured for total length (TL) (measured in mm). After the first 50 fish were measured, a sub-sample of approximately 10 fish per species were measured per sampling reach. All fish captured, regardless of capture method, were released unharmed at their point of capture. (See report in attachments)

# III. ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

The UC Region's Provo Area Office Environmental Compliance Group has working with the Tribe and interested parties in completing all in cultural tasks for federal permitting requirements. This consultation has led to collaboration with the US Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the Idaho State Historic Preservation Office (SHPO).

NWBSN anticipates that a Clean Water Act Section 404 Permit/401 Certification will be required to obtain approval to perform restoration activities within existing wetlands. As preparation for this project the Tribe applied for and received two Wetlands Delineation permits from the US Army Corps of Engineers, in July 2020 and September of 2021. The work for this Delineations were performed prior to July 1st, 2021. Stream Alteration Permit will also be obtained from the Idaho Department of Water Resources. Given that one of the primary purposes of the project is to restore degraded wetlands and important wildlife habitat, NWBSN does not anticipate opposition to the issuance of these permits. The Tribe has a lot of consultation with the SHPO and State of Idaho Archeologist, to satisfy the requirements of Section 106 of the National Historic Preservation Act. Upon final approval from the SHPO, any historic or prehistoric sites or artifacts that could be impacted by the project will be documented, preserved, and displayed at the NWBSN's proposed Cultural Interpretive Center, which will be located near the site. Due to the extremely sensitive and sacred nature of the project site, the Tribe will contract with a private archeological firm to assist in obtaining the required permits. The contracted firm will also be asked to be on location every day during construction. The archeological firm will watch every dig and assess the site as construction progresses, the anticipated time for the firm to be on site is 4 months. Also, the project would like to request additional assistance, from the Reclamation cultural resources staff to spend more than normal time reviewing the site during construction. Funding will be added to this proposal for these costs.

# IV. EVALUATION CRITERIA

**Sub-Criterion A.1—Benefits to Ecological Values**

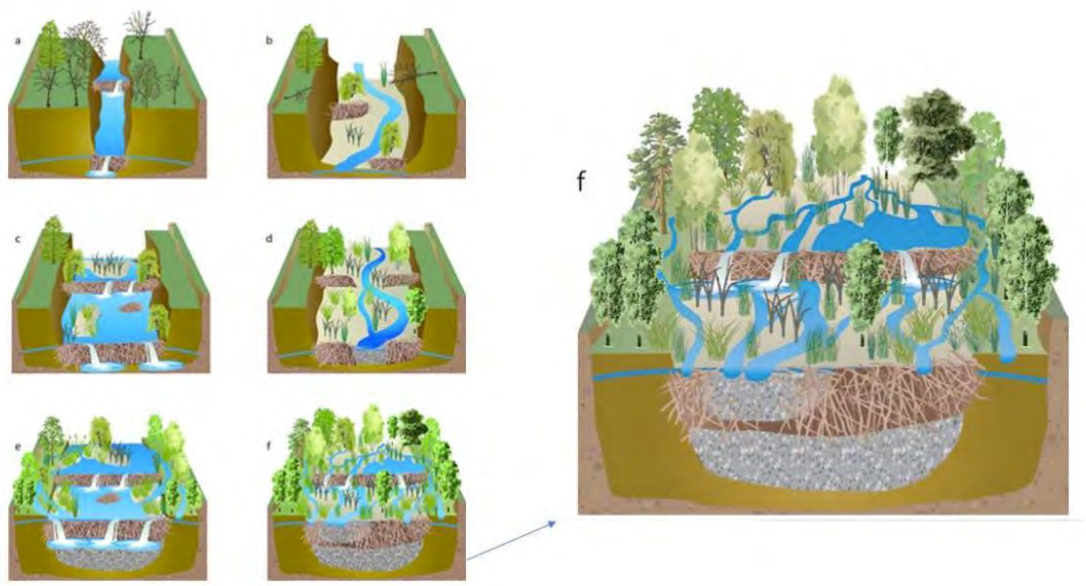
- *Please explain how the project will benefit ecological values that have a nexus to water resources or water resources management, including benefits to plant and animal species, fish and wildlife habitat, riparian areas, and ecosystems that are supported by rivers, streams, and other water sources, or that are directly influenced by water resources management.*
- *in your response, please identify the specific ecological values benefitted and how those ecological values depend on, or are influenced by, water resources or water resources management.*
- *Please also explain whether the project will increase water supply reliability for ecological values by improving the timing or quantity of water available; improving water quality and temperature; or improving stream or riparian conditions for the benefit of plant and animal species, fish and wildlife habitat, riparian areas, and ecosystems, or through similar approaches.*
- *If the project will benefit multiple water uses (i.e., benefits to ecological values AND benefits to other water uses, e.g., municipal, agricultural, or tribal water uses), please explain how the project benefits other water uses.*

**Response:**

Over the past 160 years the riparian habitat along the Bear River, and the river itself, have become severely degraded due to settlement practices and agricultural production. In many areas the native vegetation has been overrun with non-native, invasive species such as Russian olive, phragmites, and thistle. These invasive plants have little or no habitat value for native terrestrial, avian, and aquatic wildlife. They also provide little, or no water quality benefits to functions such as nutrient uptake and sediment retention. The Bear River is listed as an impaired waterbody under Section 303(d) of the Clean Water Act. The Battle Creek channel is heavily incised between two to over ten feet incised and lacks structural complexity for aquatic habitat and floodplain connectivity. Associated aquatic, wetland, riparian, and upland habitats have been converted from willow thickets, cottonwood trees, and beaver dam complexes to a Russian olive lined straight channel, fenced pastures, farm fields, and overgrazed conditions. In many areas the native vegetation has been overrun with non-native, invasive species such as Russian olive, phragmites, and thistle. Battle Creek is a fourth order tributary to the Bear River, with a drainage area of approximately 62 square miles (about twice the area of Manhattan)

and a mean annual flow of 74 cubic feet per second (cfs) (Hortness &Barenbrock 2001). Peak flows occur between May and June on average and have a twenty percent flow duration of approximately 210 cfs (Hortness & Barenbrock 2001). Through process-based restoration, the channel may be altered to increase habitat suitability and connectivity. The physical site conditions between where Battle Creek crosses the West Cache Canal and where it enters the Bear River is the best location for initial restoration efforts. Riparian areas along the Bear River need Russian Olive removal and the restoration of Willow and Cottonwoods trees. There are multiple irrigation ditches that have been dug off the channel that move water to irrigate adjacent pastures. These pastures in the river bottom zone are currently a mix of cultivated pasture grasses for grazing. The goal of the project is to restore the area to the natural conditions that existed prior to settlement in 1863. The riparian area and emergent wetlands of the site are currently threatened by Russian Olive which densely lines the riparian corridor. Currently, the possibility of restoring Cutthroat Trout habitat is restricted by Battle Creek drainage hydrology and water quality. By returning the river to a state of natural disturbance using process-based restoration we can create conditions that favor native species over Russian Olive. Battle Creek provides an opportunity to apply processed-based restoration to improve ecological and hydrologic functions. Translocation and establishing populations of any species is difficult (most efforts result in less than 50% success), often because unsuitable habitat (Harig and Fausch 2002). The translocation of Cutthroat Trout *Oncorhynchus clarkii* has proven to be even less successful (20–46% success rate), and poor habitat conditions is a primary reason for translocation failures (Harig and Fausch 2002). The habitat required to support a self-sustaining Cutthroat Trout population includes, (1) enough space for adults and juveniles (minimum watershed size of 14.7 km (about twice the height of Mount Everest)[2] (about half the area of Chicago O'Hare airport)), (2) refuge from high flow during flooding events, (3) silt-free gravel for spawning, and (4) suitable summer- and winter-time water temperatures (Harig and Fausch 2002).The Battle Creek area from the headwater reservoirs to the confluence of the Bear River is approximately 160.6 km (about the distance from Washington, D.C. to New York City)[2] (personal communication, B. Andrews, Hansen, Allen and Luce, Inc.) and would likely be large enough to meet this requirement. Based the data collected and observation of Battle Creek during this study, to create the habitat necessary for Cutthroat Trout, restoration efforts must include creating and maintaining silt-free habitats and deeper pools. The long-term temperatures in Battle Creek are currently unknown, but we are hopeful that the temperature loggers currently deployed will provide data to assess the river conditions about Cutthroat Trout temperature requirements (and those of other native fish). Depending upon goals, creating deep pools and complex habitats is achievable with the stream and riparian area restoration plans, addition of flow, fencing of sensitive riparian areas, and with the help of more beaver ponds. The upland section of the site is a Wyoming big sagebrush community, a type of semiarid steppe typical of most of the Intermountain West. Steppes are characterized by a lack of trees, with shrubs as the canopy cover and grasses and forbs in the understory. In the Intermountain West, the dominant shrub is big sagebrush and at this site, the subspecies is Wyoming big sagebrush. The dominant understory bunchgrass is blue-bunch wheatgrass (USDA-NRCS ESD 2020). The riparian area and emergent wetlands of the site are currently threatened by Russian Olive which densely lines the riparian corridor. Russian Olive is a late-successional species whereas native riparian trees tend to be pioneer species that thrive on disturbance (Katz & Shafroth 2003). By returning Battle Creek to a state of natural disturbance using process-based restoration we can create conditions that favor native species over Russian Olive. Placing structures in the upper watershed will reduce the sediment supplied to the lower reach over time and improve water quality. Additionally, placing structures in the upper watershed will slow the release of water as structures create channel roughness and reduce the efficiency of water transport.

This will allow for a more consistent supply of water throughout the summer and attenuate the highest peak flows. The BRAT model could identify much of the upper watershed as capable of supporting PBR structures at present. Part of the study will help the Tribe gain the approval of landowners, on the upper Battle Creek to move forward with restoration. Beaver dam analogs (Pollock et al., 2014; Pollock et al., 2012) have been used across a range of geomorphic and ecological settings to recover degraded stream ecosystems. Installing BDA structures in strategic locations to obtain hydraulic response is also a way to engage NWBSN members and the local community in hands-on restoration activities. Beaver dam analogs elicit similar hydrologic responses as natural beaver dams and can be used to reap ecological benefits associated with natural beaver dams and promote successful beaver translocation. The use of beaver and mimicking beaver activity in restoration have increased in popularity and have been shown to promote incision recovery (Pollock et al., 2007; Pollock et al., 2014), retain sediment and promote aggregation and widening (Butler and Malanson, 1995; Butler and Malanson, 2005), increase the magnitude of low flows and attenuate peak flows (Nyssen et al., 2011), and mitigate diel temperature fluctuations (Weber et al. 2017).BDA's can accelerate the recovery of incised channels as described in the channel evolution model (Figure x Pollock et al. 2014). The channel evolution model (Figure) describes the trajectory through which incised channels recover by aggregation and widening (Pollock et al 2014). During phase a of the channel evolution model, natural beaver dams or BDAs are constructed in the bottom of the incised channel but the stream power in the narrow trench is too high for the dams to persist, and they inevitably blow out. These "failures" serve to direct flow to the banks and widen the channel while simultaneously increasing woody debris as building materials move downstream. As dams breach and the trench widens, an inset floodplain form (phase b). As the trench becomes wider, larger, more stable dams can be built (phase c) allowing for more sediment to accumulate behind the structures (phase d). As sediment builds behind structures, vegetation can take hold, further increasing sediment retention and in channel complexity until the channel reconnects to its floodplain (phase e). The final stage of channel evolution occurs when the stream becomes a multithreaded, complex, self-sustaining ecosystem (stage f). Channel evolution can be expedited by beaver mimicry techniques including BDA's, PAL's, and LWD.



River restoration has traditionally been an expensive and highly engineered process, consequently, the recent push for "low-tech" or "process-based" restoration has provided practitioners the ability to restore many miles of stream at a low cost. Process-based restoration (PBR) focuses on restoring processes capable of sustaining complex and healthy river ecosystems. These processes are typically initiated by the introduction of structural elements, i.e., in-channel material capable of altering flow, in the form of large woody debris (LWD) and beaver dams (Shahverdian et al., 2019). The strategic introduction of large woody debris into Battle Creek could help to widen the streambank and promote aggradation of the bed, thus combating the current incised state. Further, removing invasive riparian species and replanting native riparian vegetation will promote the return of functionality to Battle Creek. In conclusion, the preservation of all native species in Battle Creek should be considered during restoration. Additionally, by creating complex habitats through enhancement of the stream, all native species currently inhabiting that section of Battle Creek will benefit from the resulting competitive advantage over nonnative fishes (Albrecht et al. 2017, 2020).

- *If the project will benefit multiple water uses (i.e., benefits to ecological values AND benefits to other water uses, e.g., municipal, agricultural, or tribal water uses), please explain how the project benefits other water uses.*

Response: Downstream water users will benefit from improved water quality from a restored and functional ecosystem that acts as a filter for nutrients and sediment.

**Sub-Criterion A.2—Quantification of Specific Project Benefits by Project Type**
***Explain the extent of project benefits. Please respond to the following questions for each projecttype included in your application (i.e., please only respond to the section(s) of this subcriterion that are relevant to your project).***

- *Project benefits for water efficiency projects that result in quantifiable and sustained watersavings or improved water management—and which increase water supply reliability for ecological values.*

- *Explain in detail how water conserved because of the project will be used to increase water sustainability for ecological values. Will the project commit conserved water to remain instream? If so, please provide detailed support for that commitment. Will a formal mechanism (e.g., collaboration with a state agency or nonprofit organization, or other mechanisms allowable under state law) be used? Or, if a formal mechanism will not be used, please describe the arrangement proposed to contribute conserved water for ecological benefits. Please explain the roles of any partners in the process and attach any relevant supporting documents.*
- *Describe the benefits that are expected to result from increased instream flows. Will increased instream flows assist in reducing basin-wide water supply and demand imbalances or in complying with an interstate compact? Will increased instream flows result in benefits to fish and wildlife? If so, please describe the species and expected benefit of the project. Will the increased instream flows result in benefits to habitat or other ecological benefits? If so, describe these benefits. Will the flows specifically benefit federally designated critical habitat?*

Response: Water conserved by removal of Russian Olive (RO) trees and piping of laterals ditches, and water added by well and spring flow will be used to improve streamflow in the system, with the primary goal of increasing biodiversity and improving both aquatic and riparian habitat. All conservation and enhancements to streamflow are intended to be used to benefit the aquatic and riparian ecosystems. Downstream users will also benefit from water quality improvements that occur when a functional riparian ecosystem is acting as a filter for nutrients and sediment. Water from the spring will be routed into the project area and will be used for ecological purposes. This natural spring water right will provide up to 13,000 gallons (about twice the volume of a large U-Haul truck) per day and 14.5-acre feet per year, into the Battle Creek system. Riparian ecosystems are more resilient to climate perturbations than the simplified agro-ecosystem that currently exists at the Tribal Property. The site currently bears the scars of multigenerational legacies of settler population impacts, including water siltation from livestock grazing, channelization, water diversion, and excessive phosphorus loading from agriculture. Transforming much of the site to native riparian habitat along the Bear River and Battle Creek will increase the adaptive capacity of the project area to provide habitat to endemic species and improve water quality and water storage. This will enable the site to absorb increased

variability in total precipitation, reduced snowpack, and increased temperature variability. We estimate 506-acre feet per year for water saved by removing the RO.
http://www.mountainstudies.org/russianolive

https://extensionpublications.unl.edu/assets/pdf/ec167.pdf

- *Explain where the water that will be conserved is currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground) and how the water is currently being used. For example, are current losses returning to the system and being used by others? Are current losses entering an impaired groundwater table becoming unsuitable for future use? Are there any known benefits associated with where the currentlosses are going? For example, is seepage water providing additional habitat for fish or animal species?*

Response: The current water use is diverting from the natural stream and used as irrigation to pasture and grass fields for cattle. The irrigation system is flood irrigation. This water currently seeps into the ground and into the shallow groundwater system or field drains. The Tribal Property is the last user on the Battle Creek drainage and unused water returns to the field ditch and eventually to the Bear River. There are no other water users in the system downstream on the project area on the Battle Creek drainage. There are no known benefits resulting from the "lost" water. RO trees can use 75 gals of water per day. Our initial estimates south of Russian Olive (RO) trees on the property were 15 acres (about the area of Chicago's Millennium Park) of RO. At 500 plants per acre, we would have 10,000 plants. There would be 750,000 gallons (about the volume of an Olympic-size swimming pool) per day water use or 4.63-acre feet per day. 110 day (about 3 and a half months) growing season around Preston so 506-acre feet per year water saved by removing the RO.

- *Explain in detail how water conserved as a result of the project will be used to increasewater sustainability for ecological values. Will the project commit conserved water to remain instream? If so, please provide detailed support for that commitment. Will a formal mechanism (e.g., collaboration with a state agency or nonprofit organization, orother mechanisms allowable under state law) be used?*
- *Or,*
- *if a formal mechanism will not be used, please describe the arrangement proposed tocontribute conserved water for ecological benefits. Please explain the roles of any partners in the process and attach any relevant supporting documents.*

Response: Water conserved by removal of Russian Olive trees, piping of laterals ditches, and water added by well and spring flow will be used to improve streamflow in the system, with the primary goal of increasing biodiversity and improving both aquatic and riparian habitat. All improvements in streamflow are intended to be used to enhance streamflow levels and to benefit the aquatic and riparian ecosystems. Downstream users will also benefit from water quality improvements that occur when a functional riparian ecosystem is acting as a filter for nutrients and sediment. The flows to the restored river channel will also be increased from the lateral piping. This portion of the project will increase water availability by another 120 acre-feet per year. This water will be added to the steam channel to benefit the restored channels and revegetation of native species.

- *Describe the benefits that are expected to result from increased instream flows. Will increased instream flows assist in reducing basin-wide water supply and demand imbalances or in complying with an interstate compact? Will increased instream flows result in benefits to fish and wildlife? If so, please describe the species and expected benefit of the project. Will the increased instream flows result in benefits to habitat or other ecological benefits? If so, describe these benefits. Will the flows specifically benefitfederally designated critical habitat?*

Response: A diverse array of ecological benefits will be realized through implementation of the project, as the primary focus is restoration of the riverine and riparian ecosystem rather than more limited approaches that target single species benefits. By restoring both the form and function of the ecosystem, habitat diversity is greatly increased. The existing channelized Battle Creek, with its dense population of non-native species, offers almost none of the important functions of a natural river. Important aspects of function such as continuity, connectivity, complexity, and dynamics are not part of the current system and would be explicitly addressed in the design and construction of the new meandering and braided stream channels. Additionally, water quality will be improved through nutrient uptake by plants in a healthy riparian ecosystem along the new channels. Water quality benefits will be passed to downstream water users when cleaner water passes from the project area into the Bear River.

*PROJECT BENEFITS FOR DROUGHT RESILIENCY PROJECTS RELATED TO FISH AND WILDLIFE*

- *What are the types and quantities of environmental benefits provided, such as the types ofspecies and their numbers benefited; acreage of habitat improved, restored, or protected; or the amount of flow provided? How was this estimate calculated?*

Response: Removing the invasive plant species is the first phase of a multi-phased project to restore stream function and fisheries habitat on the property. One goal of the project is to restore a self-sustaining population of Cutthroat Trout, as well as other species of a native fish assemblage. The possibility of restoring Cutthroat Trout habitat is currently restricted by the altered hydrology, impaired water quality, and degraded habitat of the Battle Creek drainage. In addition to Cutthroat Trout the project is expected to improve and increase available habitat for the existing native fish community the Tribe has documented within Battle Creek. The removal of the Russian Olive trees and replacement with native riparian woody plant communities will inevitably increase the availability of quality native bird habitat. Neo-tropical migratory songbirds such as warblers utilize native riparian habitat for nesting during the growing season. Native small mammals such as mink, weasels, rabbits, muskrats, voles, and mice are an important component of a healthy native riparian ecosystem. This project will increase the available habitat for those species. Reptiles such as garter snakes and amphibians including the leopard and chorus frog require healthy native riparian habitats to support viable sustainable populations.

- *If the project will make more water available, or make water available at a more advantageous time or location, how much additional water will be made available? Describe the amount of estimated water (in acre-feet per year) expected to be made available directly from the project. Please include a specific quantifiable water contribution estimate and describe the support/documentation for this estimate, includinga detailed explanation of how the estimate was determined.*

Response: The project will make more water available with the removal of Russian Olive (RO) and the late season introduction of canal shares from Battle Creek Irrigation Company shares. RO trees can use 75 gals of water per day. Our initial estimates RO trees on the property were 15 acres (about the area of Chicago's Millennium Park) of RO. At 500 plants per acre, we would have 10,000 plants. There would be 750,000 gallons (about the volume of an Olympic-size swimming pool) per day water use or 4.63-acre feet per day. 110 day (about 3 and a half months) growing season around Preston would yield a 506-acre feet per year water saved by removing the RO. The water conserved by piping the Battle Creek Irrigation laterals were estimated by water losses occurring the delivery ditches. These ditches were poorly maintained earthen ditches that were subject to seepage, tree evapotranspiration and unregulated spillage from poorly defined banks. The Battle Creek Irrigation water rights are some of the most senior water rights in river basin. This priority insures late season water availability when natural streamflow declines. These Tribal owned shares are equivalent to 240 acre-feet of water. Field estimates of water losses are 50% and therefore an estimated 120 acre-feet will be conserved with the piping segment.

- *How is the species or habitat impacted by drought?*

Response: During periods of prolonged drought, it is common for wetland and riparian ecosystems to become stressed, and these areas sometimes shrink or recede in size if the drought conditions are severe enough. If surface water availability is reduced in these habitats it can lead to reduced reproductive rates in some or all the native species utilizing the habitat. In the most extreme drought conditions water dependent species can suffer increased mortality rates amongst adults and drought can lead to more mobile species abandoning areas that are not providing the required habitat. Species that do not directly require the water may still be dependent on the wetland and riparian habitat to provide grazing, foraging, or hunting areas. The loss of food availability on these species during times of drought can increase overall stress on the species. Depending on the severity of the drought, the overall species population levels regionally or even globally can be reduced from year to year.

- *If the proposed project will benefit federally listed threatened or endangered speciesplease consider the following elements:*
- *Is the species subject to a recovery plan or conservation plan under the ESA?*
- *What is the relationship of the species to water supply?*
- *What is the extent of the proposed project that would reduce the likelihood oflisting, or would otherwise improve the status of the species?*
- *Is the species adversely affected by a Reclamation project?*

Response: The project could potentially provide additional suitable habitat for the western yellow billed cuckoo, a federally threated species of bird. The western yellow billed cuckoo requires large tracts of native riparian tree and shrub gallery habitats for foraging and breeding. The U.S. Fish and Wildlife Service has designated Critical Habitat for this species. The project area is not within that Critical Habitat Area. While the western yellow billed cuckoo is not a direct project related target species, it is not unreasonable to assume that in the distant future (25-75 years) the native woody riparian habitat planned for the project will reach a mature status that could be colonized by western yellow billed cuckoos. The western yellow billed cuckoo has been declining significantly in the western U.S., presumably due to the rapid loss of available suitable forested riparian habitat due to the increase in agriculture, reservoir control of rivers, and urbanization. The proposed project would likely provide improvements to the status of this species in the distant future.

*PROJECT BENEFITS FOR WATERSHED MANAGEMENT PROJECTS*

- *If the project will result in long-term improvements to water quality (e.g., decrease sediment or nutrient pollution, improve water temperature, or mitigate impacts from floods or drought) please explain the extent of those benefits (i.e., magnitude and geographic extent). Please estimate expected project benefits to water quality and providedocumentation and support for this estimate, including a detailed explanation of how the estimate was determined.*

Response: Yes, Placing BDA structures in the upper watershed will reduce the sediment supplied to the lower reach over time and improve water quality. Additionally, placing structures in the upper watershed will slow the release of water as structures create channel roughness and reduce the efficiency of water transport. This will allow for a more consistent supply of water throughout the summer and attenuate the highest peak flows. The BRAT model could identify much of the upper watershed as capable of supporting process-based restoration structures at present.
Water quality of Battle Creek streamflow that passes through the proposed meandering and braided channel complex will be improved primarily by a process of nutrient uptake from plants living in a healthy riparian and aquatic ecosystem within and along the new channels. Added water quality benefits will occur from settling of larger sediment particles within pools and beaver dams, and on the floodplain of the new channel complex. These water quality benefits will be passed to downstream water users when cleaner water passes from the project area into the Bear River.

- *If the project will benefit aquatic or riparian ecosystems within the watershed (e.g., by reducing flood risk, reducing bank erosion, increasing biodiversity, or preserving nativespecies), please explain the extent of those benefits (i.e., magnitude and geographic extent). Please estimate expected project benefits to ecosystems and provide documentation and support for this estimate, including a detailed explanation of how theestimate was determined.*

Response: Although we cannot completely recreate a historical reference site, targeted restoration can restore ecological and fluvial processes that may function similarly and evoke the ethos of pre- 1863 site conditions and that are more resilient to disturbance. Wildlife that can return and will be of cultural significance to the Tribe, includes: The Bald Eagle, The Trumpeter Swan, Big Game Deer, and the Brown Trout. The Bald Eagle is the Tribe's most sacred animal and feathers were used to make headdresses and used in Ceremony. The Trumpeter Swan brings peace to the Tribe and the deer and fish were major food sources. These species were in abundance prior to the Mormon settlers in the 1850s. The Tribe is also expecting special significant vegetation to return to the streamside's banks, including: The Willow, The Sego Lily, Sage, and Choke Cherries. Many homes were made from the thick willows that grow here. The Sego Lily and Sage were used as medicines and in Ceremony. Choke Cherries were a food staple of the Tribe. In river systems, Process Based Restoration (PBR) is an approach that seeks to restore the processes of dynamic rivers and streams rather than restoring to a desired channel form (Wheaton et al 2019). In upland systems, ecosystems with high perennial grass cover and low invasive annual grass cover are more resilient to disturbance than a site with low perennial cover (Chambers et al 2014) like the current site conditions.

| Shoshone name | Common name | Scientific Name | Where found | Uses |
|---|---|---|---|---|
| | Alder | *Alnus rubra* | | Making paint |
| | Yarrow | *Achillea millefolium* | fields, prairies, waste places | Stop bleeding, wounds, sores |
| Teamph | Serviceberry | *Amelanchier utahensis* | Hillsides, ravines, edge of streams, moist woods | Winter food (patties, pudding), weapons |
| Pasigo | Camas | *Camassia quamash* | Prairies, open woods | Winter food (dried bulbs) |
| | Wild rose | *Rosa nutkana or woodsii* | Prairies, woodland thickets | Tea, medicine, weapons, winter food |
| Ake | Sunflower | *Balsamorhiza sagittata* | fields, prairies, waste places | Cordage, winter food (patties, pudding) |
| | Milkweed | *Asclepias speciosa* | fields, meadows | Food additive (syrup from nectar), chewi gum, cordage |
| Senkapin, senapin | Quaking Aspen | *Populus tremuloides* | Logged and burned areas | Tea, medicine |
| Do Nambi | Chokecherry | *Prunus virginiana* | Lakes, ponds, ditches, rivers | Winter food (patties, pudding), weapon |
| Gana-Gunga | Bitterroot | *Lewisia rediviva* | Dry rocky slopes, open areas | Winter food |
| Sehepin, seepin | Willow | *Salix spp. (eriocephala)* | Waterways, swamps, poorly drained slopes | Tea, medicine, dwellings, tools, ceremon cordage, weapon |
| Toih, toihppeh | Cat Tail | *Typha latifolia* | Lakes, marshes, ditches, rivers | Medicine, year-round food, ceremony |

- *If the project will benefit specific species and habitats, please describe the species and/ortype of habitat that will benefit and the status of the species or habitat (e.g., native species, game species, federally threatened or endangered, state listed, or designated critical habitat). Please describe the extent (i.e., magnitude and geographic extent) to which the project will benefit the species or habitat, including an estimate of expected project benefits and documentation and support for the estimate.*

Response: The proposed project would increase available suitable habitat for numerous native fish and wildlife species that rely on more undisturbed native plant community habitat types. All the areas of the project including uplands, wetlands, riparian, and stream habitat that would be restored with more natural and native vegetation communities will benefit native species. The magnitude of the native fish and wildlife benefits due to the project is difficult to predict; however, based on conceptual

designs and the planned restoration and management of the site the increase in available suitable habitat should be very significant. Most of the species on the list below are likely to be present frequently or occasionally within the post restoration project area. The initial baseline review of the project area (wetland delineation, baseline vegetation survey, and wildlife observations indicate that the project area native species habitat is significantly degraded and impaired. Very few of the species listed below are currently present or have been observed within the project area. The extent to which these species utilize the post restoration site will be documented through planned future fish and wildlife monitoring efforts and studies that are being undertaken by the Tribe.

More than 75 percent of Idaho's wildlife depend on wetlands during some part of their life cycle (Idaho Department of Fish and Game, 1990). Since about 1860, when mining and farming activities began, wetlands in Idaho have decreased 56 percent-from about 877,000 acres (about the area of Rhode Island) to about 386,000 acres (Dahl, 1990). Native wildlife and fish species classified as Rare or Species of Concern, including American white pelican, Bald Eagle, Bobolink, Ferruginous hawk, Grasshopper sparrow, Lewis's woodpecker, Long-billed curlew, Short-eared owl, Great Plains toad, Longnose dace, Mountain whitefish, Redside shiner, Sculpin species, Speckled dace, and Utah Sucker.

*Target Wildlife Species of Greatest Conservation Need for Battle Creek Restoration Site*

| County | Scientific Name | Common Name | SGCN | Category | Path |
|---|---|---|---|---|---|
| Franklin | *Aechmophorus clarkii* | Clark's Grebe | Yes | Bird | https://idfg.idaho.gov/species/taxa/18337 |
| Franklin | *Aechmophorus occidentalis* | Western Grebe | Yes | Bird | https://idfg.idaho.gov/species/taxa/19787 |
| Franklin | *Anas acuta* | Northern Pintail | Yes | Bird | https://idfg.idaho.gov/species/taxa/18111 |
| Franklin | *Anaxyrus woodhousii* | Woodhouse's Toad | Yes | Amphibian | https://idfg.idaho.gov/species/taxa/18129 |
| Franklin | *Ardea alba* | Great Egret | Yes | Bird | https://idfg.idaho.gov/species/taxa/17856 |
| Franklin | *Asio flammeus* | Short-eared Owl | Yes | Bird | https://idfg.idaho.gov/species/taxa/15544 |
| Franklin | *Aythya affinis* | Lesser Scaup | Yes | Bird | https://idfg.idaho.gov/species/taxa/18325 |
| Franklin | *Bubulcus ibis* | Cattle Egret | Yes | Bird | https://idfg.idaho.gov/species/taxa/19671 |
| Franklin | *Buteo regalis* | Ferruginous Hawk | Yes | Bird | https://idfg.idaho.gov/species/taxa/17654 |
| Franklin | *Buteo swainsoni* | Swainson's Hawk | Yes | Bird | https://idfg.idaho.gov/species/taxa/19372 |
| Franklin | *Chlidonias niger* | Black Tern | Yes | Bird | https://idfg.idaho.gov/species/taxa/19458 |
| Franklin | *Cygnus buccinator* | Trumpeter Swan | Yes | Bird | https://idfg.idaho.gov/species/taxa/19287 |
| Franklin | *Diadophis punctatus* | Ring-necked Snake | Yes | Reptile | https://idfg.idaho.gov/species/taxa/15582 |
| Franklin | *Egretta thula* | Snowy Egret | Yes | Bird | https://idfg.idaho.gov/species/taxa/15646 |
| Franklin | *Falco peregrinus* | Peregrine Falcon | Yes | Bird | https://idfg.idaho.gov/species/taxa/17242 |
| Franklin | *Gavia immer* | Common Loon | Yes | Bird | https://idfg.idaho.gov/species/taxa/15698 |
| Franklin | *Grus canadensis* | Sandhill Crane | Yes | Bird | https://idfg.idaho.gov/species/taxa/18640 |
| Franklin | *Haliaeetus leucocephalus* | Bald Eagle | Yes | Bird | https://idfg.idaho.gov/species/taxa/18587 |
| Franklin | *Himantopus mexicanus* | Black-necked Stilt | Yes | Bird | https://idfg.idaho.gov/species/taxa/19107 |
| Franklin | *Hydroprogne caspia* | Caspian Tern | Yes | Bird | https://idfg.idaho.gov/species/taxa/18702 |
| Franklin | *Larus californicus* | California Gull | Yes | Bird | https://idfg.idaho.gov/species/taxa/15895 |
| Franklin | *Leucophaeus pipixcan* | Franklin's Gull | Yes | Bird | https://idfg.idaho.gov/species/taxa/16522 |
| Franklin | *Lithobates pipiens* | Northern Leopard Frog | Yes | Amphibian | https://idfg.idaho.gov/species/taxa/16367 |

| | | | | | |
|---|---|---|---|---|---|
| Franklin | *Numenius americanus* | Long-billed Curlew | Yes | Bird | https://idfg.idaho.gov/species/taxa/15609 |
| Franklin | *Nycticorax nycticorax* | Black-crowned Night-Heron | Yes | Bird | https://idfg.idaho.gov/species/taxa/18945 |
| Franklin | *Pelecanus erythrorhynchos* | American White Pelican | Yes | Bird | https://idfg.idaho.gov/species/taxa/17345 |
| Franklin | *Phalaropus tricolor* | Wilson's Phalarope | Yes | Bird | https://idfg.idaho.gov/species/taxa/19272 |
| Franklin | *Plegadis chihi* | White-faced Ibis | Yes | Bird | https://idfg.idaho.gov/species/taxa/18080 |
| Franklin | *Recurvirostra americana* | American Avocet | Yes | Bird | https://idfg.idaho.gov/species/taxa/15289 |
| Franklin | *Sterna forsteri* | Forster's Tern | Yes | Bird | https://idfg.idaho.gov/species/taxa/16406 |

*List taken from Idaho Department of Fish and Game, https://idfg.idaho.gov/species/taxa/county-lists*
****SGCN- The Idaho State Wildlife Action Plan provides a framework for conserving Species of Greatest Conservation Need and the habitats upon which they depend. It is the state's guiding document for managing and conserving at-risk species. An integrated approach to implementing this strategy across all Fish and Game programs will reduce potential listings under the Endangered Species Act.*

These species are taken from the Idaho State Wildlife Action Plan, listed in Franklin County Idaho, and are at least partially associated with riparian and wetland habitats. This would include the Bear River and Battle Creek interface at the project area.

- *Are there project benefits not addressed in the preceding questions? If so, what are these benefits?*

Response: The project would also provide significant benefits to numerous other native wildlife species not listed above including but not limited to deer, elk, moose, small mammals, birds, reptiles, and amphibians. The primary benefit of the project to these species would come in the form of additional suitable available habitat that is currently either not present or present in a significantly reduced functioning condition.

**Project benefits for multi-benefits projects: If applicable, please describe the extent to whichthe project will benefit multiple water uses. Please do not repeat information included in your prior responses.**

- *Please describe the extent to which the project will benefit agricultural, municipal, tribal,or recreation uses? Please explain how your estimate of benefits to multiple uses was calculated and provide support for your response.*

Response: This project will reinforce the cultural identity of the Tribe and will be a place of healing where the Tribe can come together to heal from historical trauma, strengthen their relationships to a part of their traditional territory, collaborate with partners who believe in their vision for this place and teach others about their culture, history, and resilience. Ecologically regenerating this site includes aesthetic, spiritual, inspiration, knowledge, existence/bequest, social capital and cohesion, identity, and educational benefits. The tremendous heritage value associated with this Tribe telling their stories of tragedy and resilience may inspire other Indigenous communities to restore and re-story historic sites where settler narratives have dominated Indigenous narratives.
1) Educate the Northwestern Shoshone Band and community about their lifeways, the tragic massacre, and the enduring spirit of the Shoshone people today. 2) Restore habitat that promote the return of native fish, wildlife, and plant species, and 3) Promote ecological functions and services that will improve water quality.

- Create a beautiful open natural ecological system on the site for the tribal members to visit and reconnect to the land and bring back tribal traditions that were practiced in this area.
- Development of a resource to connect present and future generations of the NWBSN to their historical and cultural heritage, by Tribal Elders teaching the next generations about the uses and physical, sustainment and importance native plants being restored.
- Establish native conditions as a memorial to those who lost their lives at the Bear River Massacre.

- *Will the project reduce water conflicts within the watershed?*

Response: The project will resolve conflict for the Tribe with one water user on the system. The project will develop its own take out of water, leaving the open ditch system for this water user. Any water delivered in the old ditch will be for the sole use of this water user. They have threatened lawsuits on the Tribe and other landowners in the area because he feels he is not getting his allotted water right because there have been too many users on the ditch. This user has been briefed of the project and realizes this project is a positive to resolve irrigation conflicts that have been ongoing for the Tribe since 2018. There has been constant tension of water in the area prior to the Tribe's purchase of land in 2018, as stated by the neighboring landowners and water users.

- *Will the project provide benefits to other water uses not mentioned above? If so, how and to what extent?*

Response: It is believed so, but no specific uses have been calculated.

**Evaluation Criterion B—Collaborative Project Planning**

***Was the proposed project described in your application developed as part of a collaborative process by:***

- *A watershed group, as defined in section 6001 of the Cooperative Watershed Management Act.*

***Or***

- *A water user and one or more stakeholders with diverse interests (i.e., stakeholders representing different water use sectors such as agriculture,municipal, tribal, recreational, or environmental)?*

Response: Yes. The project has been developed collaborative with a watershed group and with multiple stakeholders. The Tribe, in collaboration with Trout Unlimited, Utah State University (USU), Sageland Collaborative, Utah Nature Conservancy, Bonneville Environmental Foundation, PacifiCorp's Bear River Environmental Coordination Committee (ECC), The US Fish and Wildlife Service, and Sagebrush Steppe Land Trust have created a project plan that will be improving stream channel restoration along the Battle Creek Tributary, near the Bear River Massacre Site in Franklin County, Preston, Idaho.

- *Describe the strategy or plan that supports your proposed project.*

Response: The plan and strategy put together by the collaborators is to develop a tributary that will allow the Bonneville cutthroat trout and other native fish to return to the Battle Creek Tributary and thrive. The plan has looked at the best options to restore ~5 miles of the Battle Creek Corridor that has been channelized and degraded by erosion and agricultural grazing. The study will look at the best areas to install beaver dam analogs (BDAs) in the tributary. It is estimated there could be as many as 30 BPDs installed in the area. The site conditions of the project site are a legacy of invaded, disturbed landscapes. There is a mechanistic relationship between plant community invisibility and increased resource availability, where invisibility increases when there is an increase in the number of unused resources (Davis et al 2000). One of the most common and long recognized means of increasing resource availability, thus invisibility, is through disturbance (Elton 1958, Crawley 1987, Lodge 1993, Huston 1994). Post-colonization overgrazing by cattle and sheep decreased competition among native perennial grasses and forbs created a landscape with resource availability when cheatgrass was introduced to the Intermountain West in the mid 1880s and it spread rapidly throughout the degraded rangelands (Mack 1986). Much like the rest of the Intermountain West, the project site is invaded, to varying degrees, by cheatgrass (Bromus tectorum; Menakis et al 2002, Pellant and Hall 1994, Mack 1986, D'Antonio and Vitousek 1992, Knapp 1996) due to overgrazing, fire, and drought, and by Russian Olive (Elaeagnus angustifolia) due to decreased physical disturbance to stream banks. There are other weeds throughout the property, like tumble mustard (Sysimbrium altimissium) and teasel (Dipsacus spp.). There may also be leafy spurge, spotted knapweed, and scotch thistle in the area (Franklin County, 2020). There are also planted and irrigated pasture grasses on the site. Meadow communities are some of the most productive components of riparian areas in the Intermountain West (Chambers et al 1999) as well as at the Boa Ogoi site, and have been

degraded by livestock grazing (Dauwlter et al 2018). Excessive livestock trampling causes soil compaction, reduced root growth, and lowered plant productivity. The meadow and riparian areas of the site are degraded, and Battle Creek is simplified and incised. Degradation and incision are common among many streams in the Great Basin owing to many anthropogenic and natural drivers (Chambers et. al. 2004) including land use changes (Cooke and Reeves 1976, Montgomery 2007), changes in climate (Bryan 1925, Elliot et al. 1999), the extirpation of beaver (Castor canadensis) (Gurnell 1998), and grazing (Kauffman and Krueger 1984). The streambank vegetation is dominated by Russian Olive and crack willows (Salix fragilis), which need to be removed and replaced by willow and cottonwood to restore the streambank function and meet stakeholder goals of bringing "back the natural habitat as close as possible to when the Shoshone lived and prior to the pioneer farming practices that led to a loss of precious food sources of the native people". This project aims to rectify a critical water quality and invasive species problem in the area. Battle Creek is currently in violation of the Clean Water Act and is 303 (d) listed as impaired by the Total Maximum Daily Load of phosphorus and sediment (EPA).

- *When was the plan or strategy prepared and for what purpose?*

The project started to be developed by the Tribe and its contractors in November 2019. The Tribe began outreach to collaborating partners to assistance in funding and project development. The project was presented to the ECC in June of 2019, with Trout Unlimited and the Idaho DEQ as the sponsor for the project. The project was developed further by these groups and was again presented to the ECC in April of 2021. The project was then presented to Reclamation's Native American Affairs Office and the Bear River Commission in October of 2021. The project received comments, edits and changes that have been used to create this funding application.

**Major Goals and Objectives of the Project Include:**

- The goal for altered hydrology is 1) connecting channel to a natural appropriately sized floodplain 2) increase structural complexity to increase available habitat 3) design for resilience to future climate variability 4) provide constant sustained water in the tributary 5) build and maintain water pools.
- Convert canal and Battle Creek Tributary, that is on Tribal Land, to an open channel water way that would have existed prior to agricultural land use activities.
- Installation of Concrete Diversion Structure
- Installation of 3 Box Culvert (Fish Passable)
- Reduction in sediment loads as vegetation becomes well established. Monitoring flows, sediment and nutrient concentrations will be started soon to quantify load reductions.
- Restore suitable habitat for the Bonneville Cutthroat Trout so the stocked fish can begin surviving year to year.
- Establish BDAs in the Battle Creek Tributary
- Restore Native vegetation communities (pre-1800 conditions before fur trappers and settlements) in degraded uplands, wetlands, and riparian habitats. The goal is to restore the entire Battle Creek Watershed, stream, riparian area, and uplands, – The Tribe will look to restore their entire 350 acres (about half the area of Central Park in New York City) owned at the Bear River Massacre Site.
- Restore the riparian functions of a culturally and historically significant hot spring and the banks of the Bear River near the hot springs.
- Improve water quality, water flows and water temperature by installing BDAs, PALs, planning natural vegetation on the corridor banks, installing buried pipeline laterals & introducing additional spring water. Decrease the sediment loads in the Battle Creek by implementing these water quality measures.
- Restore and enhance existing wetlands and create additional ponds and wetlands to attract a

greater abundance and diversity of culturally significant native wildlife to the site.
- General native wildlife improvements for: numerous migratory birds, including waterfowl and birds of prey; small mammals; reptiles and amphibians; and game animals.
- Remove Invasive Species in riparian corridor
- Build bridges between the different agricultural and pioneer cultures in the area.
- Creating better working relationships and understanding with local agricultural producers.
- Create a beautiful open natural ecological system on the site for the tribal members to visit and reconnect to the land and bring back tribal traditions that were practiced in this area.
- Development of a resource to connect present and future generations of the NWBSN to their historical and cultural heritage, by Tribal Elders teaching the next generations about the uses and physical, sustainment and importance native plants being restored.
- Establish native conditions as a memorial to those who lost their lives at the Bear River Massacre.

- *What types of issues are addressed in the plan? For example, does the plan address water quantity issues, water quality issues, and/or issues related to ecosystem healthor the health of species and habitat within the watershed?*

Response: Yes. The project will address the major water quality issues in this location of the Bear River Watershed. This section of the Battle Creek is the largest point source pollution area of the entire Bear River Watershed. Over the past 160 years the riparian habitat along the Bear River and its tributary streams have become severely degraded. In many areas the native vegetation has been overrun with non-native, invasive species such as Russian olive, phragmites, and thistle. These invasive plants have little or no habitat value for native terrestrial, avian, and aquatic wildlife. They also provide little, or no water quality benefits to functions such as nutrient uptake and sediment retention. The meadow and riparian areas of the Battle Creek site are degraded, and Battle Creek is simplified and incised. Degradation and incision are common among many streams in the Great Basin owing to many anthropogenic and natural drivers including land use changes in climate, the extirpation of beaver and grazing. The streambank vegetation is dominated by Russian Olive and crack willows which need to be removed and replaced by willow and cottonwood to restore the streambank and riparian function. This will help meet stakeholder goals of restoring the natural habitat, that would have co-existed with the NWBSN, in 1863 prior to the pioneer farming practices that led to a loss of precious food sources of the native people. Removing the invasive plant species is the first phase of a multi-phased project to restore stream function and fisheries habitat on the property. One goal of the project is to restore a self-sustaining population of Cutthroat Trout, as well as other species of a native fish assemblage. The possibility of restoring Cutthroat Trout habitat is currently restricted by the altered hydrology, impaired water quality, and degraded habitat of the Battle Creek drainage. Battle Creek water temperatures were collected at several sites on the property during the summer of 2020 by BioWest Inc and USU students. Increasing stream flows during the summer and restoring complex stream habitat that is connected to the floodplain should decrease stream temperatures. This project aims to rectify a critical water quality and invasive species problem in the area. Battle Creek is in violation of the Clean Water Act and is 303 (d) listed as impaired for exceedances of the Total Maximum Daily Load of phosphorus and sediment (EPA). Reconnecting the stream to its floodplain on the property will permit the deposition of sediment and associated phosphorous. The Tribe will also begin a process to work with upstream landowners to identify sources of sediment/phosphorous and develop mitigation proposals. Reducing sediment/phosphorous from Battle Creek will also benefit the Bear River, which is listed as an impaired for cold water aquatic life and salmonid spawning waterbody under §303(d) of the Clean Water Act.

- *Is one of the purposes of the strategy or plan to increase the reliability of water supply for ecological values?*

Response: Yes. Flow improvements from non-native vegetation removal will be combined with flow enhancements from spring flow, the new water well, and piping of irrigation laterals, to enhance streamflow throughout the year. These flow enhancements will be of most benefit during periods of

low flow when water temperatures are high and oxygen levels are low. These time periods can stress many organisms and adding streamflow is perhaps the best way to provide ecological benefits.

- *Does the project address an adaptation strategy specifically identified in a completed WaterSMART Basin Study or Water Management Options Pilot (e.g., a strategy tomitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes)?*

Response: No, the project is the first of its kind in this area.

- *Was your strategy or plan developed collaboratively?*

Response: The Tribe along with Hansen, Allen & Luce engineers, BIO-WEST, Allred Restoration, and USU began the design, planning and feasibility work for a stream restoration structure along the Battle Creek Tributary, in 2019. The efforts of this larger scope are being supported by Utah State University, The State of Idaho SHPO, Trout Unlimited and PacifiCorp's Environmental Coordination Committee (ECC) https://www.pacificorp.com/energy/hydro/bear-river/ecc.html Input form Sageland Collaborative and the US Fish and Wildlife Service have also been used. These entities will have been collaborating with the Tribe, to acquire funding to improve the watershed of the Battle Creek area. These partnerships have provided thorough analysis to make environmental and regulatory decisions in a collaborative process that will reduce administrative and regulatory burdens with the cooperating agencies. for a stream restoration diversion structure and culvert replacement along the Battle Creek North Tributary. Funding in the amount of $55,000, was awarded by the Bear River Environmental Coordination Committee, in July 2021. The Tribe will also work with, Sageland Collaborative, to determine the number of beaver dam analogs (BDAs) and post assisted log (PALs) that should be constructed on the Battle Creek North Corridor.

- *Who was involved in preparing the plan? Was the plan prepared with input from stakeholders with diverse interests (e.g., water, land, or forest management interests; and agricultural, municipal, tribal, environmental, recreation uses)? What was the process used for interested stakeholders to provide input during the planning process?*

Response: In January 2018, the Northwestern Band of the Shoshone Nation, purchased over 500 acres (about twice the total floor space of the Pentagon) of the Bear River Massacre area, the traditionally wintering ground of the Tribe. In 2019, the Tribe hired Hansen, Allen & Luce Engineers, BioWest Inc, and Allred Restoration to begin planning a full ecological restoration of the site. This group then invited USU, Trout Unlimited, Sageland Collaborative, Sagebrush Steppe and Land Trust, The US FWS, The Bear River Commission, The USDA, The Utah Nature Conservancy, and the Bear River Hydroelectric Project Environmental Coordination Committee (ECC). The process began with site visits to the area to inform these organizations about the Tribe's restoration goals and asked them to become partners and collaborators in producing a plan that can accomplish those goals. The Tribe held zoom calls over the last two years with this group of stakeholders and built this restoration plan. All these stakeholders have assisted the Tribe in applying for several funding applications from local, state, and federal governments. These stakeholders have a larger plan for the entire Bear River Watershed and helped the Tribe create a project that will fit into those larger goals and helped the Tribe create a project plan that could be used to apply for any funding opportunity that is focused on water, land, and habitat restoration.

- *If the plan was prepared by an entity other than the applicant, explain why it isapplicable.*

Response: The plan was developed by the entity in collaboration with the Tribe's contracted subject matter experts, and partners listed in this application.

- *Describe how the plan or strategy provides support for your proposed project.*

Response: The proposed project will make better use of the Tribes Water Natural Resources; expanding the capability, quality, and capacity of the current water sources; striking a regulatory balance; and restoring infrastructure to natural conditions. The enhancement of the water resources, quality and habitat is at the core of the proposed project. The Project will be the start of a major fish and wildlife habitat and water quality transformation on the Tribe's indigenous area. This project can

help lead to the establishment of the Bonneville Trout in Bear River Watershed. The water system capacity will be enhanced with modern efficient landscape and non-invasive plants that support return of natural vegetation, wildlife, and trout.

- *Does the proposed project implement a goal or need identified in the plan?*

Response: Yes. The proposed project will also examine a multi-source project to ensure adequate water in times of drought and protection in periods of surplus from surface and groundwater sources. Each potential source will be studied to maximize seasonal changes that may impact the site. Stormwater and sheet-flow impacts to erosion and degradation of the site will also be addressed so that overall water quality is improved. The proposed project makes better use of the Tribes Water Natural Resources; expanding the capability and capacity of the current water sources; striking a regulatory balance; and modernizing infrastructure. The enhancement of the water resources is at the core of the proposed study. The current system water sources are to be identified to utilize the water rights more efficiently with drinking water, wastewater, and geothermal uses as opposed to the historic sole agricultural use. The plan will provide thorough analysis with to make environmental and regulatory decisions in a collaborative process that will reduce administrative and regulatory burdens with the cooperating agencies. Finally, water system capacity will be enhanced with modern efficient landscape and open water systems to improve from the traditional flood irrigation methods currently employed.

- *Describe how the proposed project is prioritized in the referenced plan or strategy.*

Response: The project is of the highest priority. This a large water quality and habitat restoration in the Bear River Watershed. Stakeholders have been requesting a project like this for years and are placing the project as top priority because it is recreating natural habitat and water flows.

**Evaluation Criterion C—Stakeholder Support (15 points)**

- *Please describe the level of stakeholder support for the proposed project. Are letters ofsupport from stakeholders provided? Are any stakeholders providing support for the project through cost-share contributions, or through other types of contributions to the project?*

Response:

- The Tribe has many stakeholders in this project that are showing significant support
- Trout Unlimited: Project Sponsor – providing $299,000, and technical expertise
- The Bear River ECC: Project Stakeholder – providing $55,000 and support for the design of the project.
- Utah State University: Climate Adaptation Team is providing in-kind costs on helping the project develop areas or propagation and monitoring of the river and plants.
- Sageland Collaborative: Has provided technical input on the use of BDAs and will donate in-kind to the creating of these BDAs through the project.
- Sagebrush Steppe and Land Trust: Assisting the Tribe in placing site into a conservation easement.
- The US Fish and Wildlife Service and USDA are interested stakeholders that has assisted the Tribe.
- The Bear River Commission is a large stake hold in the Bear River Watershed.

Letters of support, and or, contribution have been submitted by all entities above.

- *Please explain whether the project is supported by a diverse set of stakeholders (appropriate given the types of interested stakeholders within the project area and thescale, type, and complexity of the proposed project). For example, is the project supported by entities representing agricultural, municipal, tribal, environmental, or recreation uses?*

Response: Yes. The project has a very diverse group of stakeholders. The Tribe targeted groups with vast interests. Trout Unlimited is a nation organization for environmental and recreation uses. Sageland Collaborative is a Utah Project that focuses on the positive environment health. The Bear River Commission is made up of representatives from Idaho, Utah, and Wyoming and they appoint state representatives to support agriculture, municipal, environmental and recreation uses in the Bear River Watershed. One of the largest groups is the ECC, (Committee members include PacifiCorp, U.S. Fish & Wildlife Service, U.S. Bureau of Land Management, U.S. National Park Service, USDA Forest Service, Shoshone Bannock Tribes, Idaho Department of Environmental Quality, Idaho Department of Fish & Game, Idaho Department of Parks and Recreation, Trout Unlimited, Idaho Rivers United, Greater Yellowstone Coalition, American Whitewater). to assist in building a plan that would improve the Bear River Watershed and accomplish goals these stakeholders have for the area. All these organizations have been involved in the creation of this restoration plan. All these stakeholders have diverse interests in the Bear River Water Shed.

- *Is the project supported by entities responsible for the management of land, water, fish and wildlife, recreation, or forestry within the project area? Is the project consistent withthe policies of those agencies?*

Response: Yes. Support is being given from the US Fish and Wildlife Service, Reclamation Native American Affairs Office, Trout Unlimited, ECC, The Idaho State SHPO and the Utah Nature Conservancy, and all those mentioned in the document. This project was created with these collaborators to make sure it was consistent with their policies.

- *Will the proposed project complement other ongoing water management activities by state, Federal, or local government entities, non-profits, or individual landowners withinthe project area? Please describe other relevant efforts, including who is undertaking these efforts and whether they support the proposed project. Explain how the proposedproject will avoid duplication or complication of other ongoing efforts.*

Response: Yes. The Tribe has a 5-year grant from the United States Department of Agriculture (USDA) in its Regional Conservation Partnership Program (RCPP). This project will remove 40-aces of Russian Olive and invasive species in the project are, create over 15 acres of new wetlands, revegetate 350 acres around the project area with native vegetation, perform a vegetation mapping and put the area in a long-term conservation easement. The FWS and the Tribe have a land improvement agreement. The FWS has donated $25,000, equipment and in-kind services for improvements of the project area, for project wetlands creation.

- *Is the project completely or partially located on Federal land or at a federal facility? If so, explain whether the agency supports the project, whether the agency will contributetoward the project, and why the Federal agency is not completing the project.*

Response: No – the project is not located on federal land or a federal facility.

- *Is there opposition to the proposed project? If so, describe the opposition and explainhow it will be addressed. Opposition will not necessarily result in fewer points.*

Response: No. – The project has been discussed broadly in the community and with various stakeholders and has never received opposition.

**Evaluation Criterion D—Readiness to Proceed (10 Points)**

- *Describe the implementation plan for the proposed project. Please include an estimatedproject schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. This may include, but is not limited to, design, environmental and cultural resources compliance, permitting, and construction/installation.*

Response: ***Engineering & Design Services: Started November 2021 to January 2024***
Services of design have already begun, and full site design should be completed by 2024

***Permitting: Done by October 2022***

***Revegetation with Native Species: November 2021 to June 2024***
Revegetation native species intensive over this will be ongoing during the entire project
Revegetation planning using all native species. Create planting and seeding plans for native species revegetation and specify what quantities are necessary to accomplish revegetation objectives

***Russian Olive Removal 15 acres and Technical Oversight: October 2022 to December 2022***
The Tribe has already completed 5 acres of removal on Battle Creek North. It can remove the remaining RO's in one season.

***Piping 2 Laterals: October 2022 to March 2023***
Purchase and install 2 headgates, and a combined 580 linear feet of 12" PVC Conveyance Pipe. The project would also purchase and install double of the following: Weir Plate & Gage, Drop Structure, 120 Linear Feet RCP Casing, Rip/Rap and Fencing.

***Spring Water Lateral: October 2022 to March 2023***
This is a new action which proposes to purchase and install: 1 pump, 1 storage tank and a combined 200 linear feet of 4" PVC Conveyance Pipe

***Battle Creek Stream Restoration: October 2022 to March 2023***
Construction of new Battle Creek Tributary Braids. This construction can begin before any installation of structures. It is anticipated that 4 months

***Bank Stabilization with Hot Spring Restoration: Start October 2022 to June 2024***
This can start before any installation of structures.
Use bio-engineered techniques such as soil lifts and bio-d block to stabilize areas of erosion or new construction and revegetate eroding slopes and/or riverbanks.

***Diversion Structure: November 2023***
Construction and installation of a concrete diversion structure of for control diversion. Installation should be complete 2023

***Culverts: November 2023***
Implementation of the two 3-box culverts in the Battle Creek Tributary.

***Beaver Dam Analogs: November 2023 to June 2024***
To finish the installation of the BDA's – a contractor will be solicited for construction work with equipment to install permanent support posts for dams, drilling post holes, fencing and earth work in the tributary.

- *The project budget outlining costs for specific tasks should identify costs associated withthe tasks in your project schedule, and all contractor costs should be broken out to identify the specific tasks included in those costs.*

**Response: Please see budget narrative and tables attached.**

- *Describe any permits and agency approvals that will be required, along with the processand timeframe for obtaining such permits or approvals.*

Response: The Tribe has performed an aquatic resources inventory (wetland delineation) of the entire project area and has subsequently submitted a request and received a written approval of the wetland delineation report and map from the US Army Corps of Engineers, in 2020 and 2021. The Tribe has also engaged the U.S. Fish and Wildlife Service, and the Idaho State Historic Preservation Office (SHPO). NWBSN anticipates that a Clean Water Act Section 404 Permit/401 Certification will be required to obtain approval to perform restoration activities within existing wetlands. A Stream Alteration Permit will also be obtained from the Idaho Department of Water Resources. Given that one of the primary purposes of the project is to restore degraded wetlands and important. wildlife habitat, NWBSN does not anticipate opposition to the issuance of these permits. The Tribe is in consultation with the State of Idaho SHPO and Archeologist, to satisfy the requirements of Section 106 of the National Historic Preservation Act. Upon final approval from the SHPO, any historic or prehistoric sites or artifacts that could be impacted by the project will be documented, preserved, and displayed at the NWBSN's proposed Cultural Interpretive Center, which will be located near the site. Given that one of the primary purposes of the project is to restore degraded wetlands and important wildlife habitat, NWBSN does not anticipate opposition to the issuance of these permits.

The Tribe has already begun working on the permits needed for construction. The Tribe intends to be finished with permitting by October 2022.

- *Identify and describe any engineering or design work performed specifically in support ofthe proposed project, or that will be performed as part of the project. Priority will be given to projects that are further along in the design process and ready for implementation.*

Response: The design study will look at the best size and appropriate location of this structure. This structure will not be a traditional "diversion" structure. This structure will eliminate the need to divert water into the channelized section of Battle Creek Canal. The goal is to plan installation of a structure that will not inhibit fish moving up and down stream and guide the water into the new Battle Creek tributary, on Tribal Land, in future phases of the project. This design study will also include installing piping from spring water right the NWBNS owns, approximately 1,000 linear feet Northwest of the Battle Creek Tributary. This natural spring water right will provide up to 13,000 gallons (about half the volume of a one car garage) per day and 14.5-acre feet per year.
In addition to the diversions structure design work described in the previous paragraph, conceptual level designs have been completed to ensure that physical conditions in the field will allow project goals to be met. A variety of topographic work, including site surveys, have been completed to describe the existing physical parameters and constraints of the site

- *Does the applicant have access to the land or water source where the project is located? Has the applicant obtained any easements that are required for the project? If so, please provide documentation. If the applicant does not yet have permission to access the projectlocation, please describe the process and timeframe for obtaining such permission.*

Response: Yes. The project is on Tribally owned land and has acquired water rights from various sources to contribute to the project. The Tribe has full access to the project site. No permits will be needed.

- *Identify whether the applicant has contacted the local Reclamation office to discuss the potential environmental and cultural resource compliance requirements for the project and the associated costs. Has a line item been included in the budget for costs associated with compliance? If a contractor will need to complete some of the compliance activities,separate line items should be included in the budget for Reclamation's costs and the contractor's costs. Describe any new policies or administrative actions required to implement the project.*

Response: In preparation for this project and other Tribal Projects in this area, the Tribe hired Commonwealth Heritage Group, and their archeologists, to survey the area and create a report for environmental compliance. This report has been given to the PAO Environmental Staff. The Tribe has also obtained a "Wetlands Delineation" from the US Army Corps of Engineers; however, our proposed lateral construction will not impact any delineated wetlands. The UC Region's Provo Area Office Environmental Compliance Group expended $10,000, for FY 2020, for environmental consultation, and has been working with the Tribe, and interested parties, in completing all cultural

tasks for federal permitting requirements. In consultation with the PAO's environmental office about this project/the Tribe a full Environmental Assessment is not anticipated. The PAO Office and the Tribe has been coordinating with the U.S. Fish and Wildlife Service, and the Idaho State Historic Preservation Office (SHPO), and the US Department of Agriculture about this project and other ongoing projects in the area that effect cultural resources. To satisfy the requirements of Section 106 of the National Historic Preservation Act, the Tribe with the PAO will continue to consult with the Idaho State SHPO. Upon final approval from the SHPO, any historic or prehistoric sites or artifacts that could be impacted by the project will be documented, preserved, and displayed at the NWBSN's proposed Cultural Interpretive Center, which will be located near the site.

**Evaluation Criterion E—Performance Measures**

- *Please describe the performance measures that will be used to quantitatively or qualitatively define actual project benefits upon completion of the project. Include support for why the specific performance measures were chosen.*

Response: Monitoring and adaptive management are crucial for tracking this project progress over time and updating our practices if we are not making progress towards the intended conservation goals. The post-construction restoration success will be determined using representative quantitative data collection in combination with aerial photography using a drone to provide current site-specific overview images to help with vegetation mapping. The determination of restoration success will primarily be determined using documentation of native vegetation community establishment. Quantitative vegetation data will be collected along representative established transects, and/or with sampling quadrat plots within the different habitat types restored. The location of photo points, transects, and sampling quadrat plots will be established following the completion of restoration design. A pre-construction monitoring effort will be included to document the existing baseline conditions. Some degree of flexibility will be allowed for minor alterations to the sampling locations following completion of construction. This flexibility is necessary to accommodate unforeseen difficulties that could be encountered during construction causing minor alterations from the restoration design. Vegetation sampling transects and quadrat plots will be revisited annually to document site progression. During the vegetation monitoring, documentation of wildlife species observed within the restored habitats will also be recorded. The vegetation sampling methods will include some combination of the following common vegetation sampling methods, to be determined prior to restoration monitoring; line intercept sampling, belt line intercept sampling, and representative quadrat sampling. Percent cover of native vegetation species and noxious weeds will be documented. Native woody stems per acre will be estimated as part of the sampling effort. The final location of the sampling transects, and quadrats will include at least two sampling locations within each restored habitat type. Permanent overview restoration photo points will be established surrounding and within the restoration area. These points will be revisited on an annual basis and repeat photos will be taken to document vegetation community progression. An aerial drone will take overview photographs of the restoration site each year during monitoring. The drone photographs will provide the existing conditions base map each year to visually see vegetation community progression within the restoration area. The quantitative vegetation data gathered in the field each year will be used to describe the vegetation community boundaries illustrated on the drone photograph base map. A brief monitoring report will be prepared each year describing the results of the annual monitoring and any recommendations for that year to ensure the restoration site is progressing towards a desirable restored native vegetation condition. The report will include photos and an existing conditions vegetation and habitat restoration area map. The report will also provide recommendations on required noxious weed treatment and supplemental planting and seeding requirements.

Riparian/Stream

We plan to use an adaptive management framework for monitoring and assessment of change. Water quality monitoring should be performed and reported annually to evaluate the effectiveness of the restoration actions until goal conditions are met for 3 consecutive years. We will measure water quality parameters important to aquatic life including temperature, dissolved oxygen, turbidity, total dissolved solids (TDS) and specific conductance (SPC), with grab samples for turbidity, total suspended sediments, nutrientsFurther we will take repeat topographic surveys to determine the degree of channel change and the creation of complex habitat. Each PBR structure will be assessed annually and maintained as needed (see PBR adaptive management). Battle Creek is listed as impaired under the EPA 303(d) classification for nutrients (phosphorus) and sediment (TDS) (Ecosystems Research Institute 2006). Battle Creek likely receives high nutrient loads due to the site's proximity to feedlots and agricultural activity. Before the implementation of any restoration activities, we will measure total and dissolved nitrogen and phosphorus and repeat the measures annually.

PBR Adaptive Management
We will use a decision tree to evaluate individual structures as described by Portugal et al. 2015 (figure x). We will assess the condition of BDA's, PAL's, and LWD structures annually after peak runoff subides, generally late June or early July (Hortness & Barenbrock 2001). For each structure we will assess whether the structure is a natural beaver dam or a BDA/PAL/LWD structure. Natural beaver dams will be enumerated and recorded. If the dam has the potential to withstand peak flows no action will be taken. If the dam is structurally compromised but still has the potential to accomplish objectives (i.e., lateral erosion, aggregation, etc) it will be left as is. If the dam is structurally compromised and is unlikely to accomplish the objectives for the complex, we will reinforce the dam with posts, add cobble and gravel to the base, and patch major breaches. BDA's, PAL's, and LWD structures will be assessed using similar guidelines. If the structure is intact and likely to accomplish the complex objectives, we will leave it in place. If the structure is compromised but will likely accomplish the objectives with a bit of structural reinforcement, we will perform maintenance. If the structure is compromised and unlikely to accomplish the objectives or is actively interfering with the objectives it will be decommissioned. This cycle will be repeated annually until the stream has reached dynamic equilibrium based on the incision recovery model and is self-sustaining. Species distribution models will be used to identify the impact of climate in 2070 on species identified as culturally important and present pre-colonization. A higher and lower carbon emission scenario will be used broadly consistent with scenarios in the Fourth National Climate Assessment. Results from the species distribution models that consider climate change scenarios will inform the stewardship plan. The Tribe is planning to conduct a wildlife use inventory and study of the project area utilizing a network of game cameras and acoustic loggers to identify wildlife species by sight (photos) and recorded sound (breeding calls or echolocation). The acoustic loggers can remotely record species of birds, amphibians, and bats using the project area. The subsequent processing of the acoustic data will yield the species utilizing the site without the need for direct visual observations. This is particularly useful when trying to identify more secretive species or species that are only using the sight during the night such as bats and amphibians. The wildlife use inventory and study will provide an estimate of the importance of the post restoration habitat to the native wildlife community.

- *All applicants are required to include information about plans to monitor improved streamflows, aquatic habit, or other expected project benefits. Please describe the plan tomonitor the benefits over a five-year period once the project has been completed. Providedetail on the steps to be taken to carry out the plan.*

Response: Work for this project would include installing and operating flow gauges, weather stations, and water quality sensors fits. Operating would include analysis and reporting costs. These could be installed in the spring of 2022 and monitored for the next 2 years. The project will include data collection related to water quality. The project also includes collecting baseline and post-restoration monitoring data and reports for vegetation communities, aquatic habitat, fisheries, benthic

invertebrates, and wildlife. Baseline data collection: 3D site model (drones & surveys); models and LiDAR from the USGS identify channel restoration options & mitigation of flooding issues; Install water temperature & Mayfly and other sensors to track flow, air and water temperature, conductivity, and climate changes real-time at two baseline locations, one to be moved to the restoration; Tribal data management capacity building; Tours & focus groups with land managers to assess watershed restoration. Monitoring Program & Adaptive Management Plan: Track streamflow, water temperature, turbidity, conductivity, air temperature and other applicable weather data to compare climate resistance of restored riparian areas compared to open grazed areas. An ongoing, annually repeating, fish sampling study will continue as directed by the Tribe. This will provide information on the use of the post restoration aquatic habitat by the fish community (native and non-native). The Tribe will be working with USU in setting up wildlife cameras for the life of the project and information will be taken every quarter to see the improvements and future improvements needed.

**Evaluation Criterion F—Presidential and Department of the Interior Priorities**

1. Climate Change: E.O. 14008 emphasizes the need to prioritize and take robust actionsto reduce climate pollution; increase resilience to the impacts of climate change; protectpublic health; and conserve our lands, waters, oceans, and biodiversity.

- *How will the project build long-term resilience to drought? How many years will theproject continue to provide benefits? Please estimate the extent to which the project will build resilience to drought and provide support for your estimate.*

Response: Yes. Riparian areas with near surface groundwater and secure flows are much more resilient to climate change than the existing rangeland. Baseline data collection before and after the earthwork will enable us to track progress towards restoring native species assemblages including trees, shrubs, and wetlands. Tracking water temperature, sediment loads, and flow rates will help us assess progress towards improving water quality and on-site water storage. Placing structures in the upper watershed will reduce the sediment supplied to the lower reach over time and improve water quality. Additionally, placing structures in the upper watershed will slow the release of water as structures create channel roughness and reduce the efficiency of water transport. This will allow for a more consistent supply of water throughout the summer and attenuate the highest peak flows. The BRAT model could identify much of the upper watershed as capable of supporting PBR structures at present. Slowing the speed of water moving across the project site and spreading the water out will make the site better able to support a Riparian Cottonwood Gallery species assemblage given the anticipated increased duration and intensity of heat waves, increased precipitation variability and reduced winter snowpack. The interviews and surveys we conduct will help us braid indigenous, Western scientific and local knowledge. Removing invasive species is crucial to providing more habitat for native species. Russian Olive must be removed to enable the growth of the intended multistory tree canopy that will provide shade to water, thus cooling it and enabling it to better support native fish assemblages. The earthwork is critical for transforming the currently channelized Battle Creek. Reshaping how water flows across the site are fundamental for regenerating stream and riparian habitat to support the species we have identified as our conservation priorities.
Planting native species, selected based on Indigenous knowledge and priorities coupled with Western scientific models (results from climate models brought to bear on species distribution models) will engage a wide array of volunteers who have already expressed interest and commitment to revegetating the site. This includes volunteers from nearby communities, USU students and faculty, Procter & Gamble employees, and others. Fencing will protect planted trees and shrubs.

- *In addition to drought resiliency measures, does the proposed project include othernatural hazard risk reductions for hazards such as wildfires or floods?*

Response: Yes. The current culvert infrastructure is vulnerable to increasing flood hazards. Proposed water infrastructure will incorporate climate modeling to anticipate potential future flows and reduce

| |
|---|
| flood hazards. The existing culvert at Hot Springs Road is undersized and partially clogged most of the time, and the road is overtopped with flood water occasionally. Beaver Dam Analogs and restoring wetlands using Processes Based Restoration structures will make the watershed more resilient to flash floods and reduce natural hazard risks. |
| • *Will the proposed project establish and use a renewable energy source?* |
| Response: No |
| • *Will the proposed project reduce greenhouse gas emissions by sequestering carbon insoils, grasses, trees, and other vegetation?* |
| Response: Yes, reforesting and expanding the riparian ecosystem will reduce greenhouse gasses.. We will also use biochar kilns to pyrolyze biomass from invasive species like Russian Olive and produce biochar. This biochar will be buried as a soil amendment that will also sequester carbon on-site. We estimate producing around 1,000 lbs. pounds of biochar in the first year, 800 pounds in the second year, and 200 pounds in the third year. Using an atmospheric carbon conversion ratio of 2.93 times the biochar weight, we estimate sequestering 5,860 pounds (about the weight of an elephant) of CO2 in the project's first three years. Restoring riparian and floodplain habitat to a traditional willow and cottonwood gallery will sequester carbon in new tree growth. This restoration will also enhance water storage capacity of the floodplain by slowing flows across the parcel, including runoff from rainwater and snowmelt. This wetland will expand year-round habitat for native wildlife and fish, benefiting the Bear River downstream. Beavers reside in the area and the number of dams will increase, trapping sediment and improving water quality. We anticipate native vegetation, particularly the afforestation along this riparian corridor, will contain more carbon than the agricultural fields to be submerged as the braided stream and riparian habitats regenerate. |
| • *Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water?*<br>• *Does this infrastructure complement other green solutions being implemented throughout the region or watershed?* |
| Response: No |
| • *Does the proposed project seek to reduce or mitigate climate pollutions such as air orwater pollution?* |
| Response: Yes, increasing tree cover will reduce air pollution and increasing natural water filtration capacity will address water pollution. |
| • *Does the proposed project have a conservation or management component thatwill promote healthy lands and soils or serve to protect water supplies and its associated uses?* |
| Response: Yes. An adaptive management plan that prioritizes native habitat and soil health will reduce erosion and sediment runoff to protect water supplies and downstream water users. |
| • *Does the proposed project contribute to climate change resiliency in other ways notdescribed above?* |
| Response: N/A |
| **Disadvantaged or Underserved Communities: E.O. 14008 and E.O. 13985 affirm theadvancement of environmental justice and equity for all through the development and funding of programs to invest in disadvantaged or underserved communities.** |
| • *Will the proposed project serve or benefit a disadvantaged or historically underservedcommunity? Benefits can include, but are not limited to, public health and safety through water quality improvements, new water supplies, or economic growth opportunities.* |
| Response: N/A |
| • *If the proposed project is providing benefits to a disadvantaged community,provide sufficient information to demonstrate that the community meets the applicable state criteria or meets the definition in Section 1015 of the Cooperative Watershed Act, (i.e., defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the state).* |

Response: Yes. The project will benefit the Northwestern Band of the Shoshone Nation.

- *If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particularcharacteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.*

Response:
The NWBSN is historically and socially disadvantaged with limited resources and are not seeking other agricultural producers as partners. The NWBSN has recently acquired ownership of the land where the Bear River Massacre occurred. The scope of the project is limited to that historical site.

1. **Tribal Benefits:** ***The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President'smemorandum, Tribal Consultation and Strengthening Nation-to Nation Relationships,asserts the importance of honoring the Federal government's commitments to Tribal Nations.***

- *Does the proposed project support Tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?*

Response: There are historic drought conditions in the area. In September of 2021, the Tribe declared a drought emergency on its lands in Southern Idaho. The Governor of Utah has also issued a drought emergency for the entire state. The project location is on a contiguous county to Utah and about 12 miles north of the Utah State Line. The State of Idaho has been issuing drought emergency actions throughout the state as has the United States Department of Agriculture. Riparian ecosystems are more resilient to climate perturbations than the simplified agro-ecosystem that currently exists at Bear River Massacre site. The site currently bears the scars of multigenerational legacies of settler population impacts, including water siltation from livestock grazing, channelization, water diversion, and excessive phosphorus loading from agriculture. Transforming much of the site to native riparian habitat along the Bear River and Battle Creek will increase the adaptive capacity of the site to provide habitat to endemic species and improve water quality and water storage. This will enable the site to absorb increased variability in total precipitation, reduced snowpack, and increased temperature variability.

- *Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?*

Response: Yes. This project will allow the Tribe to manage its water and continue to protect its water rights in this area. The project will assist in addressing these emergency drought conditions because the extreme water loss will be eliminated. The development, management and the protection of Tribal water irrigation will significantly improve. The Tribe can track its water use and practice emergency drought actions without overusing the full water rights they possess. The Tribe does not want to increase consumptive use and believes this new deliver system will aide in water conservation in the Bear River Watershed. Also, a successful project will lead to less operation and maintenance of the water system. If/When the Bear River is adjudicated, through the State, the Tribe will have had all its water assets in constant use and assigned to its specific land and wetlands use and water used in the Bear River Watershed. It gives the Tribe more knowledge and more security of their land and water rights. It will lead to other projects in the future that will be managed by the Tribe. The Tribe will continue to employee an Executive Director, a Chief Financial Officer, and a Project Manager because of a successful project. The Tribe will also continue to retain engineering and legal services and grow future size of projects and funding. The Tribe has diligently attempted to acquire the lands of the Bear River Massacre Site. During this process of property acquisition, they have also acquired various water rights. These rights are summarized in the table below. These rights come from a variety of

stream, springs and canal sources that have been previously used for agricultural, domestic, and stock-watering purposes.

| WATER RIGHT NUMBER | PRIORITY | SOURCE | FLOW (CFS) | QUANTITY (AF) | AREA (Acres) |
|---|---|---|---|---|---|
| 13-4143 | 5/15/1968 | Unnamed Spring (tributary to Battle Creek) | 0.02 | 14.5 | 0.50 |
| 13-4228 | 6/1/1963 | Unnamed Stream Springs | 0.68 | 119.0 | 34.00 |
| 13-7969 | 5/1/1907 | Battle Creek | 0.33 | 175.0 | 50.00 |
| 13-7970 | 3/3/1913 | Battle Creek | 1.10 | 175.0 | 50.00 |
| 13-7990 | 5/1/1885 | Battle Creek | 0.73 | 409.5 | 117.00 |
| 13-7991 | 7/11/1883 | Haw Bush Spring, Spring, Tank Spring | 0.59 | 409.5 | 117.00 |
| 13-937 | 5/1/1902 | Battle Creek | 0.70 | 122.5 | 35.00 |
| 13-939 | 5/1/1907 | Battle Creek | 0.27 | 66.5 | 19.00 |
| 13-940 | 3/3/1913 | Battle Creek | 0.90 | 220.5 | 63.00 |
| 13-975 | 7/10/1883 | Bear River (Battle Creek Irrigation Company) | 0.86 | 239.68 | 68.48 |
| | | | | | |
| **TOTAL** | | | **6.18** | **1,951.68** | **553.98** |

The NWBSN has identified the following expected environmental, economic, and social outcomes as part of this Battle Creek Project. This is a culmination of many years of work by members of the NWBSN to recover lost lands including the sacred site of the
Bear River Massacre, and to gather and catalogue archival stories, images, and songs of the Shoshone people. The NWBSN have an important story to tell and want to create a
meaningful and memorable experience as part of their continued preservation and revitalization of their history and culture. Some expected outcomes are:

• Development of a resource to connect present and future generations of the NWBSN to their historical and cultural heritage.
• Provide a place for the NWBSN to share and teach their native culture.
• To grow advocates for the NWBSN tribe
• To build bridges between cultures.
• Provide additional recreational access to Tribal members.
• Restore native vegetation communities in degraded uplands, wetlands, and riparian habitats. • Enhance access to and restore the riparian functions of the Battle Creek canal and the banks of the Bear River on Tribal Land.
• Improve wildlife and fisheries habitat throughout the site.
• Improve water quality by expanding and enhancing existing wetlands.

# V. BUDGET

# BUDGET

Total Project Cost Table

| SOURCE | AMOUNT |
|---|---|
| Costs to be reimbursed with the requested Federal funding | $ 1,999,711 |
| Costs to be paid by the applicant | $ 196,000 |
| Value of third-party contributions | $ 806,457 |
| **TOTAL PROJECT COST** | **$ 3,002,168** |

| FUNDING SOURCES | AMOUNT |
|---|---|
| Non-Federal Entities | |
| The Northwestern Band of the Shoshone Nation | $ 196,000 |
| Reclamation NAAO - PL 638 | $ 215,285 |
| The Bear River ECC | $ 55,000 |
| Trout Unlimited | $ 299,172 |
| Utah Nature Conservancy | $ 25,000 |
| Sageland Collaboration | $ 12,000 |
| BEF | $ 200,000 |
| **Requested Reclamation Funding** | **$ 1,999,711** |

| BUDGET ITEM DESCRIPTION | Total Cost | Reclamation | Tribe (IN-KIND) | BOR PL 638 (Cash) | Bear River ECC (Cash) | Trout Unlimited (Cash) | Utah Nature Consernancy | Sageland Collaborative (inkind) | BEF (Cash) |
|---|---|---|---|---|---|---|---|---|---|
| **Salaries And Wages** | | | | | | | | | |
| Prorgam Manager Tribe (in-kind) | $ 196,000.00 | $ - | $ 196,000 | | | | | | |
| Tribal Program Staff (cash donation) | $ 31,930.00 | $ - | | | | $ 31,930 | | | |
| Prorgam Manager Trout Unlimited (donated) | $ 30,930.00 | $ - | | | | $ 30,930 | | | |
| Trout Unlimited Staff (donated) | $ 12,930.00 | $ - | | | | $ 12,930 | | | |
| Utah State University Staff (donated) | $ 80,010.00 | $ - | | | | $ 80,010 | | | |
| **Travel** | | | | | | | | | |
| Trout Unlimited Staff (donated) | $ 6,000.00 | $ - | | | | $ 6,000 | | | |
| **Equipment** | | | | | | | | | |
| SCADA System Diversion | $ 20,000.00 | $ 20,000 | | | | | | | |
| Mayfly Sensors | $ 20,000.00 | $ - | | | | $ 20,000 | | | |
| **Ecological Studies Contracts** | | | | | | | | | |
| BioWest Engineers | $ 20,000.00 | $ - | | | | $ 20,000 | | | |
| BioChar Production, USU Extention | $ 15,000.00 | $ - | | | | $ 15,000 | | | |
| **Contractual** | | | | | | | | | |
| Engieering & Design | $ 255,000.00 | $ 200,000 | | | $ 55,000 | | | | |
| Biologists | $ 121,000.00 | $ 121,000 | | | | | | | |
| Archeologist | $ 60,500.00 | $ 60,500 | | | | | | | |
| **Construction** | | | | | | | | | |
| Battle Creek Restoration | $ 834,911.00 | $ 834,911 | | | | | | | |
| Diversion Structure Installation | $ 450,000.00 | $ 250,000 | | | | | | | $ 200,000 |
| Culvert Installation (2) | $ 50,000.00 | $ 50,000 | | | | | | | |
| Beaver Dam Analogs | $ 37,000.00 | $ 25,000 | | | | | | $ 12,000 | |
| Bear River Bank Stablization | $ 198,800.00 | $ 198,800 | | | | | | | |
| Revegetation Native Species | $ 120,000.00 | $ 120,000 | | | | | | | |
| Russian Olive Removal | $ 59,500.00 | $ 34,500 | | | | | $ 25,000 | | |
| Piping 2 Earthen Laterals | $ 142,340.00 | $ - | | $ 142,340 | | | | | |
| Spring Water Lateral | $ 72,945.00 | $ - | | $ 72,945 | | | | | |
| **Other** | | | | | | | | | |
| BOR Staff - Archeogist | $ 25,000.00 | $ 25,000 | | | | | | | |
| Cultural Resources Permitting | $ 60,000.00 | $ 60,000 | | | | | | | |
| Evidence Gathering USU Techs | $ 15,000.00 | $ - | | | | $ 15,000 | | | |
| Results Sharing USU | $ 5,000.00 | $ - | | | | $ 5,000 | | | |
| Coordination Meetings wth Contractors | $ 62,372.00 | $ 0 | | | | $ 62,372 | | | |
| **TOTAL DIRECT COSTS** | | $ 1,999,711 | $ 196,000 | $ 215,285 | $ 55,000 | $ 299,172 | $ 25,000 | $ 12,000 | $ 200,000 |
| | $ 3,002,168.00 | | | | | | | | |

| BUDGET ITEM DESCRIPTION | Computation | | Quantity Type | Total Cost |
|---|---|---|---|---|
| | $/UNIT | Quantity | | |
| **Salaries And Wages** | | | | |
| Prorgam Manager Tribe (in-kind) | 48.08 | 4077 | Hours | $ 196,000.00 |
| Tribal Program Staff (cash donation) | 31,930 | 1 | LS | $ 31,930.00 |
| Prorgam Manager Trout Unlimited (donated) | 30,930 | 1 | LS | $ 30,930.00 |
| Trout Unlimited Staff (donated) | 12,930 | 1 | LS | $ 12,930.00 |
| Utah State University Staff (donated) | 80,010 | 1 | LS | $ 80,010.00 |
| **Travel** | | | | |
| Trout Unlimited Staff (donated) | 6,000 | 1 | LS | $ 6,000.00 |
| **Equipment** | | | | |
| SCADA System Diversion | 20,000 | 1 | LS | $ 20,000.00 |
| Mayfly Sensors | 5,000 | 4 | Unit | $ 20,000.00 |
| **Ecological Studies Contracts** | | | | |
| BioWest Engineers | 20,000 | 1 | LS | $ 20,000.00 |
| BioChar Production, USU Extention | 15,000 | 1 | LS | $ 15,000.00 |
| **Contractual** | | | | |
| Engieering & Design | 255,000 | 1 | LS | $ 255,000.00 |
| Biologists | 121,000 | 1 | LS | $ 121,000.00 |
| Archeologist | 60,500 | 1 | LS | $ 60,500.00 |
| **Construction** | | | | |
| Battle Creek Restoration | 834,911 | 1 | LS | $ 834,911.00 |
| Diversion Structure Installation | 450,000 | 1 | LS | $ 450,000.00 |
| Culvert Installation (2) | 50,000 | 1 | LS | $ 50,000.00 |
| Beaver Dam Analogs | 37,000 | 1 | LS | $ 37,000.00 |
| Bear River Bank Stablization | 142 | 1400 | Feet | $ 198,800.00 |
| Revegetation Native Species | 1,200 | 100 | Acres | $ 120,000.00 |
| Russian Olive Removal | 4,250 | 14 | Crews | $ 59,500.00 |
| Piping 2 Earthen Laterals | 142,340 | 1 | LS | $ 142,340.00 |
| Spring Water Lateral | 72,945 | 1 | LS | $ 72,945.00 |
| **Other** | | | | |
| BOR Staff - Archeogist | 25,000 | 1 | LS | $ 25,000.00 |
| Cultural Resources Permitting | 60,000 | 1 | LS | $ 60,000.00 |
| Evidence Gathering USU Techs | 15,000 | 1 | LS | $ 15,000.00 |
| Results Sharing USU | 5,000 | 1 | LS | $ 5,000.00 |
| Coordination Meetings wth Contractors | 1,733 | 36 | Months | $ 62,372.00 |
| **TOTAL DIRECT COSTS** | | | | |
| | | | | $ 3,002,168.00 |

# Budget Request Narrative for NRCS

## 1. Program Management: $196,000

***Program Management Tribe: $196,000*: (Tribe Contribution)** These funds will be paid to administer project management activities from Tribal employee, Brad Parry. This is 7% of the total project and represents 4,077 hours of working hours.

Project Manager, Brad Parry, will lead all solicitations to be posted and sent to contractors and be the head of the selection committee. Mr. Parry will make a recommendation to the Tribal Council, based on the selection criteria. Mr. Parry was the Program Coordinator for the Colorado River Basin Salinity Control Program for 11 years (2008-2019). He has been involved in all facets of Federal Grants and Contracts Rules and Regulations and has been trained in the FAR 200 management. Mr. Parry was a certified level II, Contracting Officer's Technical Representative, and a certified Grant's Officer Technical Representative from 2008-2019.

## 2. Equipment: $20,000

**BOR: $20,000**

Purchasing and Installation of a SCADA System for diversion structure.
Installing SCADA components that allow for remote monitoring of irrigation delivery system conditions (flow rates, water elevations, controls devices openings, etc.)

## 3. Contractual (see costs below per category)

All services will be contracted out to specialists. All engineering services will be provided by Brain Andrew and his team at Hansen, Allen & Luce Engineers. Hansen, Allen, and Luce (HAL) were competitively hired by the Tribe in 2017. HAL will assist the tribe in all engineering and eligible TA activities for a successful completion of the project.

Mr. Andrew is a project manager at Hansen, Allen & Luce, Inc. (HAL) and has over 20 years of professional experience in water resources engineering. He has helped plan, design, and complete numerous water development projects for public- and private-sector clients. These projects have benefitted municipal and agricultural water users. Responsibilities include both engineering and management functions including estimating and oversight of project budgets, execution and oversight of engineering activities, construction, client relations and marketing assignments.

The Tribe will follow it's established rules of contract competition and solicit contracts for purchasing of materials, respectively - and will solicit for construction agreements. The Tribe uses "Best Value" when doing solicitations with major criteria of, work experience, past performance, cost etc.

**a) *Engineering & Design Services: $255,000: (see attached employee salary list)***

**BOR: $200,000, Bear River ECC: $55,000**

The firm will design the project in 30%, 60%, 90%, and final design stages. The firm will also begin doing construction observation on the area and assist in construction permits to install pipeline underneath the road and will assist the Tribe is preparing competitive solicitations for all contractor work in the project (equipment, materials, and construction)

***b) Biologist Contractors: $121,000 (see attached employee salary list)***

**BOR: $121,000**

BIO-WEST Inc. a company in Logan Utah, has years of experience implementing projects of this kind. BIO-West has been under contract with the NWBSN since 2019. Employees working on the project are. Darren Olsen: Company Vice President, Principal, Watershed Sciences Section Leader, Senior Hydrologist (Logan Office) and Bob Thomas, Professional Wetland Scientist (Logan Office)

- Contractors, during the life of the project will the plant success rates, water quality testing, wetlands monitoring all during the life of the project. Monitoring any successful general wildlife returns during the project. Monitor success of plantings and water development to set up successful long-term monitoring. Monitoring the success rate of removing invasive species such as Russian olive, phragmites, and thistle; and oversight of weed control during the project.
- Contractor studies and modeling to accurate implement construction restoration of the corridor.
- Restoration recommendations and design reports. This task includes filling in cross-section details and producing the plans needed to implement large-scale restoration activities.

***c) Archeologist Contractors: $60,500***

**BOR: $60,500**

- The archaeologist will be requested to be on site to observe construction of earth work.
- The archaeologist will be responsible for the completion of the written narrative and the compilation of GPS field data. The archaeologist will also complete the research and write up of sites encountered. The GIS and graphics staff will compile photographic and mapping data for the report and site forms. The Principal Investigator will edit the final document.
- Inventory and Travel. The archaeologist will carry out a pedestrian survey of the entire Area of Potential Effect. Survey and site locational data will be collected with a Trimble GeoXH or Juno differentially correctable GPS unit. Sites will be recorded according to state guidelines on the appropriate site form.

### *d) Diversion Structure: $450,000*

**BOR: $250,000 – BEF $200,000**

Construction and installation of a concrete diversion structure of for control diversion to help the channeling of the water from Battle Creek North to the South Battle Creek. The structure will be designed in 30%, 60%, 90%, and final design stages. The costs have been taken from similar projects installed by HAL and current concrete prices.

### *e) Culverts: $50,000*

**BOR: $50,000**

Design of two 3-Box Concrete Culverts (will be fish friendly). Construction and Implementation of the two 3-box culverts in the Battle Creek Tributary. The structure will be designed in 30%, 60%, 90%, and final design stages. The costs have been taken from similar projects installed by HAL, Trout Unlimited and current concrete prices.

### *f) Battle Creek Restoration: $834,911*

Construction of new Battle Creek Tributary Braids. Costs were collected from the Bureau of Reclamation, Allred Restoration and CAT.

| Equipment | QTY | Per Month | Months | Cost |
|---|---|---|---|---|
| Cat 330 Hydraulic Excavator | 1 | $ 10,100 | 4 | $ 40,400 |
| Fuel | $4.00/ Gal | $ 5,012 | 4 | $ 20,048 |
| CAT 304 Mini Excavator | 1 | $ 3,800 | 4 | $ 15,200 |
| Fuel | $4.00/ Gal | $ 1,325 | 4 | $ 5,300 |
| CAT 725 Articulated Truck | 2 | $ 25,400 | 4 | $ 101,600 |
| Fuel | $4.00/ Gal | $ 2,426 | 4 | $ 9,704 |
| D6N LGP VPAT Bulldozer | 1 | $ 12,700 | 2 | $ 25,400 |
| Fuel | $4.00/ Gal | $ 3,003 | 2 | $ 6,006 |
| DEF | $4.00/ Gal | $ 60 | 2 | $ 120 |
| Water Truck, 4,000 gl | 1 | $ 6,700 | 4 | $ 26,800 |
| | | | | $ 250,578 |

| Operators | QTY | Per Month | Months | Cost |
|---|---|---|---|---|
| Operators @ $1100/day | 4 | $ 88,000 | 4 | $ 352,000 |
| Per Diem @140/day | 4 | $ 11,200 | 4 | $ 44,800 |
| Moblization | 1 | $ 10,000 | 1 | $ 10,000 |
| SWPPP Work; straw bales, erosion fencing etc. | | | | $ 40,000 |
| Office Staff BOR Cultural | | | | $ 25,000 |
| Design Work | | | | $ 200,000 |
| Contingencies 14% | | | | $ 137,533 |
| | | | | $ 809,333 |

## g) ***Revegetation with Native Species: $120,000***

**BOR: $120,000**
Revegetation native species intensive over (100 acres @ $1,200 per acre $120,000)

- Revegetation planning using all native species. Create planting and seeding plans for native species revegetation and specify what quantities are necessary to accomplish revegetation objectives. Seed mixes and plantings will be developed for upland, riparian, and wetland habitats.
- Oversight will be provided for all planned restoration activities.
- Long-term monitoring and annual recommendations. Weed infestations are expected to occur around the project area following site restoration and revegetation efforts. Anticipated conducting annual monitoring, weed control, seeding, and plantings.

## *h) Bank Stabilization with Hot Spring Restoration: $198,800*

**BOR: $198,800**
Selective restoration within 1,400 linear feet of riverbank + hot spring + technical oversight ($142.00 a foot x 1,400 feet = $198,800)

- Use bio-engineered techniques such as soil lifts and bio-d block to stabilize areas of erosion or new construction and revegetate eroding slopes and/or riverbanks.
- Use restored, created, and enhanced wetlands to treat existing groundwater discharge and surface water runoff from feedlot and agricultural areas.
- Restore and/or enhance existing on-site surface water features (ex. Battle Creek) using bio-engineering techniques to enhance water quality functions and improve the water quality of the Bear River.
- The hot springs were used historically by the Tribe and attracted large gatherings in the middle of the winter during 1863 (and earlier). The hot springs are located on the banks of the Bear River on steep slopes next to a heavily grazed field. The slopes surrounding the springs and additional banks are currently unstable, barely accessible, and infested with noxious weeds. This task includes the construction restoration of the sacred hot springs and other corridor restoration, based on studies.

## *i) Russian Olive Removal and Technical Oversight: $59,500*

**BOR: $34,500, Utah Nature Conservancy $25,000**
5-man crews for 14 weeks ($4250 per week x 14 wks. = $63,750)
Costs were collected from recent project costs of Russian Olive Removal at the site by the Utah Conservation Corps.
These estimates are based on similar project work that has occurred in Russian Olive stands throughout northern and northeastern Utah. Estimates have been standardized for an eight-person crew for an 80-hour work week.
The Utah Nature Conservancy contributed $25,000, to remove 5 acres of Russian Olive that have been applied to the cost sharing of this agreement. The work was completed November 19th, 2021.

### *j) Beaver Dam Analogs: $37,000*

**BOR: $25,000 – Sageland Collaborative: $12,000 (in-kind)**
Wild Utah Project staff time: 60h X 39/hr = $2,340
Wild Utah Project vehicle mileage = $400
Volunteers for weed removal/BDA installs: 330 h X 27.20/hr = $8,976.00
(volunteers worth: https://nlctb.org/tips/value-of-volunteer-time/#:~:text=The%20results%20of%20that%20research,volunteer%20hour%20is%20currently%20%2427.20.)

To finish the installation of the BDA's – a contractor will be solicited for construction work with equipment to install permanent support posts for dams, drilling post holes, fencing and earth work in the tributary. Costs taken from similar projects done by Sageland Collaborative in the Jordan River watershed and studies done by USU.

## 4. Cultural Resources: $85,000 (BOR allocated $25,000)

The appropriate consultation has been occurring and will continue to occur with the US Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the Idaho State Historic Preservation Office (SHPO). NWBSN anticipates that a Clean Water Act Section 404 Permit/401 Certification will be required to obtain approval to perform restoration activities within existing wetlands. A Stream Alteration Permit will also be obtained from the Idaho Department of Water Resources. Given that one of the primary purposes of the project is to restore degraded wetlands and important wildlife habitat, NWBSN does not anticipate opposition to the issuance of these permits. The Tribe has a lot of consultation with the SHPO and State of Idaho Archeologist, to satisfy the requirements of Section 106 of the National Historic Preservation Act. Upon final approval from the SHPO, any historic or prehistoric sites or artifacts that could be impacted by the project will be documented, preserved, and displayed at the NWBSN's proposed Cultural Interpretive Center, which will be located near the site. Costs have been discussed with the BOR, Idaho State SHPO and BioWest Inc.

## 5. BOR PL 638 Contracts: $215,585

### *a) Piping 2 Laterals: $142,340*

Purchase and install 2 headgates, and a combined 580 linear feet of 12" PVC Conveyance Pipe. The project would also purchase and install double of the following: Weir Plate & Gage, Drop Structure, 120 Linear Feet RCP Casing, Rip/Rap and Fencing.

### *b) Spring Water Lateral: $72,945*

This is a new action which proposes to purchase and install: 1 pump, 1 storage tank and a combined 200 linear feet of 4" PVC Conveyance Pipe. Currently, this water is in a 4" PVC pipe that stops short of Tribal property and is lost. The project would be to install 4" PVC (above ground) to bring the water to the Tribal agricultural land. The spring is continuously flowing. To use the water efficiently and effectively a small pump will need to be purchased and installed to move the water to the ground. A small storage tank will also be needed store and use the water without loss.

## 6. Trout Unlimited: $299,172

Trout Unlimited Budget Form

**Salaries and wages**

| 1. Program staff salaries and wages<br>Title of position | Number of people | % time on project (min. 5%) | TU |
|---|---|---|---|
| Bear River Project Manager, Trout Unlimited | 1 | 10 | $24,000 |
| NWBSN Project Manager & Restoration Coordinator | 2 | 50 | $35,000 |
| Assistant Professor, USU | 1 | 35 | $30,000 |
| USU Students | 5 | 50 | $45,000 |
| NWBSN Youth Interns | 6 | 100 | $25,000 |
| TU Regional Grant Accountant | 1 | 5 | $3,000 |
| TU Communication Specialist | 1 | 5 | $3,000 |
| | | | |
| Total salaries and wages | | | $165,000 |
| Fringe benefits | | | $27,720 |
| Total salaries, wages, and benefits | | | $165,000 |
| | | | |
| | | | |

| 2. Contract services<br>Type of consultant or contractor | Number of days on project | Daily rate fee basis | |
|---|---|---|---|
| Bio-West | 108 | 1200 | $20,000 |

| | | | |
|---|---|---|---|
| BioChar Production, USU Extension | 20 | 1000 | $15,000 |
| Alred Restoration Engineers | | | |
| Construction - Stream Restoration | | | |
| | | | |
| Total contract services | | | $35,000 |
| | | | |
| **Other Expenses** | | | |
| 3. Travel | | | $6,000 |
| 4. Communications | | | $5,000 |
| 5. Capital expenses (supplies/materials/ equipment) | | | $20,000 |
| 6. Other (Specify line items) Evidence Gathering | | | $15,000 |
| 7. Overhead/Indirect Costs (WCS share can be max 10% of direct request amount). Unrealized overhead costs are not eligible for match. | | | $27,372 |
| **Total project expenses** | | | **$299,172** |

## EXPLANATION OF PROJECT BUDGET EXPENSE LINE ITEMS

Please provide details of all budget expense items in the required budget narrative.

1. Program salaries and wages: payments of salaries and wages to program staff allocated for work directly related to this project. Please indicate position title, number of people with this title working on the project, the percentage of each person's time devoted to the project and the calculated cost of that time.

For example:

| Title of position | No. of people | % Time on project | Total |
|---|---|---|---|
| Director of Conservation (annual salary $40,000) | 1 | 25% | $10,000 |

Benefits: costs other than wages or salaries that are attributable to the program employees above, such as Social Security, health insurance and pension contributions, prorated for this project. For example: If your organization's benefit package totals 15 % of gross salaries, the benefit for the Director of Conservation would be $1,500 (.15 x $10,000).

2. Administrative salaries and wages: payments of salaries and wages for time of non-program staff allocated to this project. (i.e.: director, accounts manager, etc.). Please indicate position title, number of people with this title, the percentage of each person's time devoted to the project and the calculated cost of that time.

3. Contract services: costs of personnel who are not on the staff of your organization, but whose services are required to complete the project successfully. This could include consultants, technicians, laborers, advisers, and support personnel. Please specify type of contractor, number of days committed to this project, rate charged per day (or other fee basis) and calculated total cost.

4. Travel: transportation and accommodations, per diem and mileage allowances, and lodging expenses or staff and contract personnel associated with the project.

5. Evidence Gathering: all costs for collecting, gathering, monitoring, evaluating evidence or data associated with the project's evidence gathering plan. Do not include payments to individuals that belong under 'Salaries and wages."

6. Results Sharing: all costs for sharing, promoting, communicating, disseminating results and lessons learned from the project.

6. Capital expenses: costs of project materials, supplies and other consumables, vehicles, and equipment; renovations or improvements involving structural changes; and other capital expenditures directly associated with this project. Please make clear in budget narrative whether equipment costs are purchase or rental charges.

7. Overhead/Indirect Costs: rent, utilities, insurance, office supplies, telephone, internet, or other similar expenses allocated to this project. Note that the Wildlife Action Opportunities Fund will support a maximum overhead charge of 10% the amount of your grant request.

8. Other expenses: all other expenses directly related to this project that are not included in the categories above. Please specify type of expense on budget form and provide additional detail.

**EXHIBIT T.O. 418.03.320-2-B**

# STANDARD FEE SCHEDULE
# 2021

## PERSONNEL CHARGES

Client agrees to reimburse Hansen, Allen & Luce, Inc. (HAL), for personnel expenses directly related to the completion of the project, in accordance with the following:

| | |
|---|---|
| Senior Managing Professional | $197.10/hr |
| Managing Professional | $174.84/hr |
| Senior Professional III | $168.76/hr |
| Senior Professional II | $160.53/hr |
| Senior Professional I | $148.70/hr |
| Professional III | $139.52/hr |
| Professional II | $125.13/hr |
| Professional I | $117.30/hr |
| Professional Intern | $106.03/hr |
| Engineering Student Intern | $55.80/hr |
| Water Right Specialist | $120.00/hr |
| Geologist | $122.57/hr |
| Senior Designer | $112.33/hr |
| Senior Field Technician | $112.33/hr |
| Field Technician | $91.23/hr |
| CAD Operator | $91.23/hr |
| Public Relations Specialist | $139.51/hr |
| Administrative Assistant | $66.95/hr |
| Professional Land Surveyor | $128.39/hr |
| 1 Man GPS Surveying Services – PLS | $153.00/hr |
| Drone Pilot | $180.00/hr |
| Expert Legal Services | $300.00/hr |

## DIRECT CHARGES

Client also agrees to reimburse HAL for all other costs directly related to the completion of the project. Direct charges shall include, but not be limited to, the following:

| | |
|---|---|
| Communication, Computer, Reproduction | $6.00 per labor hour |
| Out-of-town per diem allowance (lodging not included) | $46.60 per day |
| Vehicle | $0.65 per mile |
| Outside consulting and services | Cost plus 10% |
| Other direct expenses incurred during the project | Cost plus 10% |
| Trimble GPS Unit | $130.00 per day |
| Data Logger/Transducer | $125.00 per week |

INTEREST CHARGE AFTER 30 DAYS FROM INVOICE DATE ..... 1.5% per month

Note: Annual adjustments to personnel and direct expense charges will occur in January of each year. Mileage rate changes are based on fuel prices.

**BIO-WEST, Inc.**

**Budget Prepared For: Hansen Allen & Luce**

**Boa Ogoi**

| LABOR CATEGORY: | Rate | Aquatic Resources Inventory of Warm Springs Road 1.9-miles or 34 acres | | Comprehensive Report and Mapping and Additonal Site Visit with Corps | | Remote Sensing and Mapping of Entire Project Area | | Total |
|---|---|---|---|---|---|---|---|---|
| | | Hours | Cost | Hours | Cost | Hours | Cost | |
| B. Thomas (PM/Wetland Scientist) | 116.29 | 14 | 1,628.06 | 12 | 1,395.48 | 4 | 465.16 | 3,488.70 |
| T. Taylor (Wetland Scientist) | 95.42 | 16 | 1,526.72 | 22 | 2,099.24 | 16 | 1,526.72 | 5,152.68 |
| R. Dillingham (Wetland Technician) | 62.62 | 16 | 1,001.92 | 36 | 2,254.32 | 0 | 0.00 | 3,256.24 |
| A. Crookston (GIS mapping) | 70.07 | 0 | 0.00 | 8 | 560.56 | 28 | 1,961.96 | 2,522.52 |
| C. VanZanten (Editor) | 77.53 | 0 | 0.00 | 4 | 310.12 | 0 | 0.00 | 310.12 |
| **Total Labor** | | **46** | **4,156.70** | **82** | **6,619.72** | **48** | **3,953.84** | 14,730.26 |

| TRAVEL: | Rate | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| Mileage | 0.58 | 80 | 46.40 | 80 | 46.40 | 0 | 0.00 | 92.80 |
| **Total Travel** | | **46.40** | | **46.40** | | **0.00** | | **92.80** |

| OTHER DIRECT COSTS: | Rate | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| GPS Rental | 100.00 | 1 | 100.00 | 0 | 0.00 | 0 | 0.00 | 100.00 |
| **Total Other** | | **100.00** | | **0.00** | | **0.00** | | **100.00** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Task Total** | | **$4,303.10** | | **$6,666.12** | | **$3,953.84** | | **$14,923.06** |

Jim DeRito
*Bear River Project Manager*

47 North 300 East
Providence, UT 84332
Phone: 208-360-6165
email: jderito@tu.org

Date: December 8, 2021

Project Lead: The Northwestern Band of the Shoshone Nation
Address: 2575 Commerce Way, Ogden, Utah 84401

RE: WaterSMART: **Notice of Funding Opportunity No. R22AS00026**

Dear Project Leader:

I am writing to document Trout Unlimited's support of the Northwestern Band of Shoshone Nation's proposal to the Bureau of Reclamation's WaterSMART *"Environmental Water Resources Projects for Fiscal Year 2022"* Program, titled "*The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs)*". Trout Unlimited is familiar with the proposal, understands general expectations, and supports the efforts to address the natural resource concerns identified in therein.

If this WaterSMART proposal is selected for funding, Trout Unlimited will provide partner cash contributions equal to the total amount of $299,172 over 3 years to this project. These are private funds being provided to TU in partnership with the Tribe and Utah State University from the Wildlife Conservation Society's Climate Adaptation Fund.

| **Partner Name** | **Cash vs. In-Kind** | **Amount ($)** | **Contribution Category** (Status) | Funding Available |
|---|---|---|---|---|
| Trout Unlimited | Cash | 299,172 | Funded | 12/01/2021 |

We will continue to assist the Tribe with this project and the important benefits it will have for Battle Creek and the Bear River. We also recognize the important historical preservation aspects of this area and want to continue to enhance working relationships with the Tribe and interested parties.

Sincerely,

James DeRito

Jim DeRito

**From:** **Miriam Hugentobler** miriam.hugentobler@gmail.com
**Subject:** ECC Letter of Support for NWB's WaterSMART Grant Application
**Date:** December 8, 2021 at 4:35 PM
**To:** Bradley Parry bparry@nwbshoshone.com
**Cc:** Stenberg, Mark (PacifiCorp) Mark.Stenberg@pacificorp.com

MH

Brad,

A completed Bear River ECC letter of support for the Northwestern Band of Shoshone's WaterSMART grant application is attached. Please feel free to contact me if you need anything further.

Wishing you success on your grant application--

Miriam Hugentobler
Bear River ECC
(801) 652-8983

FY_2022
WATER...C.docx

**Date:** December 6, 2021

**Partner:** PacifiCorp's Bear River Hydroelectric Project Environmental Coordination Committee (ECC) (Committee members include PacifiCorp, U.S. Fish & Wildlife Service, U.S. Bureau of Land Management, U.S. National Park Service, USDA-Forest Service, Shoshone-Bannock Tribes, Idaho Department of Environmental Quality, Idaho Department of Fish and Game, Idaho Department of Parks and Recreation, Trout Unlimited, Idaho Rivers United, Greater Yellowstone Coalition, and American Whitewater)

**Address:** Mark Stenberg, PacifiCorp, 822 Grace Power Plant Rd, Grace, ID 83241

**Project Lead**: The Northwestern Band of the Shoshone Nation
**Address:** 2575 Commerce Way, Ogden, Utah 84401

**RE:** WaterSMART: **Notice of Funding Opportunity No. R22AS00026**

Dear Project Leader:

I am writing to document the Bear River Hydroelectric Project Environmental Coordination Committee's (ECC) support of the Northwestern Band of Shoshone Nation's proposal to the Bureau of Reclamation's WaterSMART *"Environmental Water Resources Projects for Fiscal Year 2022"* Program, titled "*The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs).*" The ECC is familiar with the proposal, understands general expectations, and supports the efforts to address the natural resource concerns identified therein.

The Bear River ECC was formed out of a Settlement Agreement for the continued operation of PacifiCorp's Bear River Hydroelectric Project ("the Project"). The Project is comprised of three hydroelectric developments along the Bear River in southeastern Idaho. The signatories to the Settlement Agreement comprise the membership of the ECC. The ECC has several coordination roles in the ongoing operation of the Project, including the administration of funds for habitat enhancement and land conservation provided annually by PacifiCorp through the 30-year term of the Federal Energy Regulatory Commission license

The ECC has provided partner contribution equal to the total amount of $55,000 for design of a diversion structure and culverts in Battle Creek on the Tribe's property.

| **Partner Name** | **Cash vs. In-Kind** | **Amount ($)** | **Contribution Status** | Funding Available |
|---|---|---|---|---|
| Bear River ECC | Cash | 55,000 | Funded | 07/07/2021 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

We will continue to advise the Tribe to ensure that this project strengthens the watershed in the Battle Creek area and preserves the important history of this area. We anticipate that this project will strengthen the relationship between our working group and the Tribe, as well as with other consulting and interested parties.

The ECC is hereby providing a letter of the support for Northwestern Band of the Shoshone Nation's RCCP application with the Bureau of Reclamation, WaterSMART fiscal year 2022 program.

This memorandum is submitted by Mark Stenberg on behalf of the ECC, as approved by vote on December 8, 2021. If you have questions please contact Mark Stenberg, PacifiCorp's Bear River Hydroelectric Project Environmental Coordinator, mark.stenberg@pacificorp.com, (208) 339-9552, 822 Grace Power Plant Rd, Grace, ID 83241.

SAGELAND
COLLABORATIVE
SCIENCE IN SERVICE OF WILDLIFE AND WILDLANDS

Partner: Sageland Collaborative
824 S 400 W Suite B119
Salt Lake City, UT, 84101

December 7, 2021

Project Lead: The Northwestern Band of the Shoshone Nation
Address: 2575 Commerce Way, Ogden, Utah 84401

RE: WaterSMART: **Notice of Funding Opportunity No. R22AS00026**

Dear Project Leader:

I am writing to document Sageland Collaborative's support of the Northwestern Band of Shoshone Nation's proposal to the Bureau of Reclamation's WaterSMART *"Environmental Water Resources Projects for Fiscal Year 2022"* Program, titled "*The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs)*". Sageland Collaborative is familiar with the proposal, understands general expectations, and supports the efforts to address the natural resource concerns identified in therein.

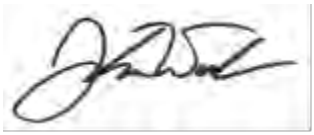
If this WaterSMART proposal is selected for funding, Sageland Collaborative commits to providing partner contribution equal to the total amount of $12,000, of in-kind funding to this project over 3 years. This in-kind funding will be used for design and implementation of beaver dam analogs in Battle Creek.

| **Partner Name** | **Cash vs. In-Kind** | **Amount ($)** | **Contribution Status** | Funding Available |
|---|---|---|---|---|
| Sageland Collaborative | In-Kind | 12,000 | Funded | 03/01/22 |

We will continue to advise the Tribe to ensure that this project strengthens the Battle Creek watershed and preserves the important history of this area. We anticipate that this project will strengthen the working relationship between our organization and the Tribe, as well as with other consulting and interested parties.

Sincerely,

*Rose M Smith*
Stream Ecologist



*Joshua Wood*
Executive Director
*Authorized Signatory for*
*Sageland Collaborative*

United States Department of the Interior
BUREAU OF RECLAMATION
125 South State Street, Room 8100
Salt Lake City, UT 84138-1102

IN REPLY REFER TO:
UC-403
2.2.4.21

VIA ELECTRONIC MAIL ONLY

Mr. Brad Parry
The Northwestern Band of the Shoshone Nation
2575 Commerce Way
Ogden, UT 84401
bparry@nwbshoshone.com

Subject: Support for Northwestern Band of Shoshone's Battle Creek Ecological Restoration Project (WaterSMART Notice of Funding Opportunity No. R22AS00026)

Dear Mr. Parry:

I am writing to document the Bureau of Reclamation, Upper Colorado Basin Region Native American Affairs Program support of the Northwestern Band of Shoshone Nation proposal to the Reclamation Environmental Water Resources Projects for Fiscal Year 2022 (WaterSMART Notice of Funding Opportunity No. R22AS00026). Reclamation is familiar with the proposal, titled "The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs)," and understands the general expectations and efforts to address the natural resource concerns identified therein.

Reclamation Native American Affairs Program will provide partner contribution equal to the total amount of $215,285.00 via Public Law (PL) 638 contract over 2 years to this project as cost share.

| Partner Name | Cash vs In-Kind | Amount ($) | Contribution Category | Status of Funding | Approximate Funding Available |
|---|---|---|---|---|---|
| NAIAO Bureau of Reclamation | Cash | $142,340 | Piping 2 Earthen Laterals | Selected for Funding | P.L. 638 Contract 3/01/2022 |
| NAIAO Bureau of Reclamation | Cash | $72,945 | Piping Spring Water Flow Lateral in Battle Creek | Selected for Funding | P.L. 638 Contract 3/01/2022 |

We will continue to advise the Tribe to ensure that this project strengthens the watershed in the Battle Creek Ecological areas and preserves the important history of Sowo Gahni. We anticipate that this project will strengthen the working relationship between our office and the Tribe, along with other consulting and interested parties. Please feel free to contact me at (970) 317-1487 or erheaume@usbr.gov if you have any questions. For the hearing impaired please call the Federal Relay System at (800) 877-8339 (TTY).

Sincerely,

Ernie Rheaume
Native American Affairs Program Manager
Upper Colorado Basin Region

cc:. Brandi Rose Worthington
Program Coordinator
broseworthington@usbr.gov

Rachel Bennett
Indian Self Determination Specialist
rbennett@usbr.gov

Kelly Titensor
Native American Affairs Advisor
ktitensor@usbr.gov

Kathy Callister
Resource Management Division Manager
kcallister@usbr.gov

The Nature Conservancy

The Nature Conservancy in Utah
559 East South Temple
Salt Lake City, UT 84102

**tel** [801] 531-0999
**fax** [801] 359-0496
**nature.org/utah**

7 December 2021

Brad Parry Project Lead: The Northwestern Band of the Shoshone Nation
2575 Commerce Way, Ogden, Utah 84401

RE: WaterSMART: **Notice of Funding Opportunity No. R22AS00026**

Dear Brad:

I am writing to document Utah Nature Conservancy's support of the Northwestern Band of Shoshone Nation's proposal to the Bureau of Reclamation's WaterSMART *"Environmental Water Resources Projects for Fiscal Year 2022"* Program, titled "*The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs)*". The Utah Nature Conservancy is familiar with the proposal, understands general expectations, and supports the efforts to address the natural resource concerns identified in therein.

For your information, if this WaterSMART proposal is selected for funding, Utah Nature Conservancy has been honored to provided partner contribution equal to the total amount of $25,000 over one year to this project, for Russian olive removal.

| **Partner Name** | **Cash vs. In-Kind** | **Amount ($)** | **Contribution Category** (Status) | Funding Available |
|---|---|---|---|---|
| Utah Nature Conservancy | Cash | 25,000 | Funded | 08/01/2021 |

We hope to continue to work with the Tribe in the Battle Creek and Bear River watershed. We anticipate that this project will strengthen the working relationship between us and the Tribe, as well as with other interested stakeholders.

Please let met know if you have any questions or concerns.

Sincerely,

Dave Livermore
State Director
Utah Chapter

December 6, 2021

Mr. Brad Parry
Vice Chairman
Northwestern Band of the Shoshone Nation
2527 Commerce Way
Ogden, Utah 84401

RE: Bureau of Reclamation Funding Opportunity No. R22AS00026 – WaterSMART Environmental Water Resources Projects (EWRP) for Fiscal Year 2022.

Dear Mr. Parry:

I am writing to document that the Bonneville Environmental Foundation (BEF) supports the Northwestern Band of the Shoshone Nation's (Tribe) efforts to restore ecosystem function to lower Battle Creek and the Bear River in Franklin County, Idaho. Furthermore, BEF supports the Tribe's efforts to secure funding for this purpose from the WaterSMART EWRP funding opportunity. The BEF is familiar with the proposal, understands general expectations, and supports the efforts to address the natural resource concerns identified therein.

The Tribe has applied for funding from BEF's – Bear River Basin Water Stewardship Projects program. The status of the funding is pending and still must secure final approval before funds can be awarded. If this proposal is selected for funding, BEF will provide a contribution equal to the total amount of $200,000 over 2 years to this project. BEF will be making a final funding decision by the end of January 2022.

Thank you for your consideration.

Sincerely,

Scott McCaulou
smccaulou@b-e-f.org
Director, Water Stewardship Project Portfolio
Bonneville Environmental Foundation

S.J. & JESSIE E. QUINNEY
COLLEGE of
NATURAL RESOURCES
UtahStateUniversity

Department of Environment & Society
Quinney College of Natural Resources
5200 Old Main Hill
Logan, UT
84322

Supporting Partner: Utah State University
Date: 12/6/2021

Project Lead: Northwestern Band of the Shoshone Nation Address: 2575 Commerce Way, Ogden, Utah

RE: WaterSMART: Notice of Funding Opportunity No. R22AS00026

Dear Project Leader:

I am writing to document the support of our graduate student team from the Climate Adaptation Science program at Utah State University for the Northwestern Band of Shoshone Nation's proposal to the Bureau of Reclamation's WaterSMART "Environmental Water Resources Projects for Fiscal Year 2022" Program, titled "The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs)".

We are a team of interdisciplinary graduate students and professors from Utah State University's Climate Adaptation Science program and are familiar with the proposal, understand general expectations, and support the efforts to address the natural resource concerns identified by the Northwestern Band of the Shoshone. We look forward to collaborating with the Northwestern Band of the Shoshone, Bio-West, PacifiCorps ECC, The State of Idaho and other project partners.

We will continue to advise the Tribe to ensure that this project strengthens the water shed in the Bear River areas and preserves the important history of this area. We anticipate that this project will strengthen the working relationship between our office and the Tribe, as well as with other consulting and interested parties.

Sincerely,

Sarah Klain
Assistant Professor & Climate Adaptation Science Program Instructor
Authorized Signatory for USU Climate Adaptation Science, National Science Foundation Research Traineeship Program
Utah State University

Sagebrush
Steppe Land Trust
*For Generations To Come*

Supporting Entity: Sagebrush Steppe and Land Trust
Address: 109 N. Arthur Ave, Pocatello ID, 83401

Date: December 8, 2021

Project Lead: The Northwestern Band of the Shoshone Nation
Address: 2575 Commerce Way, Ogden, Utah 84401

RE: WaterSMART: **Notice of Funding Opportunity No. R22AS00026**

Dear Project Leader:

I am writing to express the Sagebrush Steppe Land Trust's (SSLT) support of the Northwestern Band of Shoshone Nation's (Tribe) proposal to the Bureau of Reclamation's WaterSMART *"Environmental Water Resources Projects for Fiscal Year 2022"* Program, titled "*The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs)*". The SSLT has reviewed the proposal, understands general expectations, and supports the efforts to address the natural resource concerns identified in therein.

We will continue to partner with the Tribe to ensure that this project enhances the health of the Bear River watershed and preserves the important cultural history of the area. We believe that this project will strengthen the working relationship between our team of conservation professionals and the Tribe, as well as with other agencies, consultants, and parties dedicated to support of the Tribe.

Sincerely,

Matt Lucia
Executive Director
Authorized Signatory for Sagebrush Steppe Land Trust

United States Department of the Interior
IDAHO FISH AND WILDLIFE SERVICE
Idaho Fish and Wildlife Office - Chubbuck
4425 Burley Drive, Suite A
Chubbuck, Idaho 83202
Telephone (208) 237-6975
www.fws.gov/idaho

The Northwestern Band of the Shoshone Nation
Chairman Dennis Alex
2575 Commerce Way
Ogden, Utah 84401

Subject: WaterSMART: **Notice of Funding Opportunity No. R22AS00026**

Dear Chairman Alex;

This letter transmits the U.S. Fish and Wildlife Service (Service) Idaho Fish and Wildlife Office's (IFWOs) support of the Northwestern Band of Shoshone Nation's proposal to the Bureau of Reclamation's WaterSMART *"Environmental Water Resources Projects for Fiscal Year 2022"* Program, titled "*The Northwestern Band of Shoshone Nation Battle Creek Ecological Restoration at Sowo Gahni (Home of the Lungs).*" The IFWO is familiar with the proposal's goals and supports the efforts to address the natural resource concerns identified in the proposal.

The IFWO will continue to support the Tribe through technical and financial assistance, as available, to ensure that this project strengthens the watershed in the Bear River area and preserves the important history and culture of this landscape. We are confident that this project will strengthen the working relationship between the Service/IFWO and the Tribe, as well as with other consulting and interested parties.

This letter offers the IFWOs commitment to continue its collaboration and support for this effort. Please contact Matt Bringhurst at (208) 237-6975 ext. 120 or via email at matthew_bringhurst@fws.gov, if you have questions regarding this letter.

Sincerely

*for* Christopher Swanson
State Supervisor

Dennis A. Alex
Chairman

Bradley J. Parry
Vice Chairman

NORTHWESTERN BAND OF THE SHOSHONE NATION
2575 COMMERCE WAY
OGDEN, UT 84401

# Tribal Resolution No 12-03-2021

## Bureau of Reclamation WaterSMART Environmental Water Resources Projects for Fiscal Year 2022

WHEREAS: The Tribal Council of the Northwestern Band of the Shoshone Nation is the duly Constituted governing body of the Northwestern Band of the Shoshone Nation by the authority of the Constitution and By-Laws for the Northwestern Band of the Shoshone Nation ("Nation"); and,

WHEREAS: under the Constitution and By-Laws of the Tribe, the Tribal Council of the Northwestern Band of the Shoshone Nation is charged with the duty of protecting the health, security, general welfare and governmental sovereignty of the Northwestern Band of the Shoshone Nation and all members; and,

WHEREAS: The Northwestern Band of the Shoshone Nation is a Federally recognized Tribe, exercising inherent sovereign authority and Treaty rights set forth in the Treaty of Box Elder of 1863 (13 Stat. 663) and the Treaty of Fort Bridger of 1868 (15 Stat. 673) and organized under a Tribal Constitution and By-laws pursuant to the Indian Reorganization Act of June 18, 1934 (48 Stat. 984) as amended; and

**WHEREAS: The Northwestern Band of the Shoshone Nation recognizes the need to preserve, restore, and recover traditional practices and the cultural value of these traditions and seeks to education the public of these traditions.**

**WHEREAS: The Northwestern Band of the Shoshone Nation has need to develop and improve its land, habitat, and water resources necessary for cultural preservation, traditional practices, and economic viability of the lands.**

**WHEREAS: The Northwestern Band of the Shoshone Nation seeks funding in the Bureau of Reclamation's WaterSMART Environmental Water Resources Projects for Fiscal Year 2022 (WaterSMART), Notice of Funding Opportunity No. R22AS00026, in the amount of $1,999,711.**

**WHEREAS: The Northwestern Band of the Shoshone Nation Project will (1) provide an existing conditions summary of the Battle Creek channel and riparian corridor, (2) replace the channelized section of Battle Creek with natural river braids and meanders on tribal land, (3) include design and construction of a concrete diversion structure and a fish passable 3-Box culvert, and (4) include installation of, at least, 30 beaver dam analogs (BDAs) along Battle Creek. The creation of a new open water tributary will improve the water quality and quantity in the Bear River Watershed. Creating these**

**conditions will be ideal to reintroduce the Bonneville Cutthroat Trout to Battle Creek, which is a major goal of the project.**

**WHEREAS: The Northwestern Band of the Shoshone Nation does have to ability to contribute in-kind project management costs of $200,000; and would contribute an additional $200,000, in cash, IF, a non-federal funding proposal that has been applied for is not selected.**

**NOW THEREFORE BE IT RESOLVED that the Northwestern Band of the Shoshone Nation Council hereby supports this WaterSMART application to the Bureau of Reclamation to and will meet established deadlines of the project that will be specified in a grant or cooperative agreement.**

DATED: **12-3-21**

DENNIS A. ALEX, CHAIRMAN

CERTIFICATION:

**I HEREBY CERTIFY that the foregoing resolution was passed while a quorum of the Tribal Council was present by a vote of 7 in favor, 0 opposed, 0 abstentions on the date this bears.**