Jensen Spur Lateral

Belle Fourche Irrigation District (BFID)

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TECHNICAL PROPOSAL

- EXECUTIVE SUMMARY-February 14, 2020, the Belle Fourche Irrigation District (BFID) located in Butte County, South Dakota with district offices in Newell, South Dakota submits this Funding Opportunity Number BOR-DO-20-F006. The Belle Fourche Irrigation District supplies water to 57,183 irrigable acres and over 500 farmers. We strive to be conservative while remaining productive in water deliveries.

  The planned conservation activities for Funding Opportunity Number BOR-DO-20-F006 are to install approximately 2640 feet of 15-inch PVC pipe and Farmer turnouts (FTO) on the Jensen Spur Lateral. This project would remove an open seeping ditch that is approximately 2640 feet on the Jensen Spur Lateral. Funds for this project will be used to pay for pipe and appurtenances to control and measure water flow. The water savings of this project are estimated at approximately 350-acre feet per year.

  The time to construct the Jensen Spur Lateral project is presented in the budget tables assuming 21 days to install the pipeline and farmer turnouts (FTO), valve wells, and flow meters. Mobilization and demobilization are estimated at 5 days, installation of the pipe is an estimated 16 days. The project is scheduled to begin in the fall of October 2021 and be completed within approximately 21 days. Completion of the project will be done within 2 years in the event of any weather or technical delays.
  The Belle Fourche Unit is a Reclamation Facility owned by the United States and operated and maintained by the Belle Fourche Irrigation District (BFID).

- BACKGROUND-**Water Source**-The Belle Fourche River drainage basin above the Belle Fourche Diversion Dam (4300 square miles) and Owl Creek drainage above the dam (170 square miles) is the water source for the Belle Fourche Reservoir (Orman) with an average inflow of 116,000 acre –feet. The water right is held by the Bureau of Reclamation under the water right laws of the state of South Dakota. The use of the dam is for agricultural purposes. At this time there are over 500 landowners that the District provides irrigation water to, with 57,183 irrigable acres. The majority of the crops are alfalfa, corn, soy beans, millet, and grass hay. Should there be a drought and the dam not fill our landowners would not be able to produce a crop. The amount of precipitation each year dictates the amount of water each farmer is entitled to which varies from year to year.
- **Water Conveyance**- The distribution system has 66 miles of main canals approximately 2 miles of them are lined, 450 miles of laterals with approximately half of this piped, and 232 miles of open drains. The system is operated and

maintained by the BFID. The approximate number of head gates is 2,045 at this time. We have approximately 55 automated sites with all but 3 working; however, these are being repaired this summer. We have a remote monitoring system at the office with capabilities of opening and closing the gates while checking on and monitoring the water flows.

- **Past Water Conservation Activities**-The BFID has participated with Reclamation in water conservation for several years. The district presently has a 2017 Water Conservation effort in place. We have received grants for lining the Inlet Canal in 2011, also piping the Woods Lateral, Horse Creek Lateral, and Antelope and Stage I of the Herman Lateral in 2013-2015. Piping the Reedy Lateral in 2016 and are currently working on the Beresford Lateral siphon project. Herman Lateral final phase has begun and should be completed by April 2020.

Project Location-

- The Belle Fourche Irrigation District located in Butte County, South Dakota with district offices in Newell, South Dakota. This activity will take place on the Indian Creek 24.3 Sub-Lateral located at 44° 39' 19.4" N Latitude, -103° 24' 25.6" W longitude approximately 8 miles from the nearest town of Newell, South Dakota and 6 miles from the town of Vale, South Dakota.

Technical Project Description and Milestones-

- **Describe the work in detail and milestones**-The Belle Fourche Irrigation District (BFID) plans to install approximately 2640-feet of underground pipeline in an existing 2640-foot seeping open ditch that is at the end of a pipeline. This ditch is deep and seeps. It is hard for our ditch riders to measure and deliver consistent amounts of irrigation water. By eliminating the open ditch and installing a pipeline we will save fuel and labor hours, trying to control the seepage and erosion. It will benefit all the landowners on our project in the long term by saving water and preserving the land. The outcome of this project is to conserve water while stopping the seeping. Erosion will be minimized and the minimal amount of alkali will benefit everyone in the end. The majority of soil in this area is Savo silty clay loams, with 0 to 2 percent slopes and Keith silt loam. BFID has appropriated approximately 21 days to complete this project. The District plans to take 2 days mobilizing hauling pipe, equipment, and appurtenances from the staging area. Once equipment is on location, they will shoot the ditch for grade and begin digging to specifications and installing the pipeline. The district feels confident it will lay 200 feet of pipe per day it will take approximately 13 days. Once all the pipe is laid three Resilient Wedge 12" valves will be installed with valve wells and flow meters measuring devices this will take approximately one day per valve (three days). Demobilization will take three days of loading up equipment and hauling to the District Headquarters along with cleaning up the work site and reclaiming the site back to its original state. The District will reseed the ground as part of our reclamation efforts.

- **Identify the problems and needs**-The open ditch provides poor delivery service to farmers while wasting water and creating alkali patches. Landowners would be able to irrigate and operate better if the seepage and delivery could be controlled. The need for a pipeline in this area would help the landowner be more productive and the BFID more conservative.
- **Describe how the project is intended to address the problems and needs**-Piping the Jensen Spur Lateral will enclose the system and create water conservation and eliminate the seepage creating an effortless delivery to our landowners. This project will also eliminate the erosion being caused by running water. It may also encourage the landowners to install center pivots. Creating a larger water saving.
- **Identify the expected outcomes**-By piping the lateral the BFID would conserve water and eliminate erosion. This project will help production of the landowners and lessen the alkali content in the soil. The water savings is estimated by the Bureau of Reclamation Rapid City office to be approximately 350-acre feet per year.

Evaluation Criterion A- **Describe the expect benefits and outcomes of implementing the proposed project.**

- **What are the benefits to the applicant's water supply delivery system?** By piping the lateral the BFID would conserve water and eliminate erosion. This project will help production of the landowners and lessen the alkali content in the soil. The water savings is estimated by the Bureau of Reclamation Rapid City office to be approximately 350-acre feet per year.
- **If other benefits are expected explain those as well. Consider the following:** BFID conserves water to ensure recreational activities can take place at the dam such as fishing, swimming, camping, and boating.
- **Extent to which the proposed project improves overall water supply reliability:** This project would close off a system and make the waste water minimal. This would save an estimated 350-acre feet of water per summer.
- **The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)-** BFID expects the geographic scope to benefit our area by identifying specific tools needed to be considered for water savings. BFID would be able to track the amount of water that is actually being used verses what is wasting.
- **Extent to which the proposed project will increase collaboration and information sharing among water managers in the region-** This project would help other area managers by allowing BFID to share our water savings and conservation techniques and data.
- **Any anticipated positive impacts/ benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)-** BFID would positively impact the Belle Fourche Reservoir by allowing more water for recreation. Agriculture would be impacted by the landowner not running out of water due to

waste as it would be more controlled. This would help the environment by not encouraging unwanted weeds and trees to grow that would need chemicals to control them.

- **Extent to which the project will complement work done in the coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQUIP or other programs.** This project would encourage the farmers to apply for assistance as now they would not need to worry about how they would get the water needed for a pivot or private farmer pipeline. This would allow for direct connection to the Districts water supply and we would have measurement devices that will not plug the pipelines.

Evaluation Criterion B- **Planning Efforts Supporting the Project-Describe how your project is supported by an existing planning effort.** Each year the District budgets a set amount of funds to support the grants we apply for. Each year there is a minimum of $75,000.00 set up for the match in which we use to pay our employees and use our equipment. BFID is concerned about conservation and erosion control. We also preserve the quality of our planet in any way possible.

- **Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?** Yes, this project would stop the erosion and help conserve water.
- **Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/ measures.** The erosion on this project is detrimental. This project is a large gravity fed system with the installation of center pivots above this open ditch we feel enclosing this system would provide a better delivery for all the farmers involved. NRCS is working with landowners in this area and assisting with on farm costs of pipelines and pivots. Enclosing the system and allowing the landowners to directly connect to our system encourages them to apply for the funding through EQUIP and NRCS to upgrade their farms.

Evaluation Criterion C- **Project Implementation- Describe a detailed plan.**

- **Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.** The Belle Fourche Irrigation District (BFID) plans to install approximately 2640-feet of underground pipeline in an existing 2640-foot seeping open ditch that is at the end of a pipeline. This ditch is deep and seeps. It is hard for our ditch riders to measure

and deliver consistent amounts of irrigation water. By eliminating the open ditch and installing a pipeline we will save fuel and labor hours, trying to control the seepage and erosion. It will benefit all the landowners on our project in the long term by saving water and preserving the land. The outcome of this project is to conserve water while stopping the seeping. Erosion will be minimized and the minimal amount of alkali will benefit everyone in the end. The majority of soil in this area is Savo silty clay loams, with 0 to 2 percent slopes and Keith silt loam. BFID has appropriated approximately 21 days to complete this project. The District plans to take 2 days mobilizing hauling pipe, equipment, and appurtenances from the staging area. Once equipment is on location, they will shoot the ditch for grade and begin digging to specifications and installing the pipeline. The district feels confident it will lay 200 feet of pipe per day it will take approximately 13 days. Once all the pipe is laid three Resilient Wedge 12" valves will be installed with valve wells and flow meters measuring devices this will take approximately one day per valve (three days). Demobilization will take three days of loading up equipment and hauling to the District Headquarters along with cleaning up the work site and reclaiming the site back to its original state. The District will reseed the ground as part of our reclamation efforts.

- **Required permits or approvals-** The design drawing was done in our office. At this time, we are awaiting the NEPA compliance approval, in which the District submitted in February of 2020. BFID will confirm our ROW (Right of Way) with the Bureau of Reclamation office in Rapid City, SD. BFID has done a design drawing of the proposed project and will attach it. The BFID will be matching this grant with an in-kind match. The Board of Directors and the Rapid City Bureau of Reclamation are in support of this funding opportunity.
- **Describe any new policies or administrative actions required to implement this project-** BFID already has policy for this action of any direct connect or water usage. This project would reduce paperwork by not tracking the water loss and environmental damages caused by the seepage.
- **Describe how the environmental compliance estimate was developed**- BFID estimates the value based on prior experience. We utilize the BOR often and this amount is an estimate.

Evaluation Criterion D-**Nexus to Reclamation**

- **Is the proposed project connected to a Reclamation project or activity?** The Belle Fourche Unit is a Reclamation Facility owned by the United States and operated and maintained by the Belle Fourche Irrigation District (BFID). **If so, how? Please consider the following:**
    - **Does the applicant receive Reclamation project water?** Yes, BFID is a partner of the Reclamation.

- **Is the project on Reclamation project lands or involving Reclamation facilities?** Yes, BFID is a Reclamation
- **Is the project in the same basin as a Reclamation project or activity?** The Belle Fourche Irrigation District (BFID) is in the Missouri Basin Pick-Sloan Plan.
- **Will the proposed work contribute water to a basin where a Reclamation project is located?** Yes, this proposed work will contribute water savings in the Missouri Basin Pick-Sloan Plan. BFID is a managing partner with the Bureau of Reclamation in South Dakota.
- **Will the project benefit any tribe(s)?** This project is not on tribal ground, therefore; it is not applicable.

Evaluation Criterion E-**Department of Interior and Bureau of Reclamation Priorities**

- **Creating a conservation stewardship legacy second only to Teddy Roosevelt:** Under the Belle Fourche Irrigation Districts leadership, the BFID mitigates dams for wildlife and conserves water for storage to create more recreation in our area. The Belle Fourche Reservoir contains some of Western South Dakotas best fishing and skiing in this area. We work hand in hand with NEPA and SHPO to preserve any artifacts or history in or around our project.
  - **Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;** BFID has installed a SCADA system and has utilized automation to assist in water conservation and erosion control.
  - **Examine land use planning processes and land use designations that govern public use and access;** BFID implements programs to conserve water for public fishing and other recreational uses. BFID provides mitigation to fill dams on public and private lands.
  - **Revise and streamline the environmental and regulatory review process while maintaining environmental standards;** BFID works hand in hand with Bureau of Reclamation and obey all NEPA policies.
  - **Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity;** BFID assists the BOR in reading gages at the dam to measure the water levels. BOR uses this information to ensure no changes in the dam to compromise its integrity.
  - **Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands;** this funding opportunity would allow BFID to continue to work closely with NRCS, Watershed, and

EQUIP to increase the areas conservation efforts and expand usage of the public lands.

- **Identify and implement initiatives to expand access to DOI lands for hunting and fishing;** BFID provides mitigation for dams throughout our project to provide water for animals and fish in the winter months.
- **Shift the balance towards providing greater public access to public lands over restrictions to access-** BFID along with the BOR have been working to provide more access to the lands around the Belle Fourche Reservoir. BOR is working to add more camp sites and fishing locations and a possible boat ramp.

- **Utilizing our natural resources-** Under the Belle Fourche Irrigation Districts leadership and partnering with the Reclamation we preserve all-natural resources and protect any and all endangered species that may be on our project. We comply with the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), Endangered Species Act (ESA), the National Historical Preservation Act (NHPA), and the State Historic Preservation Office (SHPO). Costs for compliance are considered part of this grant.
  - **Ensure American Energy is available to meet our security and economic needs-** BFID is a gravity fed system.
  - **Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications-** this opportunity should not impede on any mineral resources.
  - **Refocus timber programs to embrace the entire healthy forests' lifecycle-** the expected work area is on the prairie; therefore, this is not applicable.
  - **Manage competition for grazing resources-** this project would limit the spread of noxious weeds and trees that are currently taking over in the area. Farmers would be able to control the invasive without impacting the desirable species.
- **Restoring trust with local communities:** Belle Fourche Irrigation District provides Federal water to the Town of Newell. We work closely with the Town to provide Federal water and keep communication lines open. We take suggestions and assist the Town when needed. On occasion the Town assists us. We try hard to work closely with all our farmers in and out of our District to make all our lives better. We have been in contact with Fish and Wildlife offices to assist with beaver relocation and coyote issues.
  - **Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands.** This is part of our goal each year. BFID tries to accommodate and assist everyone bordering us.
  - **Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county**

commissioners, Tribes, and local communities- BFID reaches out to these offices as needed and are always eager to assist them as well.

- **Striking a regulatory balance**
    - **Reduce the administrative and regulatory burden imposed on U.S. industry and the public-** This pipeline project will help reduce administrative and regulatory burden by providing more efficient water deliver, which will result in time savings to the ditch rider and other District staff. In addition, by moving this infrastructure below ground will reduce the need for organizing future maintenance.
    - **Ensure that Endangered Species Act decisions are based on strong science and thorough analysis-** This project will ensure the ESA by moving this water delivery infrastructure underground.
- **Modernizing our infrastructure**
    - **Support the White House Public/ Private Partnership Initiative to modernize U.S. infrastructure:** This helps stimulate BFID with upgrading our project, by installing this and other pipelines we keep our employees working through the winter months providing them with jobs year around. In a rural area like ours this is very important.
    - **Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;**
    - **Prioritize DOI infrastructure needs to highlight:**
        i. **Construction of infrastructure-** The Belle Fourche Reservoir began first stages of construction in 1904. This is a historic district and BFID maintains and operates the dam in conjunction with the BOR. Any upgrades that do not affect the historical aspects are expensive the financial responsibility of the BFID. We prioritize new construction to reduce BFID's waste and to try to prevent failures later in history.
        ii. **Cyclical maintenance-** BFID does regular routine maintenance and partners with the BOR to maintain and prevent failure.
        iii. **Deferred maintenance-** BFID works with the BOR to do a NEPA review work list. We prioritize and set goals to achieve the deferred maintenance plan prior to failure or catastrophe.
- **Reclamation Priorities-** as stated prior we are a managing partner with the BOR. BFID is in compliance with BOR requirements and all priorities are reviewed yearly and goals and plans are made to achieve these in a timely manner. BFID can conserve or improve water usage, delivery, supply, and prevent a drought by installing these small pipelines and conserving water.

Project Budget

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				**$30,548.76**
Interim Manager/Foreman	$ 27.06	150.0	hours	$ 4,059.00
Office Manager	$ 19.50	25.0	hours	$ 487.50
Administration	$ 15.79	50.0	hours	$ 789.50
Operator 1	$ 23.14	168.0	hours	$ 3,887.52
Operator 2	$ 20.37	168.0	hours	$ 3,422.16
Operator 3	$ 18.31	168.0	hours	$ 3,076.08
Truck Driver	$ 18.50	140.0	hours	$ 2,590.00
Truck Driver 2	$ 15.95	140.0	hours	$ 2,233.00
Labor (pipe Layer)	$ 16.00	140.0	hours	$ 2,240.00
Labor (pipe Layer)	$ 15.00	140.0	hours	$ 2,100.00
Laborer	$ 15.00	120.0	hours	$ 1,800.00
Laborer	$ 14.00	120.0	hours	$ 1,680.00
Laborer	$ 13.00	168.0	hours	$ 2,184.00
Fringe Benefits				**$8,787.88**
Foreman	$6.37	150.0	hours	$ 955.50
Office Manager	$5.63	25	hours	$140.70
Administration	$5.26	50.0	hours	$ 263.00
Operator 1	$6.01	168.0	hours	$ 1,009.68
Operator 2	$5.74	168.0	hours	$ 964.32
Operator 3	$5.51	168.0	hours	$ 925.68
Truck Driver	$5.51	140.0	hours	$ 771.40
Truck Driver 2	$1.70	140.0	hours	$ 238.00
Labor (pipe Layer)	$5.27	140.0	hours	$ 737.80
Labor (pipe Layer)	$5.17	140.0	hours	$ 723.80
Laborer	$5.16	120.0	hours	$ 619.20
Laborer	$5.06	120.0	hours	$ 607.20
Laborer	$4.95	168.0	hours	$ 831.60
Use of District-owned Equipment				**$35,756.84**
Case Backhoe	$ 36.41	168	hours	$ 6,116.88
Skid Steer case	$ 21.37	48	hours	$ 1,025.76
Cat Excavator	$ 58.54	168	hours	$ 9,834.72
Allis Chalmers Fork Lift	$ 19.70	48	hours	$ 945.60
PeterBuilt/Trailer	$ 53.73	32	hours	$ 1,719.36
GMC Semi/Trailer	$ 53.73	32	hours	$ 1,719.36
GMC Dump Truck	$ 50.67	48	hours	$ 2,432.16
GMC Dump Truck	$ 50.67	48	hours	$ 2,432.16
Cat Dozer D6	$ 51.44	36	hours	$ 1,851.84
Rental of remote trench roller	$ 640.00	2	weeks	$ 1,280.00
Purchase of Portable Flow Meter	$ 6,399.00	1	weeks	$ 6,399.00

Supplies and Materials				$71,762.60
15" PVC PIP 100PSI	$ 9.50	2640		$ 25,080.00
12X12 Tee	$ 154.80	2		$ 309.60
4X15 Saddle PIP w/straps	$ 103.83	2		$ 207.66
18 X 15 Tee 100PSI	$ 395.74	1		$ 395.74
18 X 15 Reducer 100psi	$ 337.15	1		$ 337.15
15 X 12 Tee 100psi	$ 204.21	3		$ 612.63
15" 90° elbow 100psi	$ 294.22	3		$ 882.66
12"X90° Elbow 100 PSI	$ 169.82	4		$ 679.28
15" X 12" Reducer 100PSI	$ 166.46	4		$ 665.84
4" Air Vent	$ 111.00	2		$ 222.00
12" Alfalfa Riser	$ 260.00	2		$ 520.00
Gallon of Gray Pipe Glue	$ 86.27	6		$ 517.62
Gallon Purple pipe Cleaner	$ 67.10	6		$ 402.60
High Pressure Valves Resiliant Wedge	$ 2,343.94	3		$ 7,031.82
Operating nut	$ 41.54	3		$ 124.62
Flanges	$ 165.87	6		$ 995.22
Accessories for flanges	$ 48.46	6		$ 290.76
CRP Mix grassland	$ 250.00	5		$ 1,250.00
Pipe Bedding	$ 9.95	88		$ 875.60
Valve Wells	$ 405.40	3		$ 1,216.20
Valve Well Lids	$ 148.20	3		$ 444.60
Portable 210 Flow Meter	$ 6,399.00	3		$ 19,197.00
Magnetic Flow Meter	$ 5,900.00	1		$ 5,900.00
Flow Meter	$ 1,802.00	2		$ 3,604.00
Other				**$3,000.00**
Environmental compliance/review	$3,000.00	1		$ 3,000.00
TOTAL DIRECT COSTS				**$149,856.08**
Indirect Costs				
None				$0.00
TOTAL ESTIMATED PROJECT COSTS				**$149,856.08**

Funding Sources	Percent of Total	Total Cost by Source
Recipient Funding	50%	$75,093.48
Reclamation Funding	50%	$74,762.60
TOTALS	**100%**	**$149,856.08**

- **Budget Proposal**- See Appendix B
- **Funding Plan and Letters of Commitment**-All of these funds will be contributed by assessment income and savings accounts. BFID has full support of the Board of Directors and Bureau of Reclamation. See Appendix E
- **Budget Narrative-** The in-kind match The Belle Fourche Irrigation District (BFID) will provide will be equipment and man hours. It is assumed to take 21 days to complete this project. Two days to mobilize the equipment and haul PVC pipe and supplies to the Jensen Spur Lateral. Demobilization will take three days to clean up, reseed the ground and remove all equipment and debris. This is a total of 21 days. Each employee is in the proposal at current wages with fringe benefits included as of February 24, 2020. Labor is approximately $39,336.64 and is spent as follows:
    1. **Project manager/foreman:** On location the duration of the job to oversee all work is done accurately and safely this is a total of 150 hours at his current rate of pay with fringe benefits to total $5,014.50. Foreman is hands on and assists the crew as well. He is responsible for the project and tracking all work done.
    2. **Office Manager/ Administration:** Approximately 75 hours estimated for the Administration, $1,680.70 to document all hours, receipts, equipment usage, and to file all quarterly reports in a timely manner.
    3. **Operators:** Utilized daily to operate the equipment they will be on location 168-man hours each for a combined total of $4,823.00. Operators and Foreman will shoot the ditch for grade and lay approximately 200 feet of pipe per day taking approximately 13 days. An estimated 6 days are to install the valve wells and the flow meters to measure the water.
    4. **Truck drivers:** Haul all equipment, pipe, machinery, etc. needed to location, they will also drive the dump trucks to haul the bedding for the pipeline. The truck drivers may also be used to install the pipe in the trench, estimated usage for two men is 140 hours each for a combined total of $4,823.00. Our employees are cross trained and these have CDL's.
    5. **Laborers:** Used to lay pipe, keep area clean and safe, assist the foreman and operators as needed, estimated costs for these employees is $10,004.00. These guys are used in the trench to compact the soil with the roller packer also they glue the pipeline together and do any and all tasks the foreman assigns them. They will help the operators with mobilization and demobilization.

BFID used the United States Army Corps of Engineers (USACE) ownership and operating schedule to figure the equipment hours and adjusted them to our equipment. We estimate approximate usage of the following Equipment usage and additional portable flow meter estimate is $35,756.84.

- **Case backhoe-**168 hours @ $36.41 to backfill, move earth, and haul pipe, on location for a total of $6,116.88.
- **Case skid steer-**48 hours @ $21.37 used to load pipe backfill, disperse the pipe bedding for a total $1,025.76.

- **Caterpillar excavator-**168 hours @ $58.54 used to dig pipeline and valve wells- $9,834.72.
- **Allis Chalmers fork-** lift will be used in conjunction with the skid steer to load pipe in the staging area for 48 hours- $945.60.
- **Semi-trucks-** will be used to haul all equipment and pipe to location estimated usage is 48 hours for a total $3,438.72.
- **Dump Trucks-** BFID estimates the time to haul bedding from District Headquarters to location 48 hours per truck combined total-$4,864.32.
- **Caterpillar D6 dozer-**36 hours @ $51.44 used to move earth-$1,851.84.
- **Remote trench roller-** will be used to pack the bedding we will be renting it for 2.5 weeks- $1,280.00.
- **Purchase of Portable Flow Meter-**$6,399.00, these are used to measure water accurately on our project.

District total in-kind match of $75,093.48. All of these funds will be contributed by assessment income and savings accounts.

The Federal funding portion of this project is to purchase the necessary supplies that will be needed BFID got quotes from Knutson Irrigation, Fresno Valves & Castings Inc., Raisanen Seeds, McCrometer, Sierra Instruments.com, Pacific Steel, Hills material. The 15" PVC 100 psi pipe is priced at $9.50 per foot and 2640 feet are needed for a cost of $25,080.00, the two 4 inch air vents cost $222.00, two 4X15 saddles pip with straps cost $207.66, 18X15 Tee 100psi $395.74, 18X15 reducer 100psi is $337.15, two 12X12 tees 100psi $309.60, three 15X12 tees 100psi $612.63, three 15" 90 ° elbows 100psi 882.66, four 12" 90° elbow 100psi $679.28, four 15X12 reducers 100psi $665.84, and two 12" alfalfa risers cost $520.00, case of glue and pipe cleaner $920.22; the previous pipe and appurtenances were quotes from Knutson Irrigation. High pressure valves, nuts flanges cost $8,442.42 from Fresno. Valve well lids and wells, pipe bedding, and CRP grass mix cost $3,786.40 from Pacific Steel, Raisanen Seeds, and Hills Material. From McCrometer we will purchase a Magnetic flow meter and two regular flow meters at a cost of $9,504.00. BFID would like to also purchase 3 portable 210 flow meters from Sierra Instruments at a cost of $19,197.00. Federal funds will also pay $3,000.00 for NEPA, NHPO, ESA, etc. The total Federal funds requested at this time for the funding opportunity are $74,762.60.

Environmental and Cultural Resources

- **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.** The ground will be excavated and earth moved from an existing open lateral, pipe will be placed into the lateral it will be bedded and backfilled. BFID intends to reclaim the land and reseed the ground, this will cause the soil to create dust but it should be minimal as we will work in the fall and winter months as to not affect quality of the air in a manner unsuitable to the

neighborhood. Most of the animals would be in hibernation so we should not disturb them either. We plan to work in the late fall early winter to prevent any massive impact on the animals, air, soil, or the water.

- **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?** The Northern Long Eared Bat is suspected to reside in wooded areas Western South Dakota. They are on the Federal Endangered Species list. Therefore, according to the Bureau of Reclamation we are to do no work from March 1 to October 31. We do not intend to remove any trees but just in case our work would begin later when they move on and hibernate.
- **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.** This is not applicable to our project as there are no wetlands in this location.
- **When was the water delivery system constructed?** The Belle Fourche Project was authorized by the Secretary of the Interior for construction on May 10, 1904. Surveys for the project began in 1903. The Bureau of Reclamation (Reclamation) then Reclamation Service began construction of the facilities in 1905 and by 1908 construction was sufficient enough to begin delivering water to about 12,000 acres. The original project was completed in 1914. In 1949 the operation and maintenance responsibilities were transferred from Reclamation to the Belle Fourche Irrigation District (BFID). In 1985 the most recent rehabilitation and betterment (R&B) of the district facilities was done and through the authorization of the R&B the Belle Fourche Project became the Belle Fourche Unit as it was moved to fall under the Missouri Basin Pick-Sloan Plan.
- **Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, 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.** This Lateral has lost integrity and was modified during the rehab in 1985-1997. This work area will not result in any modifications of the original system. There are no features that will be affected. BFID has submitted paperwork to the Bureau of Reclamation and are currently waiting on their approval from NEPA and NHPO.

  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 State Historic Preservation Office can assist in answering this question. We utilized Renee Boen Director and State Archaeologist in South Dakota and her response is to follow. The Belle Fourche Irrigation District is an historic district eligible for listing on the National Register of Historic Places. The District was determined eligible under Criterion A, at the state and local level, for the National Register on August 25, 2002 (SHPO File #020716005F). The District's period of significance is 1904 to 1949.

Individual waterways are either contributing or non-contributing to the historic integrity of the District. In consultation with the South Dakota State Historic Preservation Officer (SHPO) in 2002 it was determined that for a lateral to retain integrity at least fifty percent of the lateral's length continue to exist in its original alignment, and not placed in pipe. In addition, at least fifty percent of the historic structures associated with the lateral must remain, and retain integrity. The Indian Creek Lateral is a contributing feature, however; the Horse Creek Sub-Lateral the Jensen Spur will finish is non-contributing. The Bureau of Reclamation is consulting with the NHPO on this project to determination any adverse effect to the historic district if this project is constructed.

- **Are there any known archeological sites in the proposed project area?** At this time the BFID sees no archeological items located at this site. Reclamation's archaeologist has not completed the cultural survey in the project work zone.
- **Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?** This project will have a positive effect on the low income and population as more water would be conserved and saved for irrigation and not wasting. The fields would be more productive.
- **Will the proposed project limit access to ceremonial use of Indian sacred sites or result in other impacts on tribal lands?** No ceremonial use of any Indian sacred site is located in this area. There would be no affect.
- **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?** I feel this may help control the noxious weed as they would no longer have constant water to help them grow and the water would not be available for them to travel in.

Required Permits or Approvals- BFID has submitted a preliminary project description to the Bureau of Reclamation to acquire any necessary easements or special permits. We see no delay in acquiring approval.

Official Resolution-**See Appendix D**

RESOLUTION FOR WATER AND ENERGY EFFICIENCY GRANT PROGRAM: WaterSMART

Small-Scale Water Efficiency Projects FY 2020

January 13, 2020

WHEREAS, the Belle Fourche Irrigation District in Newell, South Dakota is a legally organized irrigation district in the State of South Dakota, and

WHEREAS, the District promotes, supports and encourages water conservation, and

WHEREAS, the District urgently needs system improvements to maximize the utilization of a limited water supply and help sustain the viability of the project.

THEREFORE, BE IT RESOLVED that the Board of Directors of the Belle Fourche Irrigation District in South Dakota agrees and authorizes that:

1. The Board has reviewed and supports the application proposal to the WaterSMART: Small-Scale Water Efficiency;
2. The Board authorizes the District Secretary, Tara Tennis or Board Secretary/Treasurer Tanya Tifft, the legal authority to enter into the WaterSMART: Small-Scale Water Efficiency Grants agreement;
3. The Belle Fourche Irrigation District in South Dakota is capable of providing the in-kind services and matching obligations, and
4. If selected for a Small-Scale Water Efficiency Grant, the applicant will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

DATED: 1-17-2020

John Heisler, Board Chairman

ATTEST:

Tara Tennis, Secretary

my commission expires January 5, 2022

TARA TENNIS NOTARY SEAL PUBLIC STATE OF SOUTH DAKOTA