Grant Application

Michaud Unit Irrigation Water Efficiency Improvements

Submitted to:

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
POLICY AND ADMINISTRATION
DENVER, COLORADO

WATERSMART: WATER AND ENERGY EFFICIENCY PROGRAM FOR FISCAL YEAR 2018
FUNDING OPPORTUNITY ANNOUNCEMENT NO. BOR-DO-18-F006

May 10, 2018

Submitted by:
Shoshone-Bannock Tribes
P.O. Box 306
Pima Drive
Fort Hall, Idaho 83203
www.shoshonebannocktribes.com

Project Manager:
Spence Ward, PE
Interim Tribal Water Engineer
P.O. Box 306
Pima Drive
Fort Hall, Idaho 83203
sward@sbtribes.com
p. (208) 239-4581
f. (208) 239-4592

TABLE OF CONTENTS

TECHNICAL PROPOSAL AND EVALUATION CRITERIA 4

1.1 Executive Summary 4
1.2 Background Data 4
1.2.1 Water Rights of the Michaud Unit 8
1.2.2 Current and Projected Water Demand 8
1.2.3 Current Energy Use 9
1.2.4 Relationships with Reclamation 10
1.3 Project Location 10
1.4 Technical Project Description 10
1.4.1 Need for Assistance and Problem Statement 10
1.4.2 Project Objectives and Activities 11
1.4.3 Plan for Oversight of Federal Award Funds 12
1.5 Evaluation Criteria 12
1.5.1 Evaluation Criterion A – Quantifiable Water Savings 12
1.5.2 Evaluation Criterion B – Water Supply Reliability 16
1.5.3 Evaluation Criterion C – Implementing Hydropower 17
1.5.4 Evaluation Criterion D – Complementing On-Farm Irrigation Improvements 17
1.5.5 Evaluation Criterion E – Department of the Interior Priorities 18
1.5.6 Evaluation Criterion F – Implementation and Results 18
1.5.7 Evaluation Criterion G – Nexus to Reclamation Project Activities 19
1.5.8 Evaluation Criterion H – Additional Non-Federal Funding 20

PROJECT BUDGET 20

6.1 Funding Plan and Letters of Commitment 20
6.2 Budget Proposal 21
6.3 Budget Narrative 21
6.3.1 Salaries and Wages 21
6.3.2 Fringe Benefits 22
6.3.3 Travel 22
6.3.4 Equipment 22
6.3.5 Materials and Supplies 22
6.3.6 Contractual/Construction 22

6.3.7 Other Expenses 22
6.3.8 Indirect Costs 22
6.3.9 Total Costs 23
6.4 Budget Form 23
ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE 23
REQUIRED PERMITS OR APPROVALS 24
OFFICIAL RESOLUTION 24
LETTERS OF SUPPORT 24

LIST OF FIGURES

Figure 1: Map of Fort Hall Irrigation Project Units 5
Figure 2: Map of the Portneuf Pumping Station, South Main Canal, and southern Michaud Unit 7
Figure 3: Annual diversion from the Portneuf River by the South Main Canal from 1978 to 2017 with a linear trend line shown in orange 9
Figure 4: Data sheet for Aqua 40 Coextruded Polyethylene Liner from Western Environmental Liner (https://www.westernliner.com/pdfs/Aqua40_Coext.pdf) 15

LIST OF TABLES

Table 1: Estimated Crop Distribution from BIA Crop Reports (1994-2000) 6
Table 2: Annual Electric Use and Cost of the Portneuf Pumping Station 9
Table 3: Results from Inflow/Outflow Seepage testing of the South Main Canal 13
Table 4: Funding Sources 21
Table 5: Budget Proposal 21

Technical Proposal and Evaluation Criteria

Date:	May 10, 2018
Applicant:	Shoshone-Bannock Tribes
Address:	P.O. Box 306, Pima Drive, Fort Hall, Bingham County, ID 83203

1.1 EXECUTIVE SUMMARY

The Shoshone-Bannock Tribes (Tribes) are pleased to submit this proposal to the United States Bureau of Reclamation (USBR) WaterSMART Water and Energy Efficiency program. The Tribes believe that there is a clear need to take a prominent role in managing the water resources that sustain our culture and livelihoods. Accordingly, over the past thirty years the Tribes have been proactive in securing the quantification of our water rights, establishing and growing a capable tribal water resources department (TWRD), and enacting regulations and policies that sustain water resources and the environment.

The proposed project seeks to improve the infrastructure of the Fort Hall Irrigation Project (FHIP) to conserve and use water more efficiently, mitigate conflict risk in areas at a high risk of future water conflict, enable farmers to make additional on-farm improvements in the future, and contribute to water supply reliability in the western United States. Through a previously completed WaterSMART Drought Resiliency project, the Tribes established that significant drought mitigation is possible through better management of water storage resources. A key action item toward accomplishing this goal is to increase water use efficiency in the Michaud Unit.

Through exchange, all water diverted from the Portneuf River by the South Main Canal is charged against the Tribes federally-reserved storage accounts in American Falls and Palisades Reservoirs. While the South Main Canal's aging diversion and conveyance system has been shown to be inefficient in term of both water and energy use, any water conserved by improvements to this infrastructure will remain available to the Tribes as water storage. Conserved tribal water storage may be used to mitigate drought impacts throughout the Reservation.

Accordingly, the Tribes' have identified a need for assistance to make significantly improvements to the southern Michaud Unit's irrigation water delivery system. This proposal sets forth two objectives and five associated activities that directly address the problem stated above. The first objective is to *Replace existing Portneuf Pumps with High-Efficiency Variable Frequency Drive Pumps* in order to more closely meet water demands of the southern Michaud Unit and to reduce electrical power demand. The second project objective is to *Reduce Seepage in the South Main Canal* by installing a geomembrane-type canal liner.

This project is located on the Federal facility of the Fort Hall Irrigation Project and is expected to be completed in three years from the date of award finishing in the Fall of 2021.

1.2 BACKGROUND DATA

The Fort Hall Irrigation Project (FHIP) is operated by the Fort Hall Agency of the Bureau of Indian Affairs (BIA). The FHIP was first constructed around 1891 and contains a total of approximately 70,000 acres divided into the following units: the Fort Hall Unit, the Michaud Unit, and the minor units of Bannock Creek, Ross Fork Creek, and Lincoln Creek. A map showing the locations of the various FHIP units is provided below in Figure 1 followed by a table showing major crops grown and total irrigated acreage of the FHIP.

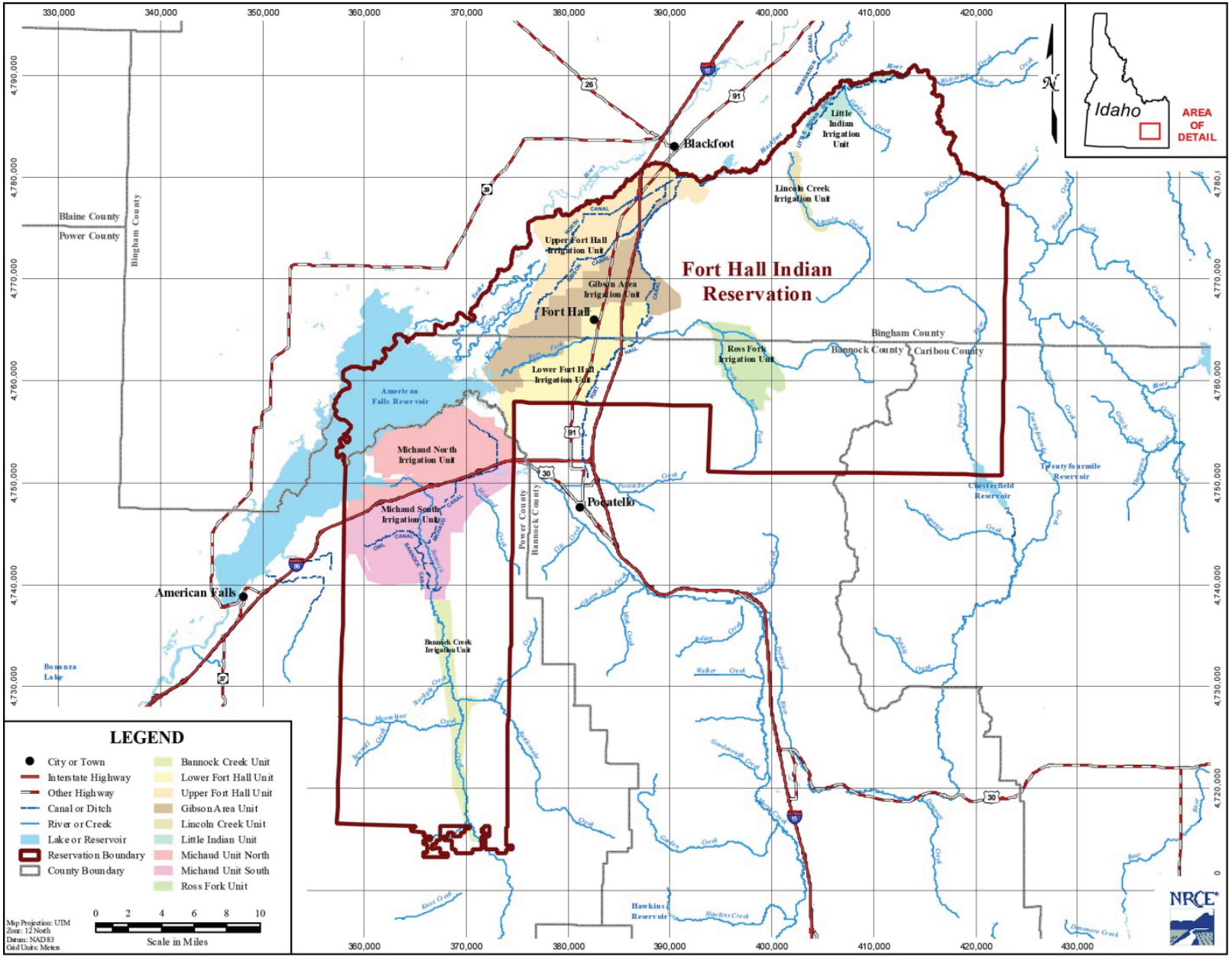

Figure 1: Map of Fort Hall Irrigation Project Units

Table 1: Estimated Crop Distribution from BIA Crop Reports (1994-2000)

Crop	Average Acreage	% of Total
Alfalfa	4,122	6.2
Barley	455	0.7
Beans	95	0.1
Corn	81	0.1
Garden	45	0.1
Native Hay	826	1.2
Oats	333	0.5
Other Crops	201	0.3
Pasture, Dry	3,575	5.4
Pasture, Irrigated	6,566	9.9
Peas	2	0.0
Peas & Oats	219	0.3
Potatoes	15,881	24.0
Sugar Beets	1,411	2.1
Wheat, Spring	10,041	15.2
Wheat, Winter	19,371	29.3
Yards (Lawn)	2,973	4.5
Total Crops	*66,197*	*100.0*

The Michaud Flats area of the Reservation was first considered for inclusion in the Fort Hall Irrigation Project in 1922, with an original proposal to enlarge the Reservation Canal to service the lands, and first authorized for construction in 1931. A lack of water supply from the Snake River suspended progress on the project until the U.S. Bureau of Reclamation proposed the use of storage water from their Federal reservoirs in the Upper Snake River system. The Michaud Unit was re-authorized for construction in 1954 (P.L. 83-741). The 1954 Act provided for the construction, operation, and maintenance of the Michaud Unit in exchange for a waiver by the U.S. and Tribes to all water rights arising out of the Fort Hall Bottoms area. The water supply for the project was undetermined at that time, but was to consider contact reservoir storage space of 83,900 acre-feet in Palisades Reservoir and 47,700 acre-feet in American Falls Reservoir, as well as up to 22,400 acre-feet per year of groundwater pumping. The Michaud Unit project was limited to 21,000 acres under the Act. Construction of the project began in 1957 and was completed in 1977.

At the present time, the Michaud Unit services 20,992 acres of land. This is divided by Interstate 86 into a northern portion served exclusively from groundwater wells and a southern portion served mostly from the Portneuf River and a series of canals, but also from nine supplemental groundwater wells. In the northern portion, approximately 7,107 acres are actively served, of which 7,005 acres are Tribal lands (either trust or allotments). In the southern portion, approximately 13,885 acres are actively served, of which 13,634 are Tribal lands. The Portneuf Pumping Station, located within the boundaries of the Reservation on the Portneuf River, provides water to the South Main Canal, which is the primary source for irrigation in the southern half of the Michaud Unit of the FHIP. In addition, there are 1,430 acres in the southern portion which are served from private groundwater wells and these lands would be considered to be outside of the Michaud Unit project.

The water delivery system in the southern portion of the Michaud unit contains approximately 47 total miles of earthen canals, laterals, and closed pipelines, along with 11 miles of drains (BIA, 1969). The South Main Canal extends southwest from the Portneuf Pumping Station for approximately 9.4 miles. At its outlet, the South Main Canal supplies water to two major laterals. From this point, Owl Canal extends approximately 4.2 miles to the West and supplies several laterals to the north, while the Bannock Canal extends about 4.4 miles south. To date, there has been no canal lining performed in the Michaud Unit. Figure 2 shows a map of the Portneuf Pumping Station and southern Michaud Unit.

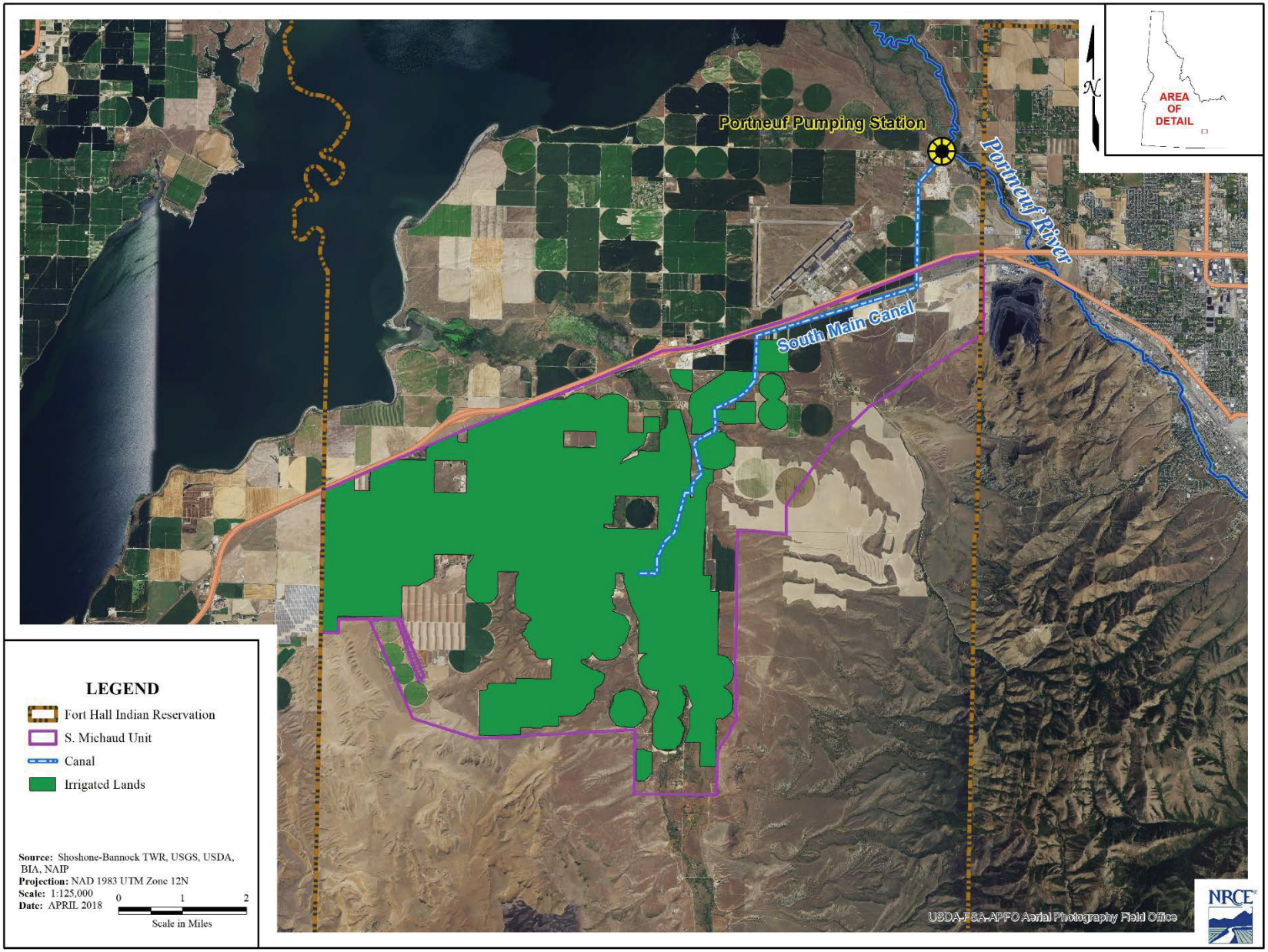

Figure 2: Map of the Portneuf Pumping Station, South Main Canal, and southern Michaud Unit

1.2.1 Water Rights of the Michaud Unit

A Memorandum of Agreement was signed between the U.S. Bureau of Reclamation (USBR) and the Bureau of Indian Affairs (BIA) in 1957 to provide certainty as to the water supply for the authorized Michaud Unit project. The USBR was to provide 2.8059% of the storage capacity in American Falls Reservoir (47,700 acre-feet) and 6.9917% of the capacity in Palisades Reservoir (83,900 acre-feet). These water supplies reserved for the Michaud Unit were incorporated (as percentages of storage capacity) into the Tribes' reserved water rights claims under the 1990 Fort Hall Indian Water Rights Agreement with slight adjustments in the volume amounts to 46,931 acre-feet in American Falls Reservoir and 83,900 acre-feet in Palisades Reservoir. This water is allowed to be diverted from the Portneuf River through exchange as provided by the 1957 Memorandum of Agreement. The Tribes may identify the reservoir storage space to be used for the exchange. If none is specified, allotted storage space from Palisades Reservoir is exchanged.

Up to 22,400 acre-feet per year of groundwater may also be pumped and used for irrigation purposes in the Michaud Unit. Surface irrigation water in the Michaud Unit is supplemented by 8 groundwater pumps along Owl Canal, and 1 groundwater pump along Owl Lateral No. 1. The capacity of each pump varies, ranging from 60 to 100 hp. During an average year, Pumps 1 through 8 are estimated to operate for approximately one-third of the growing season. However, Pump 9 located on Owl Lateral No. 1 operates continuously throughout the entire season. The groundwater supplied by the nine groundwater pumps averages 3,700 acre-feet per year, based on records from 2002 to 2008.

1.2.2 Current and Projected Water Demand

Figure 3 shows annual diversion from the Portneuf River by the South Main Canal from 1978 to 2017 with a linear trend line in orange. The following factors were found to be possible causes of this increase: (1) irrigation water demands, based on climate conditions, have increased about 12% over this time period, based on the five year moving average; (2) crop acreage has increased by about 5% over this time period; and (3) overall irrigation efficiency has decreased by about 10%, based on a five year moving average. These factors explain the majority of the observed increase over the last 40 years.

There are two factors limiting the South Main Canal's Portneuf River diversion. First, there must be adequate water flow in the Portneuf River to provide sufficient head for the pump intakes. Secondly, through exchange the Tribes' water supply for the Michaud Unit is solely from water accrued to their federally reserved water rights.

This project aims to serve the entire Tribal membership on the Reservation, estimated at 3,500 Tribal members based on 2010 Census data.

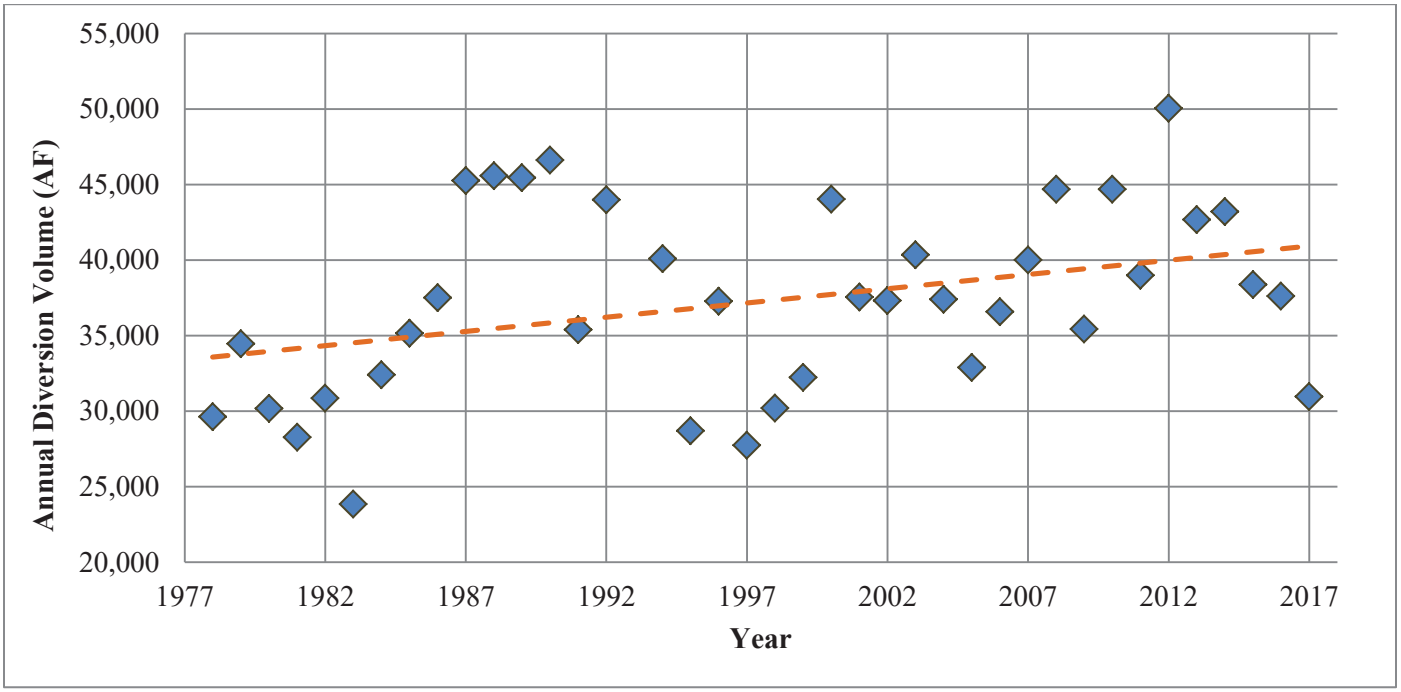

Figure 3: Annual diversion from the Portneuf River by the South Main Canal from 1978 to 2017 with a linear trend line shown in orange

1.2.3 Current Energy Use

The Portneuf Pumping Station currently uses its large 1,500 horsepower (hp) pumps for water delivery to the South Main Canal. The power for these pumps is electric, supplied by Idaho Power under a special rate structure. Current annual energy use of the Portneuf Pumping Station is approximately 5,700 MW-hrs per year, with an associated cost of about $140,000, as summarized in Table 2. As was mentioned previously, typically one or two of these pumps is operated at a time during irrigation season. This system contains inherent inefficiency, as the pumps can only operate at one speed, at full power. In order to reduce flow rates to meet demand when not all flow from one or two pumps operating is needed, bypass lines are used to convey surplus water back to the Portneuf River. This practice is inefficient in terms of electricity use, since the pumps are still operating at the same power even when lower flow rates are required. The existing pumps are also very old, as they were installed in 1963. The impellers of the existing pumps have been worn, and the operating efficiency has degraded over time.

Table 2: Annual Electric Use and Cost of the Portneuf Pumping Station

Year	Total Metered Electric Use (kW-hrs)	Estimated Billed Electric Use (kW-hrs)	Lumped Electric Rate ($/kW-hr)	Annual Electric Cost
2013	5,866,358	6,528,962	$0.0228	$148,860
2014	5,685,429	6,327,598	$0.0228	$144,270
2015	5,462,624	6,079,625	$0.0250	$151,990
2016	4,442,737	4,944,545	$0.0260	$128,557
2017	4,123,440	4,589,283	$0.0270	$123,910
Average	**5,116,117**	**5,694,003**	**$0.0247**	**$139,518**

1.2.4 Relationships with Reclamation

The TWRD has an excellent working relationship with Reclamation's Boise, ID office. Reclamation has been, and continues to be, a proactive trustee of Tribal water resources. As an example, Reclamation has aided with technical and legal investigations related to a water accounting dispute in the Water District 01 Rental Pool Program, and ultimately helped the Tribes in reaching a settlement near the end of July 2015. More recently, Reclamation has provided assistance to the Tribes in resolving a conflict on reservoir storage accounting procedures of the Idaho Department of Water Resources.

In 2017 the TWRD completed a WaterSMART Drought Resiliency grant to study and simulate drought scenarios. A significant finding from this project's literature review was that better management of water storage significantly mitigated drought impacts. The WaterSMART drought resiliency effort also specifically studied water efficiency improvements to the Michaud Unit as a way to better manage the Tribes' federally reserved storage rights in American Falls and Palisades Reservoirs.

The TWRD also has an ongoing grant under Reclamation's the Development, Management, and Protection of Indian Tribal Water Resources program where the TWRD aims to continue their previous monitoring and management efforts by using funds awarded through this grant to install approximately 75-80 new flow meters on large surface water pumps within the Reservation boundaries on the Michaud Project for FY 2016-FY 2018. These data will then be utilized by the TWRD to conduct accurate water accounting for the Michaud Unit and to quantify the efficiency of water use by surface water user leading to water conservation and better water management within the Reservation.

1.3 PROJECT LOCATION

The Portneuf Pumping Station for the Michaud Unit is located in Power County, Idaho approximately 6.5 miles northwest of Pocatello, Idaho. The project latitude is 42° 56'N and longitude is 112° 32'W. A map of the project location is show above in Figure 2.

1.4 TECHNICAL PROJECT DESCRIPTION

1.4.1 Need for Assistance and Problem Statement

The Tribes understand that it is increasingly important to conserve valuable water resources through their use efficiency. While the Tribes have demonstrated our willingness to expend significant effort and financial resources through the long-term actions of the TWRD, the Tribes' have a need for assistance to make significant infrastructure improvements to the irrigation water delivery system in the southern portion of the Michaud Unit. Provided below is the Problem Statement for this project summarizing the overall need for assistance.

Problem Statement

The Shoshone-Bannock Tribes realize that significant water and energy inefficiencies exist under the current infrastructure used for the diversion and transmission of Portneuf River water to the southern Michaud Irrigation Unit. While the Tribes have expanded substantial effort to gain sufficient knowledge to address this issue, they presently lack funds to perform all required large-scale infrastructural improvements necessary to realize these quantified savings in water and energy resources.

The Tribes do not presently have the financial resources to address these problems without federal assistance. Funding through this program would allow installation of infrastructure that would provide significant benefits in water and energy conservation. These benefits can be enjoyed and built-upon for the extensive service-life of the proposed infrastructure improvements.

1.4.2 Project Objectives and Activities

The Tribes have established the following two objectives and their associated activities to directly address both the Problem Statement presented in the preceding section and the objectives presented in WaterSMART Water and Energy Efficiency Program Funding Opportunity Announcement NO. BOR-DO-18-F006.

Objective 1: *Replace existing Portneuf Pumps with High-Efficiency Variable Frequency Drive Pumps.* The Portneuf Pumping Station consists of two 1,500 hp pump assemblies that can only be fully on or fully off and cannot be adjusted for variable flow rates. These pumps were built in the 1960's and are currently operating beyond their expected service life, providing an opportunity for the Tribes and the BIA to cooperate in replacing features of the pumping station to better meet the irrigation needs of the Michaud Unit. The BIA has recommended variable speed or variable frequency drive (VFD) pumps be installed at the pumping station to throttle pump diversions based on irrigation demands. VFD pumps will provide much more flexibility in operating a demand-based irrigation system, which can respond to changes in irrigation demands and river conditions. Due to cost limitations, this proposal envisions replacing 50% of the Portneuf Pumping Station's capacity with new VFD pumps.

Activity 1.1: Final engineering design. The Tribes have already expended resources in exploring the potential to install VFD pumps at the Michaud pumping plant. This activity will expand upon this past work, and the Tribes will work with the BIA to select an engineering contractor to design the best possible VFD pump layout.

Activity 1.2: Pre-construction preparation and contractor selection. After working with the BIA to determine the optimal VFD pump configuration, the Tribes and the BIA will work to secure all necessary pre-construction authorizations and select qualified contractors to perform electrical and pump installation work.

Activity 1.3: Perform VFD pump installation. The Tribes will work with the BIA and the contractor to schedule then perform site preparation and installation of the new VFD pump infrastructure. This activity will also include equipment testing and training of BIA operator staff.

Objective 2: *Reduce Seepage in the South Main Canal.* Reducing the seepage of the South Main Canal would significantly improve the efficiency of the conveyance system, thus reducing diversion requirements necessary to meet irrigation demands. Flow measurements were taken from June to September of 2016 along the South Main Canal at distances of one mile and 5 miles apart to better understand losses due to seepage and vegetation. In the first mile near the canal heading, losses were found to be substantial, averaging about 15%, or about 22 to 37 cfs. This proposal envisions lining the first mile of the South Main Canal.

Activity 2.1: Finalize seepage reduction methodology and canal locations. While it is expected that a geomembrane canal liner with be installed for the first 1 mile of the South Main Canal, the Tribes will review all available canal seepage reduction technologies and select the best available for this project. The Tribes will also finalize the location and extent of canal to be lined based upon the final cost of the seepage reduction technique.

Activity 2.2: Perform seepage reduction services. After determining the type and location of canal lining, the Tribes will first select a qualified contractor to perform the work then work with the BIA to schedule and perform canal liner installation outside of the irrigation season.

1.4.3 Plan for Oversight of Federal Award Funds

The Tribes have over 30 years of experience in managing various grant-funded programs. The Tribes maintain a Policies and Procedures Manual, with the following policies and procedures in place to accept any newly-funded program and ensure continued success:

- Personnel Management: The Tribes have developed and adopted a personnel management system which prescribes procedures for employment, including: hiring, transfers, termination, grievances, employee performance evaluations, schedules, orientation, and training.
- Financial Management: The Tribes use a computerized financial accounting system. The system is supervised and maintained by an accounting staff comprised of nine individuals, including four accountants. The Finance Department is currently responsible for over 100 grants and contracts from various State and Federal agencies, including the Department of Health and Human Services. A year-end financial report is compiled and produced by independent auditors.
- Administrative Management: The Tribes' Contracts and Grants Office was established in the 1980's to provide technical and management assistance to the Tribes' departments in preparing and submitting grant applications to federal, state, local and private funding agencies, and to coordinate and manage all federal, state, local and private grants that have been awarded to the Tribes via its Contracts division. The Senior Contracting Officers works with each individual department and program, along with the respective Finance Department accountants and technicians, to prepare and submit periodic reports to granting agencies as required. Contract Office personnel are responsible for entering and tracking all contracts/grants in their computerized system; hard copy files are kept in the Contracts Office as reference for annual audits by agency and independent auditors.

1.5 EVALUATION CRITERIA

1.5.1 Evaluation Criterion A – Quantifiable Water Savings

Describe current losses: Please 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)?

Water that will be conserved is currently either entering the Snake River as baseflow, seeping into deep groundwater, or being utilized by non-beneficial vegetation.

How has the estimated average annual water savings that will result from the project been determined? How have average annual canal seepage losses been determined? Have ponding and/or inflow/outflow tests been conducted to determine seepage rates under varying conditions? If so, please provide detailed descriptions of testing methods and all results. If not, please provide an explanation of the method(s) used to calculate seepage losses. All estimates should be supported with multiple sets of data/measurements from representative sections of canals. What are the anticipated annual transit loss reductions in terms of acre-feet per mile for the overall project and for each section of canal included in the project?

The current seepage losses in the South Main Canal were estimated over a two of sections of the South Main Canal. The seepage estimates were developed from estimating flow rates at the head of the South Main Canal as well as at two points downstream. One observation point was located approximately 1 mile downstream from the head of the canal, and another observation point was located approximately 5 miles downstream from the head of the canal.

Data was collected at these observation points on 9 separate occasions over the 2016 irrigation season from June to September and covering several different flow rates. This dataset was compiled in order to calculate average losses as a percent of inflow over each reach of the canal. Losses shown by reductions in downstream flow rates were assumed to have occurred due to seepage losses within the earthen canal sections. Evaporation from within canal sections also occurs, but the contribution of this process to overall losses is expected to be negligible compared to that of seepage. Lining the canal with geomembrane was then assumed to reduce existing seepage by 90% in any canal section. Table 3 shows the results from the TWRD's Inflow/Outflow seepage testing of the South Main Canal as well as estimated savings from canal lining.

Table 3: Results from Inflow/Outflow Seepage testing of the South Main Canal

Date	Flow at Head (cfs)	Flow at 1 mile (cfs)	Flow at 5 mile (cfs)	Total % Loss in 1 mi	Total % Loss in 5 mi
6/22/2016	202.0	184.4	166.8	8.7%	17.4%
6/28/2016	206.6	178.1	162.7	13.8%	21.3%
7/11/2016	129.1	107.3	94.0	16.9%	27.2%
7/25/2016	89.0	76.8	72.3	13.8%	18.8%
8/5/2016	136.2	118.2	104.8	13.2%	23.0%
8/16/2016	128.0	108.3	102.2	15.3%	20.2%
8/22/2016	133.2	105.6	96.7	20.7%	27.5%
9/2/2016	142.7	117.5	106.8	17.7%	25.1%
9/19/2016	94.1	76.9	68.2	18.3%	27.5%
Average Percent Losses				*15.4%*	*23.1%*
90% of Average Percent Losses				*13.8%*	*20.8%*
Avg. Annual Diversion over past 10 years (AFY)				*40,676*	*40,676*
Diversion Savings by Canal Lining (AFY)				*5,628*	*8,458*

The first mile of the canal was chosen for this project because this section contains significantly higher overall seepage rates than the subsequent four miles of canal. Thus, improving this section maximizes the

reduction in seepage for the amount of expenditure on canal lining. Average annual water savings due to lining of this section were estimated to be approximately 5,628 acre-feet per year, based on an average of 40,676 acre-feet per year historically diverted over the past 10 years from the Portneuf River.

What are the expected post-project seepage/leakage losses and how were these estimates determined (e.g., can data specific to the type of material being used in the project be provided)? Include a detailed description of the materials being used.

Post-project lined segment seepage losses over the lifetime of the project were assumed to be reduced by 90% of current seepage losses. While the Tribes have not ultimately decided on the canal lining material to be used for this project, a potential candidate is the Aqua 40 Coextruded Polyethylene Liner from Western Environmental Liner. This material has a thickness of 40 mil and is a heavy-duty lining meant for long-term applications with a 20-year limited warranty. Specifications of the material are shown in Figure 4 below.

WESTERN
ENVIRONMENTAL LINER

Aqua 40 Coextruded
40mil Reinforced Polyethylene

DATA SHEET

Heavyweight fabric incorporating a special weave pattern to enhance thickness, flatness, and tear properties. This product is a combination of polyethylene reinforcement and co-extrusion which enhances UV Resistance and improves physical properties. For use in geomembrane applications such as soil remediation, pond lining, canal lining, landfill covers, tank lining, etc.

FABRIC SPECIFICATIONS

WEAVE	Woven black HDPE scrim
COATING	Top side – 17.5 mil LLDPE/LDPE w/ special blend Bottom side - 5 mil LDPE
COLOR	Black/Black
WEIGHT	20.8 oz/yd^2 (705 g/m^2) +/- 5%
THICKNESS	Nominal 40 mil (1.0 mm) +/- 10% ASTM D1777

GRAB TENSILE	Warp 418lb 1859 N	Weft 385 lb 1712 N	ASTM D7-7004
TOUNGE TEAR	Warp 55 lb 244 N	Weft 55 lb 244 N	ASTM D5884-01
TRAPEZOIDAL TEAR	Warp 80 lb 355 N	Weft 66 lb 293 N	ASTM D4533-04
MULLEN BURST	800 psi 5517 kPa		ASTM D751
HYDROSTATIC RESISTANCE	769 psi 5302 kPa		ASTM D751-00
PERMEABILITY	2.06 x 10^{-12} cm/sec		ASTM D4491-99a
PUNCTURE RESISTANCE INDEX	243 lb 1076 N		ASTM D4833-02

These values are typical data and are not intended as limiting specifications.

www.westernliner.com | 8121 W Harrison St Tolleson, AZ 85353 | 1 800 347-8274 | info@westernliner.com

Figure 4: Data sheet for Aqua 40 Coextruded Polyethylene Liner from Western Environmental Liner (https://www.westernliner.com/pdfs/Aqua40_Coext.pdf)

How will actual canal loss seepage reductions be verified?

An inflow/outflow analysis over the section of lined canal will be performed after the installation of the new canal liner. In addition, average annual diversions will be quantified and compared to long term average diversions.

1.5.2 Evaluation Criterion B – Water Supply Reliability

Does the project promote and encourage collaboration among parties in a way that helps increase the reliability of the water supply?

Conserved water will add to total pool of the region's available water supply. This project will conserve Tribal water storage which can be used for irrigation water throughout the FHIP.

Is there widespread support for the project? What is the significance of the collaboration/support?

As per the attached resolution, the Tribal Government fully supports this effort. In addition, the operator of the FHIP is in full support of this project and has submitted a Letter of Support for this project.

Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?

The possibility of future water conservation improvements by other water users is enhanced by completion of this project because this project allows for better control of the diversion flow rate to the Michaud Unit. In the past, the FHIP was only to three potential flow rates, Pump #1 on at 86 cfs, Pump #2 on at 124 cfs, or both pumps on at 210 cfs. The new VFD pumps will have the ability to accurately adjust the Michaud Unit's diversion flow to account for water savings from on-farm efficiency improvements.

Will the project make water available to address a specific water reliability concern? Please address:

Through a previously completed WaterSMART Drought Resiliency project, the Tribes identified that better management of water storage is a key component to drought mitigation. The proposed project directly conserves the Tribes' reserved water storage. This water storage may be released to not only the South Michaud Unit, but also to the Fort Hall Unit in times of water shortage.

Explain and provide detail of the specific issue(s) in the area that is impacting water reliability, such as shortages due to drought, increased demand, or reduced deliveries.

Water demand in the Upper Snake River Basin has substantially increased over the past several years due to a settlement reached between surface and groundwater users. Groundwater users are now required to mitigate a portion of their water use by securing surface water rights. This has led to an overall increase in water demand in the basin.

Describe where the conserved water will go/how it will be used. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)? Will it be left in the river system? Describe how the project will address the water reliability concern?

All water diverted from the Portneuf River by the South Main Canal is charged against the Tribes federally-reserved storage accounts in American Falls and Palisades Reservoirs. Conserved water will not be pumped from the Portneuf River and therefore will remain available to the Tribes as water storage. This additional water storage can be used to mitigate drought throughout the reservation.

Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?

Water conflict has increased with demand in the Upper Snake River Basin. Over the past 4 years the Tribes have been involved in two disputes over the Snake River reservoir storage accounting methodology. While

the parties involved with the first dispute were able to arrive at a settlement agreement, the second dispute is now in a contested case before the Director of Idaho's Department of Water Resources. Water conserved into the Snake River reservoir storage system will only help to relieve conflicts in the Upper Snake River Basin.

Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.

As per the 1990 Fort Hall Water Rights Agreement, conserved water will be used to supplement irrigation through existing FHIP infrastructure in times of drought.

Describe the roles of any partners in the process. Please attach any relevant supporting documents.

The BIA operates and maintains the FHIP and will greatly assist in the engineering, design, and installation of the new pumps and canal lining. The BIA has expressed their support in the attached Letter of Support.

Indicate the quantity of conserved water that will be used for the intended purpose.

Average annual water savings due to canal lining and installing VFD pumps was estimated to be approximately 5,628 acre-feet per year. All conserved water will remain in the Tribes' federally-reserved storage accounts in American Falls and Palisades Reservoirs to be used for drought mitigation or reservoir storage carryover in the event that the reservoir system does not fill in the following year.

Will the project benefit Indian tribes? Will the project benefit rural or economically disadvantaged communities?

All water conserved by this project will directly increase the quantity of water available to the Tribes through our federally reserved water storage rights in American Falls and Palisades Reservoir. This additional water storage will help protect Tribal and non-Tribal rural water users from future drought shortages.

1.5.3 Evaluation Criterion C – Implementing Hydropower

The proposed project does not include the construction or installation of a hydropower system, however in July 2016 the Tribes completed a Reservation-wide hydropower feasibility study under a grant by the BIA's Department of Energy and Mineral Development. Two of the 18 small hydropower sites determined to be potentially feasible were in the Michaud Unit. Increased water flow control provided by the installation of the VFD pumps may provide better control of future small hydropower projects.

In addition, this project may directly increase Snake River hydropower production. If less water is diverted from the Portneuf River, more water will be available for downstream power production at American Falls Dam and Minidoka Dam.

1.5.4 Evaluation Criterion D – Complementing On-Farm Irrigation Improvements

The Idaho Water Resource Board (IWRB) had applied for and received a grant from the USDA-NRCS under the Agriculture Water Enhancement Program (AWEP). This program had several strategies that were designed to conserve water on the Eastern Snake River Plain. An endgun removal project between the Tribal Water Resources (TWR) and the Idaho Department of Water Resources (IDWR) under this NRCS grant took place during the irrigation season of 2013. Endgun operation was monitored on two (2) pivots located in the Michaud Unit. Data loggers were connected to both the pivot endgun control signal and at the flow meter near the pump. The results from the testing showed that by removing the endgun a water savings of 3.5 - 4 ac-ft per acre could be achieved.

The Michaud Unit is a relatively new irrigation unit, and irrigation is done by center pivot and linear move sprinklers throughout the area. Significant potential efficiency improvements in the Michaud Unit are considered to be in the conveyance system upstream of the farm turnouts and pump stations. The Tribes and BIA are continuing to build upon these efforts and improve farm-headgate delivery records and ultimately scheduling. The proposed project will complement on-farm irrigation scheduling by providing more flexibility and control at the Portneuf Pump Station and therefore water levels in the main supply canals should be stabilized.

1.5.5 Evaluation Criterion E – Department of the Interior Priorities

Creating a conservation stewardship legacy second only to Teddy Roosevelt

The proposed project is built upon a robust scientific analysis of the current irrigation operations of the Michaud Unit and the most cost-effective means to improve operations and reduce inefficiency. These objectives are a prominent example of best practices to manage water resources, by using technology and improved infrastructure to reduce inefficiency and increase flexibility. This flexibility provided by the VFD pumps and control systems will allow the project to be more adaptive to environmental changes, such as altered streamflow regimes in the Portneuf River and erratic weather conditions affecting irrigation requirements.

Restoring trust with local communities

The proposed project represents a collaborative effort between the Tribes, BIA, and Reclamation. These types of projects are important efforts to keep the lines of communication open between the Tribal and Federal governments. The Tribes, and particularly the TWRD, have historically had a good working relationship with Reclamation on water issues. This project will help build a stronger working relationship between the Tribes and the local BIA Fort Hall Agency office.

Modernizing our infrastructure

The proposed project is a dedicated effort to modernize water delivery infrastructure within the Fort Hall Irrigation Project. The project will modernize a large pumping station that was originally constructed in the 1960s and is at or beyond its useful service life. The new pumping plant will utilize VFD pumps and control to better and more efficiently manage water diversions and deliveries. The project will also line an earthen canal prone to seepage and loss. The project will construct new infrastructure which is intended to reduce maintenance costs and risk of failure of a critical water delivery system to the Tribes.

1.5.6 Evaluation Criterion F – Implementation and Results

Subcriterion F.1— Project Planning

The proposed project is built upon several years of planning and study to understand the best and most cost-effective solutions. Past planning studies have included three technical memorandums prepared by the Tribes' engineering contractor over the time period 2012 to 2016. These technical analyses have looked at options for increasing efficiency and reducing river diversions in the Michaud Unit. Past work has also included inflow/outflow measurement to understand seepage losses in the South Main Canal as well as field turnout flow monitoring by the Tribal Water Resources Department.

The project is also supported by past planning efforts. In 2006, the Tribes completed a Water Conservation Reconnaissance Study which identified infrastructure replacement and rehabilitation, canal lining, and improved irrigation scheduling as important considerations to improve overall operations within the FHIP.

Subcriterion F.2— Performance Measures

The proposed project benefits from having relatively simple and quantifiable performance metrics. The TWRD and BIA have already established a baseline data record in terms of the following critical data elements: daily river diversions, monthly energy use for pumping, historical crop ET and NIR, historical irrigation deliveries, and canal seepage loss in the targeted reach of the South Main Canal. These baseline datasets provide the pre-project condition. The project proposes two critical infrastructure components: (1) replacement of the Portneuf Pump Station pumps and (2) lining the upper section of the South Main Canal. Performance of the project will be measured as follows:

- For a period of 3 years following installation of the new pumps, monthly and annual diversion records will be compiled and compared against climate-based crop ET and NIR estimates, as well as farm headgate delivery data. From these datasets, performance will be measured by a change in the overall irrigation efficiency of the Michaud Unit.
- For a period of 3 years following installation of the new pumps, annual energy use records will be compiled and used to calculate an overall annual energy cost and a cost per acre-foot of water pumped and delivered to the Michaud Unit. These energy metrics will be compared against the baseline data to show energy savings achieved with the new pumps.
- For a period of 3 years following installation of the canal lining, the Tribal Water Resources Department will conduct two flow measurements (spring and fall) at the upper and lower end of the canal reach and compare the flow difference (seepage loss) against baseline data. The data will be used to calculate the efficiency improvement and volume of water saved by lining the canal.

These performance measures will be document in the performance report and submitted to Reclamation.

1.5.7 Evaluation Criterion G – Nexus to Reclamation Project Activities

Is the proposed project connected to Reclamation project activities? If so, how? Does the applicant receive Reclamation project water?

The Tribes receive up to 130,831 acre-feet per year of Reclamation project water from their federally-reserved storage water in American Falls and Palisades Reservoirs. Currently, this water is the only water available for the South Main Canal. Water diverted from the Portneuf River is exchanged for the Tribes' storage in American Falls and Palisades Reservoirs. Water efficiency improvements for the Michaud Unit will directly conserve Reclamation project water supply.

Is the project on Reclamation project lands or involving Reclamation facilities?

This project is not on Reclamation lands and but involves Reclamation facilities as stated above.

Is the project in the same basin as a Reclamation project or activity?

This project is within Upper Snake River Basin where 9 large Reclamation reservoir projects are located.

Will the proposed work contribute water to a basin where a Reclamation project is located?

Water savings from this project will contribute water to the Upper Snake River Basin where 9 large Reclamation reservoir projects are located.

Will the project benefit any tribe(s)?

This project will result in substantial benefits for the Shoshone-Bannock Tribes by providing for better utilization of their water resources as well as protection in times of drought.

1.5.8 Evaluation Criterion H – Additional Non-Federal Funding

The proposed project will provide non-Federal funding in excess of 50 percent of project costs. The percentage of non-Federal funding provided will be 50.3%

Project Budget

6.1 FUNDING PLAN AND LETTERS OF COMMITMENT

How you will make your contribution to the cost-share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments). The Tribes will contribute our entire cost-share requirement as a monetary contribution of $898,000.00 from a 638 contract intended to improve the infrastructure of the Portneuf Pumping Station.

Describe any costs incurred before the anticipated Project start date that you seek to include as project costs. For each cost, identify: The project expenditure and amount, Whether the expenditure is or will be in the form of in-kind services or donations, The date of cost incurrence, How the expenditure benefits the Project. There will be no in-kind costs incurred before the anticipated project start date for this project.

Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment. There is no funding to be provided by funding partners for this project. Accordingly, letters of commitment are not required.

Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards the required cost share unless otherwise allowed by statute. There is no funding requested or received from other Federal partners for this project.

Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied. There are no pending funding requests for this project.

6.2 BUDGET PROPOSAL

Table 4 and Table 5 follow the budget proposal format shown in the Funding Opportunity Announcement.

Table 4: Funding Sources

FUNDING SOURCES	AMOUNT
Non Federal Entities	
Shoshone-Bannock Tribes	$898,000.00
Non-Federal Subtotal	$898,000.00
Other Federal Entities	
Other Federal Subtotal	$0.00
REQUESTED RECLAMATION FUNDING	**$888,818.60**

Table 5: Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Equipment				
Pumps, motors, frames & couplers	$201,600.00	3	EA per Pump	$604,800.00
480v variable speed control system w/ PLC and harmonic filter	$192,000.00	3	EA per Pump	$576,000.00
Supplies and Materials				
Aqua 40mil Coextruded Polyethylene Canal Liner 253' x 60' cut	$5,616.60	21	EA	$117,948.60
Aqua 40mil Coextruded Polyethylene Canal Liner shipping	$7,000.00	1	EA	$7,000.00
Pump station skid, pump check valve, pump isolation valve, pump discharge pipe, flow meter	$50,400.00	3	EA per Pump	$151,200.00
Contractual/Construction				
VFD Pump Engineering	$60,000.00	1	EA	$60,000.00
VFD Pump Installation (per pump)	$40,000.00	3	EA per Pump	$120,000.00
Conversion of Electrical System	$110,000.00	1	EA	$110,000.00
Western Environmental Liner Installation	$39,870.00	1	EA	$39,870.00
TOTAL DIRECT COSTS				**$1,786,818.60**
TOTAL ESTIMATED PROJECT COSTS				**$1,786,818.60**

6.3 BUDGET NARRATIVE

6.3.1 Salaries and Wages

Project funds will not be used to support the salaries and wages of the Tribal Water Resources Department of staff managing this project. The Tribes also will not apply our time spent managing this work as an in-kind contribution, as all matching funds will be delivered as a cash contribution.

6.3.2 Fringe Benefits

Project funds will not be used to support any fringe benefits.

6.3.3 Travel

Travel costs will not be incurred as part of this project.

6.3.4 Equipment

This project will need equipment for the new pumping infrastructure. The Tribes hope to replace 50% of the pumping capacity at the Portneuf Pumping station with new VFD pumps. While the Tribes have not definitively determined the type of pump configuration or the pump supplier, in December 2016 Precision Pumping Systems (http://gopps.us/) performed a site visit to the Portneuf Pumping Station and provided a potential solution for pump replacement as well as initial cost estimates. The budget above increases estimated equipment costs by Precision Pumping Systems by 20%.

6.3.5 Materials and Supplies

This project will need materials for both the new pumping infrastructure and the canal lining. The Tribes hope to replace about 50% of the pumping capacity at the Portneuf Pumping station with new VFD pumps. While the Tribes have not definitively determined the type of pump configuration or the pump supplier, in December 2016 Precision Pumping Systems (http://gopps.us/) performed a site visit to the Portneuf Pumping Station and provided a potential solution for pump replacement as well as initial cost estimates. The budget above increases estimated material costs by Precision Pumping Systems by 20%.

The Tribes plan to install 1 mile of canal lining within the South Main Canal. While the Tribes have not definitively determined the type of canal liner or supplier, Western Environmental Liner (https://www.westernliner.com/) has provided material cost estimates of using their Aqua 40mil Coextruded Polyethylene Liner to line the first mile of the South Main Canal.

6.3.6 Contractual/Construction

The Tribal Water Resources Department does not presently have the technical background and experience required to perform the engineering of the new pumping system, the installation of the new pumping system, the conversion of the electrical system, or the installation of the new canal liner. While the Tribes have not definitively determined the type of pump configuration, the pump supplier of the canal liner supplier, Precision Pumping Systems (http://gopps.us/) and Western Environmental Liner (https://www.westernliner.com/) have provided initial cost estimates for installation of the new pumps and canal liner. These costs are not inclusive of all the work that would need to be completed and have been increased. Also, the BIA has provided estimates of contractor expenses required for pump engineering design and electrical system conversion from 1500-volt to 480-volt power.

There are no environmental or regulatory compliance costs as part of this project.

6.3.7 Other Expenses

There are no other expenses, which may include additional travel and mileage, as part of this project.

6.3.8 Indirect Costs

This project does not include any indirect costs.

6.3.9 Total Costs

The total cost of this project will be $1,786,818.60

6.4 BUDGET FORM

The completed SF-424C, Budget Information – Construction Programs is attached in Appendix A.

Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts. Like most of the western United States, southeast Idaho experiences significant annual variations in rain and snow fall, resulting in many dry years. During low flow years, irrigation deliveries from the Portneuf River must still be met and there is a concern that flows below the Portneuf Pumping Station are insufficient for fish habitat. This problem is compounded by the fact that irrigation diversions to the Michaud Unit typically reach their peak at the same time that instream river flows reach their lowest point due to seasonal variations in natural flow. Due to increased water use efficiency, this project will result in less diversion, and therefore increased critical flow in the Portneuf River. This increased river flow will be very beneficial for aquatic life in the Portneuf River.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project? Species listed or proposed to be listed as a Federal threatened or endangered species will not be affected by any activities associate with the proposed project. Designated critical habitat in the project area will also be unaffected by the proposed project.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have. No wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States" will be impacted by the proposed project.

When was the water delivery system constructed? Construction of the water delivery system began in 1957. The Portneuf Pumping station began construction in 1957 and was completed in 1963. The unit was about 80% complete (including the entirety of the South Main Canal) as of 1968, but construction on the unit was not fully completed until 1977.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously. The proposed project will significantly improve the infrastructure of the diversion and conveyance of the South Main Canal. Existing 1960 era pumps will be replaced with more efficient VFD pumps and 1 mile of the South Main Canal will be lined resulting in significant water and energy efficiency improvements.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question. The site of the original Fort Hall

(National Register of Historic Places Reference Number 66000306) is located 11 miles west of Fort Hall, Idaho on the Fort Hall Indian Reservation.

Are there any known archeological sites in the proposed project area? No archeological sites will be disturbed with this project.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations? The proposed project will not have a disproportionately high and adverse effect on low income or minority populations. It will add benefit to all water users in the region, especially minority members of the Shoshone-Bannock Tribes.

Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands? The proposed project will not limit access to or ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area? This project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

Required Permits or Approvals

At this time the Tribes understand that permits or approvals will not be necessary in order to implement the proposed project.

Official Resolution

The official resolution from the Tribes' governing body for the proposed project is attached in Appendix B.

Letters of Support

Letters of Support for the proposed project are attached in Appendix C.

Appendix A:
SF-424C Form

OMB Number: 4040-0008
Expiration Date: 01/31/2019

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	$ 0.00	$ 0.00	$ 0.00
2. Land, structures, rights-of-way, appraisals, etc.	$ 0.00	$ 0.00	$ 0.00
3. Relocation expenses and payments	$ 0.00	$ 0.00	$ 0.00
4. Architectural and engineering fees	$ 60,000.00	$ 0.00	$ 60,000.00
5. Other architectural and engineering fees	$ 0.00	$ 0.00	$ 0.00
6. Project inspection fees	$ 0.00	$ 0.00	$ 0.00
7. Site work	$ 0.00	$ 0.00	$ 0.00
8. Demolition and removal	$ 0.00	$ 0.00	$ 0.00
9. Construction	$ 269,870.00	$ 0.00	$ 269,870.00
10. Equipment	$ 1,180,800.00	$ 0.00	$ 1,180,800.00
11. Miscellaneous	$ 276,148.60	$ 0.00	$ 276,148.60
12. SUBTOTAL *(sum of lines 1-11)*	$ 1,786,818.60	$ 0.00	$ 1,786,818.60
13. Contingencies	$ 0.00	$ 0.00	$ 0.00
14. SUBTOTAL	$ 1,786,818.60	$ 0.00	$ 1,786,818.60
15. Project (program) income	$ 0.00	$ 0.00	$ 0.00
16. TOTAL PROJECT COSTS *(subtract #15 from #14)*	$ 1,786,818.60	$ 0.00	$ 1,786,818.60
FEDERAL FUNDING			
17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply X 50 %		$ 893,409.30

Appendix B: Tribal Resolution

RESOLUTION

WHEREAS, the Business Council is the governing body of the Shoshone-Bannock Tribes and has the ultimate responsibility for budget approvals and overseeing the administration of all Tribal funds, as well as those funds awarded to the Shoshone-Bannock Tribes through contracts, grants and cooperative agreements regardless of the source; and

WHEREAS, the U.S. Department of Interior (DOI) Bureau of Reclamation Policy and Administration has funding announcement BOR-DO-18-F006 available for WaterSMART project that the Tribal Water Resources Department is seeking to apply; and

WHEREAS, the two objectives of the this project are to replace existing Portneuf Pumps with High-Efficiency Variable Frequency Drive Pumps and Reduce Seepage in the South Main Canal;

NOW, THEREFORE, BE IT RESOLVED BY THE BUSINESS COUNCIL OF THE SHOSHONE-BANNOCK TRIBES, that the Shoshone-Bannock Tribal Water Resource Department is hereby approved and authorized to submit a competitive application for funding from the U.S. Department of Interior Bureau of Reclamation Policy and Administration for up to $888,818.60 with a match in the amount of $898,000 with a submission due date of May 10, 2018; and

BE IT FURTHER RESOLVED, the Tribal Chairman or official designee is authorized to sign the application and all other appropriate documents required for submission of the application.

Authority for the foregoing resolution is found in the Indian Reorganization Act of June 18, 1934 (48 Stat., 984) as amended and including, but not limited to Article VI, Section 1 (a, g, r) of the Shoshone-Bannock Tribes Constitution and Bylaws of the Fort Hall Reservation.

Dated this 8th day of May 2018

Daniel Stone - Vice Chairman

Nathan Small, Tribal Chairman
Fort Hall Business Council

SEAL

CERTIFICATION

I HEREBY CERTIFY, that the foregoing resolution was passed while a quorum of the Business Council was present by a vote of 4 in favor, 2 absent (NS, TB), and 1 not voting (DS) on the date this bears.

Daniel L. Stone

Daniel L. Stone, Tribal Secretary
Fort Hall Business Council

CTRT-2018-0366

Appendix C: Letters of Support

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Fort Hall Irrigation Project
P.O. Box 220, Bldg. 2
Fort Hall, Idaho 83203

In Reply Refer to
Project Managers Office

Dear Reclamation,

The DOI/BIA Fort Hall Irrigation Project represents one of the largest Indian irrigation projects in the country and is located on some of the best farmland in Idaho. The Project has a long history dating back to 1889 when initial surveys were conducted. One of the more recent additions to the Project is the Michaud Unit, which was a component of the Minidoka Project, authorized in 1954 and completed by 1977. The Michaud Unit represents some of the best ground for high-value crops in the Project. The Michaud Unit is primarily served by a large pumping plant located on the Portneuf River, along with some supplemental groundwater wells. The pumping plant has served us well over the decades but is currently in need of replacement/rehabilitation. One of the three pumps has been inoperable for a number of years and we feel that the remaining two pumps have a limited life expectancy. These pumps are the main water supply source for over 13,000 irrigated acres in the Project. Secondarily, studies have found that the Michaud Canal seeps significant quantities of water as it passes over some sandy soils in its upper reach. Lining the canal is expected to reduce our pumping needs from the river, and increase the overall efficiency of the system.

The proposed project has the potential to directly benefit the Michaud Unit water users, the BIA Fort Hall Irrigation Project as the operator, and the Tribes. The project represents an opportunity to replace and modernize the Michaud Unit water system using water-efficient infrastructure and up to date technology. We are writing to express our support for the WaterSMART Water and Energy Efficiency Grant project being proposed by the Tribes, and encourage Reclamation to fund this important effort.

Sincerely,

David Bollinger
Irrigation Project Manager
DOI/BIA Fort Hall Irrigation Project
Fort Hall, Idaho