WaterSMART

WATER AND ENERGY EFFICIENCY GRANTS FOR FY 2024

NO. R24AS00052
FUNDING GROUP II

FARM CREEK CANAL REHABILITATION
DUCHESNE COUNTY WATER CONSERVANCY DISTRICT

DUCHESNE COUNTY, UTAH

ON BEHALF OF

FARM CREEK IRRIGATION COMPANY

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FEBRUARY 22, 2024

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1. TECHNICAL PROPOSAL

1.1. EXECUTIVE SUMMARY

Start Date: November 4, 2024

Applicant: Duchesne County Water Conservancy District

Partners: Farm Creek Irrigation Company

Location: Hanna, Duchesne County, Utah

Project Title: Farm Creek Canal Rehabilitation

Applicant Category: A

Project Summary:

The Farm Creek Canal Rehabilitation project is a partnering effort between the Farm Creek Irrigation Company and Duchesne County Water Conservancy District (DCWCD). The Farm Creek Canal Rehabilitation project will convert three miles of earthen canal to HDPE pipe. The planned project will eliminate seepage and evaporation losses that currently hinder the canal. Piping the canal will save 1,853 acre-feet of water per year, , benefiting the environment, agricultural users, and others downstream on the Duchesne River system. A more reliable water source will benefit agricultural users along the canal by allowing more diverted flows to make it to the users and higher quality crop production. This project will also incentivize water users to switch from flood irrigating to sprinklers. These efficiencies will allow a steadier and lower diversion from the Duchesne River and a longer irrigation season for those on the system.

The Duchesne County Water Conservancy District (DCWCD) is submitting this application on behalf of the Farm Creek Irrigation Company, as they were unable to successfully get a SAM registration completed and are a small company with very little budget and volunteer staff and board members..

Length of Time: 18 months

Completion Date: May 29, 2026

Federal Facility: No

1.2. PROJECT LOCATION

The Farm Creek Canal is located in the Tabiona Valley, within Duchesne County in northeastern Utah. The Uintah Basin lies to the south of the Uintah Mountains and is fed by creeks and rivers flowing south from these mountains. The principal rivers flow into the Duchesne River which feeds the Green River--a tributary of the Colorado River.

Latitude and Longitude – (40.401594, -110.763569)

1.3. PROJECT DESCRIPTION

The proposed project section of the Farm Creek Canal is an open, unlined canal approximately 3 miles in length running from its diversion from the Duchesne River to a settling/screening pond approximately 2 miles north of the town of Tabiona. After the settling/screening pond the existing system consists of about 4 miles of cement lined welded steel pipe. The capacity of the canal is approximately 46 cfs at the head and diminishes as diversions are made along the system. The Farm Creek Canal delivers water to about 1,100 acres of farmland. The primary crops include alfalfa and pasture. The major crop season in the area is mid -March through early October.

There are currently 9 active water rights drawing from the Duchesne River for the Farm Creek Canal. The canal delivers about 10,900 ac-ft of water per year; 9,300 ac-ft during the irrigation season and 1,600 ac-ft during the non-irrigation season. The maximum hourly flow of the canal is 42.77 cfs, the minimum hourly flow of the canal is 0.87 cfs, and the average hourly flow is 15.08 cfs. Current water rights allow for a total of 10.9 cfs to be used from the canal. Currently, 1,972 Acres are served by the Farm Creek Canal.

Currently, approximately three miles of the canal is unlined and open. This unlined, open portion leads into a screening/settling pond. After the screening/settling pond the lower 4 miles of the canal has been previously piped. The current system has one river return weir and pipeline, one flow measurement structure, and 46 total metered turnouts.

The proposed project would utilize the existing lower pipeline, and abandon the screening/settling pond. All open canal above the screening/settling pond would be piped and connected to the existing lower section of pipe. The proposed upper pipeline would consist of approximately 15,800 feet of 42-inch HDPE pipe. The new system would eliminate about 3 miles of open canal. The return flow to the river would be unnecessary after the project and more water would be left in the natural river system because the pipeline will only divert what is being used, and will also be metered.

1.4. EVALUATION CRITERIA

1.4.1. EVALUATION CRITERION A – QUANTIFIABLE WATER SAVINGS (25 POINTS)

All applicants should be sure to:

1) *Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project. Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.*

The estimated amount of water savings for the Farm Creek Canal Rehabilitation project is 1,853 acre-feet per year. This water loss is seen due to seepage within the earthen canal. It is estimated that 29.65% of the canal's flow is lost to seepage. This piping project will reduce water loss to nearly zero.

Describe current losses. Please explain where the water that will be conserved is currently going and how it is being used. Consider the following:

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

The current water losses are being lost out of the canal due to seepage. The water lost to seepage goes into the ground and eventually seeps back into the Duchesne River system, although water quality and salinity may be a detrimental by-product of the seepage. There are no known benefits to the current losses that are experienced. As stated above, 29.65% of the canal's flow is lost to seepage. This amounts to 1,853 acre-feet of water loss per year.

2) *Describe the support/documentation of estimated water savings. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.*

The water losses in the canal were first estimated by ditch riders and irrigation personnel, but in order to verify the assumptions, the water loss due to seepage was estimated using a seepage rate method for soils. The method requires a seepage rate to be provided and an area measurement where water is subject to seep into the ground. The seepage rates for the project area were determined using publicly available information. The flows for the canal are measured and recorded at duchesneriver.org. The flow information was gathered, and the velocity in the canal was then used to calculate an equivalent cross-sectional area of the water in the canal.

The area measurement used in the seepage rate calculation was then used to estimate the wetted perimeter using the hydraulic radius of an equivalent sized radial section of pipe. Using this area, the equivalent pipe size needed to convey the same amount of water at the same velocity was estimated. The area of the pipe is set to be only half circle because the canal does not enclose water. Thus, the size of the pipe needed to convey the same amount of water as if the pipe were half full is estimated. The equation of the circle was then used to determine arc length, or the wetted perimeter, of the canal that water can seep into. Using the wetted perimeter of the circle in the seepage calculation is conservative since the wetted perimeter of the circle is less than the actual wetted perimeter of the canal in the field.

The area where seepage is occurring was then estimated by multiplying the length of the canal by the wetted perimeter. This assumes that there is a constant flow throughout the length of the canal. To account for this assumption, the seepage area is halved if there is no flow at the end of the canal. The average of the wetted perimeter at the start and end of the canal is used to

calculate the seepage area when there is a given flow at the end of the canal. The seepage area multiplied by the seepage rate gives the seepage volume per unit of time.

Analyzing the seepage volume per day gives a good basis for analysis because the volume changes over time. The seepage volume is then divided by the amount of water diverted into the canal. This gives the seepage loss as a percentage of the total water diverted. The seepage loss per day was then multiplied by the number of days in the typical irrigation season for that canal to determine the annual loss due to seepage. This resulted in a loss of 1,853 acre-feet per year. This loss verifies the ditch rider and irrigation company personnel's estimations of the loss they were experiencing within the canal.

3) *Please address the following questions according to the type of infrastructure improvement you are proposing for funding.*
   (1) ***Canal Lining/Piping****: Canal lining/piping projects can provide water savings when irrigation delivery systems experience significant losses due to canal seepage. Applicants proposing lining/piping projects should address:*
      a) *How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.*
      b) *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.*
      c) *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)?*
      d) *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?*
      e) *How will actual canal loss seepage reductions be verified?*
      f) *Include a detailed description of the materials being used.*

The average annual water savings was estimated first by ditch riders and irrigation company personnel. The flows in the canal are measured using flumes, and the flows are recorded on www.duchesneriver.org. Knowing the flows, the irrigation company personnel estimated the losses due to seepage and leaks based off a percentage of the flows. In order to verify these estimations, a soil seepage study was performed. Reference question 3 above for a detailed explanation of the seepage study. The seepage study took the wetted perimeter of each canal, multiplied it by the length to find the seepage area, and then used the seepage rate of the soils to determine the seepage losses that were being experienced. The overall length of the project is 15,800 feet or 3.00 miles. The total water lost to seepage is estimated to be 1,853 acre-feet per year. Therefore, the loss per mile of canal is approximately 618 acre-feet per year.

The seepage study that was performed assumes that there is a constant flow throughout the length of the canal. To account for this assumption, the seepage area is halved if there is no flow

at the end of the canal. The average of the wetted perimeter at the start and end of the canal is used to calculate the seepage area when there is a given flow at the end of the canal. Running the calculations this way allows for a conservative approach.

The canal is to be fully enclosed with HDPE pipe. The seepage or leakage losses post-project is expected to be 0 acre-feet per year. HDPE pipe will not allow for seepage loss, greatly increasing the efficiency of the canal and has a very long life, beyond 50 years and likely more.

The actual seepage calculations will be verified after the installation of the pipeline. SCADA will be used to measure the flow at the canal's diversion from the Duchesne River. Flow will also be measured with an insertion meter at the end of the proposed project. These measurements will be compared to determine post project losses. There will also be insertion meters installed at strategic locations including laterals and turnouts to verify the flow within the pipeline.

(2) ***Municipal Metering****:*

No municipal meters included in this application and scope of work.

(3) ***Irrigation Flow Measurement****:*

The irrigation flow measurement will be installed as part of the canal lining/piping scope of work. An ultrasonic or mag meter will be installed on the pipeline near the diversion and tied to existing telemetry for the Duchesne River and monitored by both the Company and the River Commissioner. There will also be meters installed in the turnouts for this stretch of pipeline such that individual users are also monitored and valves are in place to control the flow and stay within the water right and water shares that the company has.

(4) ***Turf Removal****:*

No turf removal included in this application and scope of work.

(5) ***Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles****:*

No smart irrigation controllers in this application and scope of work.

(6) ***High-Efficiency Indoor Appliances and Fixtures****:*

No high-efficiency indoor appliances and fixtures in this application and scope of work.

(7) ***Commercial Cooling Systems****:*

No commercial cooling systems in this application and scope of work.

1.4.2. EVALUATION CRITERION B – RENEWABLE ENERGY (20 POINTS)

1.4.2.1. SUBCRITERION B.1 – IMPLEMENTING RENEWABLE ENERGY PROJECTS RELATED TO WATER MANAGEMENT AND DELIVERY

Describe the amount of energy capacity*. For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.*

Solar panels and data loggers will be implemented for flow metering. A typical panel that would be used in this project is estimated to have an average capacity of 0.3 Kilowatts. Currently, it is assumed that these panels and data loggers will be strategically installed at the pipeline inlet, laterals, and turnouts.

Describe the amount of energy generated. *For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate. Please explain how the power generated as a result of this project will be used, including any existing or planned agreements and infrastructure.*

The power used in this project will be minor, with enough energy to operate sensors and SCADA system. This information will provide the Farm Creek Irrigation Company with flow data and allow them to make adjustments to the system as appropriate.

Describe the status of a mothballed hydropower plant*.*

Not applicable to this project.

Describe any other benefits of the renewable energy project*. Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:*

- *How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions*
- *Expected environmental benefits of the renewable energy system. 39 Notice of Funding Opportunity No. R24AS00052*
- *Any expected reduction in the use of energy currently supplied through a Reclamation project.*
- *Anticipated benefits to other sectors/entities.*
- *Expected water needs, if any, of the system.*

The amount of travel time and time spent adjusting flows will be significantly reduced from this project's telemetry and automation. Currently flows in the Farm Creek Canal are being adjusted manually. With flows being regulated remotely there will be less power and fuel consumption, reducing greenhouse gas emissions.

AND/OR

1.4.2.2. SUBCRITERION B.2 – INCREASING ENERGY EFFICIENCY IN WATER MANAGEMENT

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

- *If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.*

  This project will directly benefit The Farm Creek Irrigation Company because automation, telemetry, and SCADA will reduce the number of trips required for maintenance of the canals. Trips made by the ditch rider to the canal average 12 miles per trip, and using an IRS mileage rate of $0.655 per mile, the savings per trip not taken is $7.86. Further, it is estimated that there are substantial savings resulting from piping the canal to reduce the amount of time machinery is required to be used to maintain the canals. Currently, heavy machinery is used to maintain the canal and remove silt buildup.

- *How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*

  Less physical travel for maintenance of the canals will greatly reduce required vehicle usage and therefore reduce greenhouse gas emissions. The project will also add some pressure to the system, allowing more hydraulic gravity pressure to assist agricultural users and less reliance upon pumping. There are also benefits for not having to use heavy machinery to do maintenance on the open channel.

- *If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?*

  Piping the Farm Creek Canal will eliminate the need for land owners to pump in most cases. Currently pumps are used so land owners can irrigate their land since the canal is fairly flat and only certain fields have enough gravity pressure. Piping and pressurizing the canal will allow most of the land owners to reduce their power usage by eliminating pumping.

- *Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.*

  Energy savings occurs at the points of measurement as well as along the length of the pipeline. The points of measurement will be where the solar panels are installed for the telemetry and SCADA. Pressurized irrigation would occur along the length of the pipeline resulting in the elimination of pumping and energy savings.

- *Does the calculation include any energy required to treat the water, if applicable?*

  Not applicable to this project.

- *Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.*

Yes, as mentioned above, the project will result in less miles driven, in turn reducing greenhouse gases. Trips made by the ditch rider to the Farm creek canal diversion average 12 miles per trip. Using an IRS mileage rate of $0.655 per mile, the savings per trip not taken for maintenance and repairs for of the canal is $7.86.

- *Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).*

  The small scale solar with SCADA and telemetry will result in energy savings over the long run. Due to the location of the canal and future SCADA locations installation will be cheaper than other remote canal project SCADA installation.

1.4.3. EVALUATION CRITERION C – OTHER PROJECT BENEFITS (15 POINTS)

Resilience and Sustainability Benefits. *Will the project address a specific water and/or energy sustainability concern? Please address the following:*

- *Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:*
  - *Describe recent, existing, or potential drought or water scarcity conditions in the project area.*
  - *Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?*
  - *Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).*

Water sustainability issues for the area are coming from shortages due to drought and any other change or reason for less precipitation, less snowpack during winter months, and increased pressure on agriculture for economically viable products despite growing costs of fuel, materials, and chemicals as well as increased demand upon certain products and services.

In recent years, much of Utah, including the Uintah Basin, has been in drought conditions, including times much of the state has been in extreme or exceptional drought as determined by the U.S. Drought Monitor (drought.gov). This has led to water scarcity in many of the recent years.

Winter snowpack usually sets the tone for drought in the Uintah Basin as well as the Colorado River Basin. Utah as a whole has had one of driest Decembers on record since 1895 this year with 0.6 inches of total precipitation, which is 0.51 inches lower than normal. If that trend continues, drought could be expected to persist for the Uintah Basin and much of Utah. A historical drought graph for the state of Utah from 2000 to present is shown below in Figure 1.

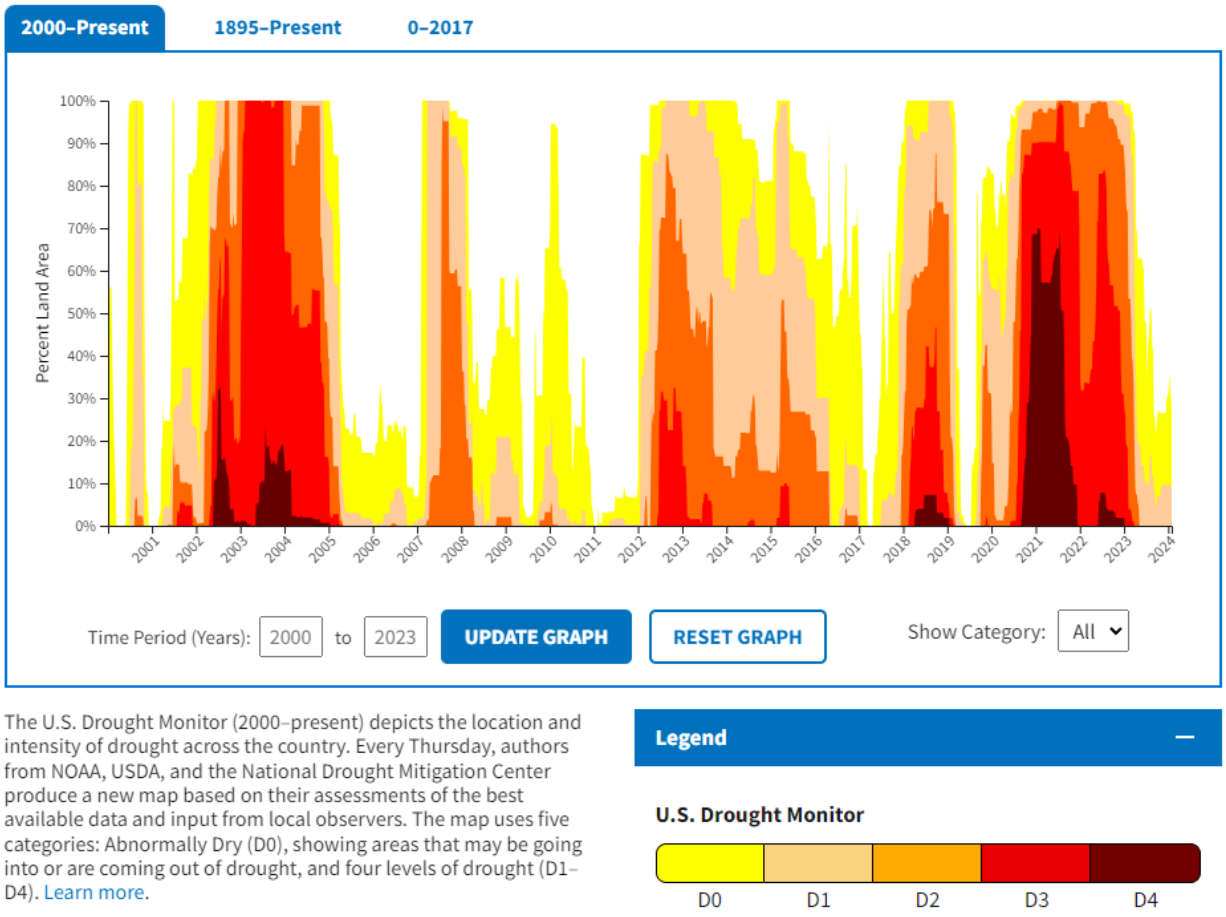


Figure 1 Historical Drought Conditions - Utah

- *Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.*

  Due to water shortages irrigation seasons are frequently cut short. This leads to lower crop production and drought conditions in the area. Also, the Farm Creek Canal lies within the Uintah Basin which is a valuable source of fossil fuels and has impacts due to fossil fuel extraction. This causes strain on water resources in both population boom & bust cycles as well as production water for extraction activities. Irrigation water is sometimes targeted for lease by these companies and therefore unavailable for agriculture and other ecological resources.

- *Please describe how the project will directly address the concern(s) stated above.*

  Efficiency in irrigation will reduce impacts of shortages and improve drought conditions as much as possible with the water that is available. Reducing losses, improved measurement capability and accountability of water usage will benefit both the direct water users and indirect users/beneficiaries.

- *Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?*

  Yes, the Farm Creek Irrigation Company will be able to adjust and monitor flows remotely. Currently, this is not possible, and causes issues with water volumes in the canal. Piping the canal will allow for management to rely on flow measurements, and not need to account for seepage losses. Real time monitoring and the elimination of seepage losses will result in longer irrigation seasons, more water remaining in the Duchesne River, and a more efficient system overall.

- *Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*
  - *Indicate the quantity of conserved water that will be used for the intended purpose(s).*
  - *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use. 41 Notice of Funding Opportunity No. R24AS00052*

  As noted previously in this application, the quantity of conserved water will be 1,853 acre-feet per year. Often because of seepage and fluctuations in the open channel and diversion at the river, excess water is diverted and then returned to the river just upstream from the existing settling pond. This water will stay within the Duchesne River, benefiting the environment and those downstream from the project area. It will lessen the shortages seen downstream. Piping the canal and real time monitoring are the mechanisms that will allow for this increased efficiency and extra water downstream.

- *Will the project assist States and water users in complying with interstate compacts?*

  This project increases efficiency and improves water stewardship in the Duchesne River. The Duchesne River is a tributary to the Green and Colorado River systems, which is currently one of the most critical interstate river systems for the Lower Colorado states. Increased water savings on this system allows more flows into an already critically low and stressed river system.

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

  This project will significantly reduce tensions among water users. Water rights along the canal have been a great source of tension and strain. Having accuracy and accountability in the delivery of water will remove doubt and questions as to how much each entity diverted from the system. Using SCADA to monitor where water is being used will allow the Farm Creek Irrigation Company to determine which users are using their appropriate shares of water. Water users will not be able to dispute the amount of water they used if it is accurately measured.

***Ecological Benefits**. In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that that result in ecological benefits, through this section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will provide ecosystem benefits, including the following:*

- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).*

  The Farm Creek Canal receives water from the Duchesne River. The Duchesne River is a tributary of the Green River with four endangered fish species (bonytail, Colorado pikeminnow, humpback chub, and razorback sucker) and 3 threatened species (bluehead sucker, flannelmouth sucker, and roundtail chub). Efficiency in the irrigation system along the Duchesne River will directly benefit these species, which have been adversely affected by a Reclamation project such as the Flaming Gorge Dam. More water will stay within the river system because of the efficiency of the piped canal and eliminating the need to over divert and then return water downstream.

- *Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels, recreational benefits, etc.).*

  Water savings gained from piping the Farm Creek Canal will both improve agricultural water reliability and also remain in the Duchesne River. Overall water levels in the Duchesne River will increase due to this project and improve water temperatures for trout fishery and other riparian resources. During periods of plenty and excess flows, there will be benefits for agriculture seen along the irrigation system as well.

- *Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?*

  The project will reduce the likelihood of a species listing and will improve the species status. The Farm Creek Canal receives water from the Duchesne River. As noted above, the Duchesne River is a tributary of the Green River with four endangered fish species (bonytail, Colorado pikeminnow, humpback chub, and razorback sucker) and 3 threatened species (bluehead sucker, flannelmouth sucker, and roundtail chub). These species will benefit from more water remaining in the river. While minor, seepage in the Farm Creek Canal reduces water and adds salinity in the Duchesne River, therefore the Green River.

- *Please describe any other ecosystem benefits as a direct result of the project.*

  The natural resource concerns addressed by this project includes Fish and Wildlife – Threatened and Endangered Fish and Wildlife Species and will decrease the chances for the resource concern of inadequate water becoming an issue for these and many other species using the Duchesne River. There is also a benefit of reduced salinity pollution, although smaller than other areas in the Uintah Basin. Seepage in the canal and also the flood

irrigation practices contribute to poor water quality downstream in the Duchesne River system. Elimination of this seepage and improvements for on-farm conversion from flood to sprinkler will facilitate less water being diverted and a more efficient use of water rights.

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

- *Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?*

  The project would help address climate change and increase resiliency in the project area. As discussed previously, the reduction in greenhouse gases will help combat climate change that is occurring. Additionally, more water will remain within the river systems instead of being lost due to seepage or diverted to maintain adequate flows for the canal and lower system and then later returned to the river. The project will also bolster drought resiliency within the project area due to the fact that less water will be utilized, allowing users to adapt to less water being available in the event of a persistent drought.

- *Does the project seek to improve ecological resiliency to climate change?*

  The project improves ecological resiliency by more efficiently utilizing water that is diverted from the Duchesne River, allowing agricultural products to be grown. With climate change necessitating better stewardship of water resources, this project is a high priority for the Farm Creek Irrigation Company in order to continue their wise use of the water they are responsible for and the agricultural producers whom they serve.

- *Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution? 42 Section E. Application Review Information*

  This proposed project will reduce climate pollutions by reducing greenhouse gas emissions. Because of the reduction of maintenance that will occur with piping the canal, less trips will be made to the canal for repairs or maintenance. This will in turn eliminate greenhouse gas emissions from those trips.

- *Does the proposed project include green or sustainable infrastructure to improve community climate resilience?*

  The proposed project includes green infrastructure through the solar panels that will be used for telemetry and SCADA. This allows for the use of power that is renewable to improve resiliency within the operations of the water users.

- *Does the proposed project contribute to climate change resiliency in other ways not described above?*

  The impacts of climate change in the Uintah Basin are primarily evident in water supply and drought. This directly correlates with the amount of water available for agriculture, which is also a crisis waiting to happen. Conservation of the precious water resource that the Farm Creek Irrigation Company has is a top priority, and making operational changes and improvements, and infrastructure upgrades is an essential part of their mission. Installation of the pipeline will help better manage and operate their system and reduce or eliminate spills

and fluctuations is of great importance. Better water stewardship and reliable deliveries will allow crop yields to increase and may offset the drought with diligent metering, measurements, and awareness.

1.4.4. EVALUATION CRITERION D – DISADVANTAGED COMMUNITIES, INSULAR AREAS, AND TRIBAL BENEFITS

1.4.4.1. SUBCRITERION D.1. DISADVANTAGED COMMUNITIES

E.O. 14008 affirms the advancement of environmental justice for all through the development and funding of programs to invest in disadvantaged communities. This criterion, which is used to identify projects that advance the Justice 40 Initiative, includes all Federally recognized Tribes and Tribal entities, and any disadvantaged communities in insular areas (American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands) identified pursuant to the following criteria.

- *Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), available online at Explore the map - Climate & Economic Justice Screening Tool (screeningtool.geoplatform.gov/ en/#17.59/36.63278/-105.181329) to identify any disadvantaged communities that will benefit from your project. The CEJST developed by the White House Council on Environmental Quality is a geospatial mapping tool that utilizes publicly available, nationally consistent data sets related to climate change, the environment, health, and economic opportunity to identify disadvantaged communities. In addition to identifying specific census tracts that are disadvantaged, the CEJST includes the lands of Federally 43 Notice of Funding Opportunity No. R24AS00052 recognized Tribes as disadvantaged communities. In addition, regardless of whether a Federally recognized Tribe has land, all Federally recognized Tribal entities are considered disadvantaged communities for the purposes of the Justice40 Initiative.*

  The land that will benefit from this project is located within the following tract, determined from the CEJST:

  49013940300

  This tract is located within Duchesne County, Utah and is identified as disadvantaged. Additionally, the CEJST states "The lands of Federally Recognized Tribes that cover 84% of this tract are also considered disadvantaged."

- *If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?*

  Communities within this tract rely on canals like the Farm Creek Canal. Farmers and ranchers use these canals to support themselves and the communities. Piping the Farm Creek Canal will increase the reliability of water that is delivered for agricultural purposes. At this point, many of the landowners, farmers, and ranchers have felt a downturn in the economy

due to economic challenges; however, if water is more reliably delivered due to this project, this could increase production, providing benefits to the disadvantaged community.

1.4.4.2. SUNCRITERION D.2. TRIBAL BENEFITS

The Department is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum, Tribal Consultation and Strengthening Nation-to-Nation Relationships, asserts the importance of honoring the Federal Government's commitments to Tribal nations. Address the following, if applicable:

- *Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?*

The Farm Creek Canal serves 176 acres of Tribal ground. Over 22% of the proposed project, 3,512 feet, runs through Ute Tibe land. The Farm Creek Canal is used for irrigation, and for stock water on Tribal Land. The project will allow for continued Tribal use, and prevent drought and water shortages through water savings. As stated above, this project includes green infrastructure through the solar panels that will be used for telemetry and SCADA. This allows for the use of power that is renewable to improve resiliency within the operations of Ute Tribe water users.

- *Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?*

This project will allow Tribal water users to continue use through irrigation and stock water. When piped, the efficiency of the canal will be greatly improved. Reducing the effects of drought on Tribal land, and allowing for irrigation seasons to extend later into the year.

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

As noted above, the Farm Creek Canal serves 176 Acres of Tribal land. Use of green infrastructure through solar panels, and decreased seepage losses will directly support tribal resilience to climate change and prevent droughts. The project will allow for more economic growth opportunities from the conserved water and extended irrigation seasons.

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

No

1.4.5. EVALUATION CRITERION E – COMPLEMENTING ON-FARM IRRIGATION IMPROVEMENTS (8 POINTS)

If the proposed project will complement an on-farm improvement eligible for NRCS assistance, please address the following:

- *Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies.*
    - *Provide a detailed description of the on-farm efficiency improvements.*
    - *Have the farmers requested technical or financial assistance from NRCS for the onfarm efficiency projects, or do they plan to in the future?*
    - *If available, provide documentation that the on-farm projects are eligible for NRCS assistance, that such assistance has or will be requested, and the number or percentage of farms that plan to participate in available NRCS programs.*
    - *Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*

Many farmers along the canal are interested in on-farm projects to convert from flood irrigation to sprinklers. A pressurized pipeline would reduce pumping needs that currently exists along the canal. The pipeline will be more efficient than the old canal, allowing for more reliable delivery. Having meters at key points and turnouts will also allow farms to know the flow they are getting and plan crops around that.

- *Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.*
    - *Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how? For example, installing a pressurized pipe through WaterSMART can help support efficient on-farm irrigation practices, such as drip-irrigation.*

    - *Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?*

    Piping the canal will maximize the efficiency of the canal, greatly increasing on-farm project possibilities. Many water users have expressed interest in upgrading their irrigation system from flood irrigation to sprinklers. The water delivery will be more reliable, and the meters will allow users to know the flow being delivered and plan crops around that. This will lead to increases crop quality and yield.

- *Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.*
    - *Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.*

No specific on-farm estimates have been done at the time of this application, but there are expected benefits stemming from the increased efficiencies from piping the canal. On farm improvements will be primarily from conversion from flood irrigation to sprinklers. This also provides benefits to water quality due to reduction in salinity on the return flows to the river.

- *Please provide a map of your water service area boundaries. If your project is selected for funding under this NOFO, this information will help NRCS identify the irrigated lands that may be approved for NRCS funding and technical assistance to complement funded WaterSMART projects.*

  See Appendix A.

1.4.6. EVALUATION CRITERION F – READINESS TO PROCEED (8 POINTS)

- *Identify and provide a summary description of the major tasks necessary to complete the project.* ***Note: Do not repeat the more detailed technical project description provided in Section D.2.2.2 Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.***

  Major tasks to complete this project have commenced in the planning and funding stages such as concept design and sizing of the pipeline. Next steps include surveys onsite, environmental clearances, final design, construction of project, installation of measurement and telemetry devices, commissioning the pipeline, and monitoring performance of the new project components. See attached schedule for major milestones in Appendix A.

- *Describe any permits that will be required, along with the process for obtaining such permits.*

The proposed project has several elements pertaining to environmental clearances, site design and analysis that are ready to proceed immediately once weather permits. The permits assumed to be required include cultural clearance through SHPO, biological assessment and surveys for potential Ute Ladies Tresses habitat, as well as surveys for actual plants in August-September. Additional wetlands and waters of the US determination will be necessary as well.

- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*

Preliminary design has been completed for this project. Pipe sizing and quantities have estimated, and details have been drawn. Through meetings with the Farm Creek Canal Company and water users, an alignment of the pipe has been determined as well.

- *Describe any new policies or administrative actions required to implement the project.*

No new policies or actions will be needed.

- *Describe the current design status of the project. If additional design work is required prior to construction, describe the planned process and timeline for completing the design work.*

The design of the project is in the conceptual phases, so additional design would be needed prior to construction. The project plan is to obtain funding from WaterSMART as well as UDAF Water Optimization over the next year. This will allow the design process to continue. Reference the attached schedule in Appendix A for the planned design duration.

- *Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation regional or area office?*

See the schedule in Appendix A.

1.4.7. EVALUATION CRITERION G – COLLABORATION (5 POINTS)

Please describe how the project promotes and encourages collaboration. Consider the following:

- *Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?*

  Yes, there is widespread support for the Farm Creek Canal Rehabilitation project. The Bureau of Indian Affairs (BIA) and Uintah Indian Irrigation Project (UIIP) support the project as nearly 20 percent of the Canal flows through and supports Tribal Land. Duchesne County Water Conservancy District (DCWCD) has also shown support for the project. A letter of support from DCWCD has been attached to this application.

- *What is the significance of the collaboration/support?*

  The collaboration is key to the success of the project, with a broad group supporting and the Duchesne County Water Conservancy District supporting these individual companies and associations, it will solidify the process and help in obtaining funding together so that the projects can be affordable and successful. This support allows for projects like the Farm Creek Canal Rehabilitation to happen. Without support these projects will stall, and the state of these canals will continue to deteriorate.

- *Will this project increase the possibility/likelihood of future water conservation improvements by other water users?*

This project will motivate users to upgrade to more efficient irrigation systems. It will also serve as an example for future groups and projects. It will benefit and encourage on-farm improvements and associated benefits will increase the likelihood of other water-saving projects stemming from this project.

- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

  This project will benefit multiple sectors including agriculture, environmental, and recreational. Agriculture will benefit from the elimination of seepage loss, and the reliability of irrigation water. Environmental sector will also benefit from the project because of the elimination or reduction in the loss of water that is currently experienced. The water that is diverted for an excess for operations will remain within the river systems, benefiting threatened and endangered species of fish. Additionally, other fish species will also benefit. This will provide more recreational opportunities for anglers in this popular stretch of the Duchesne River.

- *Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).*

  See Appendix B

1.4.8. EVALUATION CRITERION H – NEXUS TO RECLAMATION (4 POINTS)

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider:

- *Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?*

- *If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?*
- *Will the proposed work benefit a Reclamation project area or activity?*

The Duchesne River, which the Farm Creek Canal draws from, contributes to the Uintah Basin where Reclamation has been actively engaged. The Duchesne feeds the Starvation Reservoir, which is a Bureau of Reclamation facility operated by Central Utah Water Conservancy District.

Knights Diversion is a related Bureau of Reclamation Project that will benefit from this project. Knights Diversion takes water from the Duchesne River and diverts it to Starvation Reservoir. The Farm Creek Canal is upstream from Knights Diversion. This project will result in efficiencies in the Duchesne River, leading to more water downstream at the Knights Diversion.

- *Is the applicant a Tribe?*

No, but the Farm Creek Canal does provide water for 176 acres of Ute Tribal land.

1.5. PERFORMANCE MEASURES

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.

The performance measure for the Farm Creek Canal will be the measurement of water lost compared to previous years. With the implementation of HDPE pipe, seepage and evaporative losses in the canal should be non-existent. Water measurements will be taken at the inlet from the Duchesne River and measured at every connection to determine the system's efficiency.

A non-technical performance measure that is important to The Farm Creek Irrigation Company is to have this project successfully built and funded. Success will be measured by the working relationship and successful completion of the project with all water users, including the Ute Tribe.

1.6. BUDGET NARRATIVE

In the budget detail and narrative section, applicants should describe and justify requested budget items and costs. Applicants should provide details to support the SF-424A, "Object Class" categories or the SF-424C, "Cost Classification" categories. The budget narrative must clearly identify all items of cost (total estimated project cost), including those contributed as non-Federal cost share by the applicant (required and voluntary), third-party in-kind contributions, and those covered using the funding requested from Reclamation, and any requested pre-award costs.

The total project cost is the sum of all allowable items of costs, including all required cost sharing and voluntary committed cost sharing, including third-party contributions necessary to complete the project. Applicants must include detailed descriptions of all cost justifications (see Reclamation's suggested format in Attachment B for more detail). Costs, including the valuation of third-party in-kind contributions, must comply with the applicable cost principles contained in 2 CFR, §200.

See Appendix A for Budget and the Budget Narrative Form attached.

1.7. ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should consider the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:

- *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.*

There will be effects on the surrounding environment because of the project. These effects include excavation for the placing of the pipeline. In order to minimize these impacts, the existing alignment of the canal will be utilized, with minimal disturbance outside of the existing canal. The completed project would improve the quantity and quality of water staying within the Duchesne River, improving habitat for animals and fish species as well. No other impacts are anticipated. Construction near the river system will include upgrades to the diversion structure and a screen structure at the inlet of the pipe, along with a return flow channel to the river. The associated permitting and NEPA will be followed with designs to minimize project footprint and disturbance area to avoid mitigation and expenses.

- *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?*

There are four federally listed fish species (Colorado pikeminnow, razorback sucker, bonytail, and humpback chub) and 3 threatened species (bluehead sucker, flannelmouth sucker, and roundtail chub) within the river system where these projects would be constructed. The Farm Creek Canal will not directly affect these species and the additional water in the river system will have a positive impact on fish habitat. No other impacts are anticipated with the construction of this project.

- *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed project may have.*

An aquatic resource delineation would need to occur, but due to the seepage from the canal there is a potential for wetlands that fall under CWA jurisdiction to be near the project area. If this is the case, any impacts to wetlands would be permitted with the Army Corps of Engineers and the Utah Division of Water Rights. The delineation would occur prior to design completion, so impacts would be minimized and kept under 0.1 acres.

- *When was the water delivery system constructed?*

The Farm Creek Irrigation Company constructed the Farm Creek Canal in 1905.

- *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.*

  All features of the Farm Creek Canal in the proposed project area were constructed in 1905. Since the time of construction maintenance has been done to keep the canal in service. The original headgate, flume, and settling pond will be removed to allow for a new headgate structure, metering devices, and HDPE Pipe. In areas where flooding is an issue, the original canal will not be backfilled to allow for runoff.

- *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.*

  No, there are no known eligible structures that could be listed within the irrigation district.

- *Are there any known archeological sites in the proposed project area?*

No, there are no known archeological sites in the proposed project area. A cultural resources survey would need to be completed prior to construction to determine any archeological sites. This can take place early summer of 2024.

- *Will the proposed project have a disproportionate and adverse effect on any communities with environmental justice concerns?*

No, the project will not have a disproportionate or adverse effect on any communities with environmental justice concerns.

- *Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on Tribal lands?*

No, the proposed project will not limit access to ceremonial use of Indian sacred sites or result an any negative impacts to Tribal lands; however, increase in efficiency in Tribal water systems will be a result of this project and the potential for pressurized irrigation for sprinklers if that is desired.

- *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?*

No, the proposed 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. Specific requirements for the contractor selected for the work will be required by specification and contract to clean equipment and establish seed and cleaning protocol.

1.8. REQUIRED PERMITS OR APPROVALS

You should state in the application whether any permits or approvals are necessary and explain the plan for obtaining such permits or approvals.

A cultural resource survey is anticipated. Also, Tribal lands require contractors to get access permits and UTERO for work on Ute Tribe Lands. This is not anticipated to be a hurdle for access during construction. Other permits anticipated for the canal lining and piping include Ute Ladies Tresses (ULT) endangered flower survey, which could lead to a Biological Opinion from the US Fish & Wildlife Service for the ULT, in response to the final design and impact areas to ULT habitat and individuals if present. It is not likely that ULT exist in this area as they do in other areas of the Basin. A stream alteration permit and potential Army Corp permit is also anticipated to some degree, with the critical path item being the ULT clearances.

1.9. OVERLAP OR DUPLICATION OF EFFORT STATEMENT

Applicants should provide a statement that addresses if there is any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. If any overlap exists, applicants must provide a description of the overlap in their application for review.

Applicants should also state if the proposal submitted for consideration under this program does or does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal. If such a circumstance exists, applicants must detail when the other duplicative proposal(s) were submitted, to whom (Agency name and Financial Assistance Program), and when funding decisions are expected to be announced. If at any time a proposal is awarded funds that would be duplicative of the funding requested from Reclamation, applicants must notify the NOFO point of contact or the Program Coordinator immediately.

An additional funding application was submitted to UDAF Water Optimization program for funding in the amount of $1,000,000. This application was submitted January 31, 2024, and it is expected that the results of the funding will be announced in Summer 2024. That application is from a non-federal funding source and would not be duplicative of the funding requested from Reclamation.

1.10. CONFLICT OF INTEREST DISCLOSURE STATEMENT

Per 2 CFR §1402.112, "Financial Assistance Interior Regulation" applicants should state in the application if any actual or potential conflict of interest exists at the time of submission. Submission of a conflict-of-interest disclosure or certification statement is mandatory prior to issue of an award.

At this time there are no known or potential conflicts of interest.

1.11. UNIFORM AUDIT REPORTING STATEMENT

All U.S. states, local governments, federally recognized Indian Tribal governments, and non-profit organizations expending $750,000 USD or more in Federal award funds in the applicant's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System. U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

1.12. CERTIFICATION REGARDING LOBBYING

Applicants requesting more than $100,000 in Federal funding must certify to the statements in 43 CFR §18, Appendix A. If this application requests more than $100,000 in Federal funds, the authorized official's signature on the appropriate SF-424 form also represents the applicant's certification of the statements in 43 CFR § 18, Appendix A.

1.13. SF-LLL: DISCLOSURE OF LOBBYING ACTIVITIES (IF APPLICABLE)

If applicable, a fully completed and signed SF-LLL: Disclosure of Lobbying Activities form is required if the applicant has made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. This form cannot be submitted by a contractor or other entity on behalf of an applicant.

1.14. LETTERS OF SUPPORT

You should include any letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support as an appendix. Letters of support received after the application deadline for this NOFO will not be considered in evaluating your proposed project. These letters do not count within the 125 page maximum.

See Appendix B

1.15. LETTER OF PARTNERSHIPS (CATEGORY B APPLICANTS)

Category B applicants should submit a Letter of Partnership from the Category A partner, stating that they are acting in partnership with the applicant and agree to the submittal and content of the application (see Section C.1 Eligible Applicants). However, if the project is selected, a Letter of Partnership must be received prior to award.

N/A, Category A

1.16. OFFICIAL RESOLUTION

If selected, the applicant must provide prior to award an official resolution adopted by your organization's board of directors or governing body, or, for state government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under this NOFO, verifying:
• The identity of the official with legal authority to enter into an agreement
• The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted
• That your organization will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement
An official resolution meeting the requirements set forth above is mandatory before an award of funding will be made.

If selected, an official resolution can be adopted by the Farm Creek Irrigation Company board of directors and provided.

1.17. LETTERS OF FUNDING COMMITMENT

If a project is selected for award under this funding opportunity and cost share funding is anticipated to be provided by a source other than the applicant, the third-party cost share must be supported with letters of commitment prior to award. Letters of commitment should identify the following elements:
• The amount of funding commitment
• The date the funds will be available to the applicant
• Any time constraints on the availability of funds
• Any other contingencies associated with the funding commitment
Cost-share funding from sources outside the applicant's organization (e.g., loans or State grants) should be secured and available to the applicant prior to award. Reclamation will not execute a financial assistance agreement until non-Federal funding has been secured or Reclamation determines that there is enough evidence and likelihood that non-Federal funds will be available to the applicant after executing the agreement.

See applicable letters in Appendix B.

APPENDIX A. PROJECT BUDGET AND SCHEDULE

Farm Creek Canal Rehabilitation
February 22, 2024

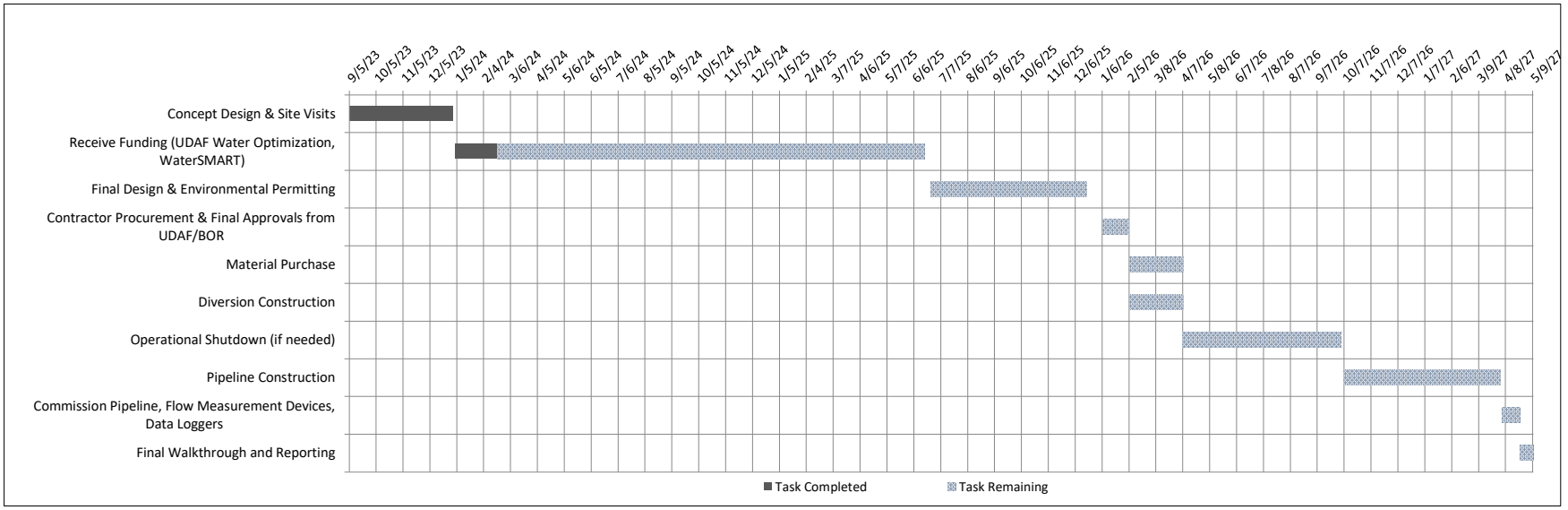
Jones & DeMille Engineering
www.jonesanddemille.com

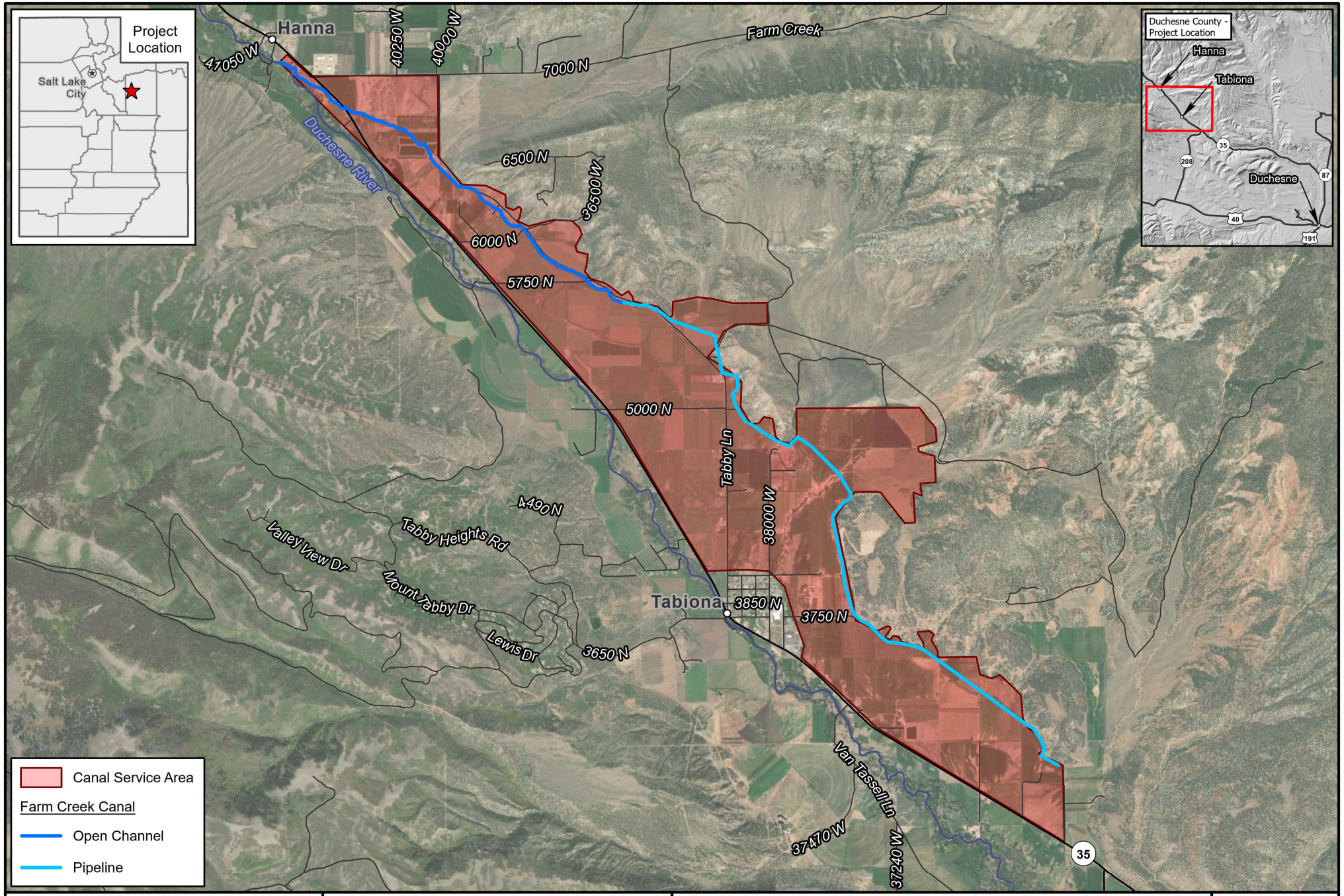
CONCEPT OPINION OF PROBABLE COST					
	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
MATERIALS					
	42-inch HDPE DR 32.5 (63 psi)	15,800	FT	$ 116.00	$ 1,832,800.00
	Turnouts w/Flow Meters	26	EA	$ 5,000.00	$ 130,000.00
	Pipe Appurtenances (Air Valves, Fittings, Drain Valves, Etc)	1	Lump	$ 100,000.00	$ 100,000.00
	Mainline Meter	1	Lump	$ 45,000.00	$ 45,000.00
	Pipe Inlet Screen	1	EA	$ 20,000.00	$ 20,000.00
	Outflow Weir w/Flow Measurement	1	EA	$ 14,000.00	$ 14,000.00
	Items Not Estimated	1	EA	$ 238,000.00	$ 238,000.00
				SUBTOTAL MATERIALS	**$ 2,379,800.00**
INSTALLATION - CONSTRUCTION CONTRACT					
	Mobilization	5%	Lump	$ 211,600.00	$ 211,600.00
	Install 42-inch HDPE DR 32.5 (64 psi)	15,800	FT	$ 55.00	$ 869,000.00
	Connect to Existing Pipeline	1	Lump	$ 8,000.00	$ 8,000.00
	Sediment Basin Outlet Structure	1	Lump	$ 40,000.00	$ 40,000.00
	Diversion Structure for Directing Flows into Sediment Basin	1	Lump	$ 25,000.00	$ 25,000.00
	Sediment Basin Excavation	4,000	CY	$ 12.00	$ 48,000.00
	Install New Sluice to River	1	Lump	$ 30,000.00	$ 30,000.00
	Install Pipe Appurtenances	1	Lump	$ 100,000.00	$ 100,000.00
	Install Mainline meter	1	EA	$ 23,000.00	$ 23,000.00
CROSSINGS					
	SR-35 Crossing (Assuming existing sleeve will be utilized)	1	Lump	$ 6,000.00	$ 6,000.00
	Farm Creek Siphon (Assuming Existing Siphon can not be utilized)	1	Lump	$ 20,000.00	$ 20,000.00
	Contingency and Items not Estimated (Restoration, Utility Impacts, Staking, etc…)	11%	Lump	$ 471,000.00	$ 471,000.00
				SUBTOTAL INSTALLATION - CONSTRUCTION CONTRACT	**$ 1,851,600.00**
				TOTAL PROBABLE CONSTRUCTION COST (MATERIALS AND INSTALLATION)	**$ 4,231,400.00**
	ENGINEERING AND LEGAL PROFESSIONAL SERVICES (INDIRECT COSTS)				
	Design: Preconstruction Engineering, Survey, Contractor Procurement	1	Lump	$ 296,200.00	$ 296,200.00
	NEPA Compliance: Permitting (BA for ULT, EA, Habitat Replacement Plan)	1	Hourly	$ 91,400.00	$ 91,400.00
	Cultural Resource Survey	1	Lump	$ 12,700.00	$ 12,700.00
	& Other Required Permitting Contingency	1	Lump	$ 29,700.00	$ 29,700.00
	Construction Administration *(Construction Management & **Full Time** Observation)*	1	Hourly	$ 338,600.00	$ 338,600.00
				SUBTOTAL ENGINEERING AND LEGAL PROFESSIONAL SERVICES (INDIRECT COSTS)	**$ 768,600.00**
				TOTAL PROBABLE PROJECT COST FARM CREEK CANAL	**$ 5,000,000.00**

FCIC - Farm Creek Canal Rehabilitation
Client: Farm Creek Irrigation Company
Proj #: 1910-082
PM: Eric Major
Date: 2/21/2024

FCIC - Farm Creek Canal Rehabilitation

Phase Number	Milestone/Phase	Start Date	End Date	Percent Complete	Task Duration	Task Completed	Task Remaining	Notes
-	-	*date*	*date*	*%*	*days*	*days*	*days*	-
1	Concept Design & Site Visits	9/5/2023	1/3/2024	100%	118	118	0	
2	Receive Funding (UDAF Water Optimization, WaterSMART)	1/3/2024	6/26/2025	9%	533	48	485	
3	Final Design & Environmental Permitting	6/26/2025	12/23/2025	0%	177	0	177	
4	Contractor Procurement & Final Approvals from UDAF/BOR	1/7/2026	2/6/2026	0%	29	0	29	
5	Material Purchase	2/6/2026	4/7/2026	0%	61	0	61	
6	Diversion Construction	2/6/2026	4/7/2026	0%	61	0	61	
7	Operational Shutdown (if needed)	4/7/2026	10/7/2026	0%	180	0	180	
8	Pipeline Construction	10/7/2026	4/5/2027	0%	178	0	178	
9	Commission Pipeline, Flow Measurement Devices, Data Loggers	4/5/2027	4/25/2027	0%	20	0	20	
10	Final Walkthrough and Reporting	4/25/2027	5/10/2027	0%	15	0	15	





N

0 2,000 4,000 Feet

Jones & DeMille Engineering

Farm Creek Irrigation Company

WaterSMART Grant Application
Canal Rehabilitation
Project Location Overview

Map Name: H:\JD\Proj\1910-082\GIS\Projects\1910-082_Application\1910-082_Application.aprx - Exh Farm Creek - Canal Rehab - WaterSMART Application 8.5x11L

Project Number: 1910-082 | Drawn by: JEM 02-24 | Last Edit: 02/20/2024

Duchesne County, Utah

Scale: 1" = 4,000'

1

APPENDIX B. LETTERS OF SUPPORT AND FUNDING COMMITMENT

DUCHESNE COUNTY WATER CONSERVANCY DISTRICT
275 West 800 South – Roosevelt, UT 84066

Office Phone – 435-722-4977
General Manager: Clyde Watkins
Admin Assistant: Carrie Lynn Shiner

Clyde Watkins Cell – 801-360-0312
email: clydedcwcd@stratanet.com
email: carriedcwcd@stratanet.com

Board Members:
Rodger Ames – Board Chairman
Kelly Crozier – Treasurer
Don Richards – Member
Dex Winterton - Member

Kevin Rowlet – Vice Chairman
Keith Hooper – Member
Connie Sweat – Member

February 12, 2024

RE: DCWCD Support Letter for the Farm Creek Canal Rehabilitation Project

Grant Application Review Committee:

The Duchesne County Water Conservancy District (DCWCD) is submitting this letter to show support for the Farm Creek Irrigation Company's Canal Rehabilitation project being submitted for funding assistance. This project will pipe the first reach of the Farm Creek canal from the Duchesne River diversion to their existing regulation pond and connect to their lower section that has previously been piped.

The DCWCD had worked with Farm Creek Irrigation Company in the past to identify this project as an important improvement for water savings and irrigation efficiency. It was originally part of a second phase of our ongoing NRCS PL-566 Watershed Plan-Environmental Assessment project, which has taken many more years than previously thought and is still working on the first phase. Due to the timing of the funding and available resources, it is in the best interest of Farm Creek to move forward with seeking grant funds through the Utah Department of Ag & Food Water Optimization and the Bureau of Reclamation WaterSMART programs.

We support this project and the improvements it will make to their system. The stakeholders are committed to making these improvements and many on-farm applications will result from the successful funding of the construction for this canal piping project. This is also a critical project for the region as water savings will benefit the Duchesne River, Green River, and Colorado River.

We appreciate the opportunity to partner with each stakeholder and UDAF. We formally request your consideration and funding support for these applications for assistance from both the Water Optimization program and Reclamation's WaterSMART program. Please contact us with further questions and any other required information. We look forward to hearing about the results of the grant applications.

Sincerely,

Clyde Watkins
General Manager
Duchesne County Water Conservancy District

February 21, 2024

Clyde Watkins, General Manager
Duchesne County Water Conservancy District
275 West 800 South
Roosevelt, UT 84066

RE: Farm Creek Canal Rehabilitation – Letter of Commitment

Mr. Watkins:

The Farm Creek Irrigation Company is submitting this letter to show support and funding commitment for the proposed Farm Creek Canal Rehabilitation project being submitted for funding assistance through DCWCD. We had started the process to get a SAM.gov and UEI and have hit some difficulties with the required documentation as we are a smaller company with volunteer board members. While we work through this, we appreciate DCWCD being willing to submit our application so that we can be considered in this round of funding. We have already submitted to the UDAF Water Optimization program and welcome the opportunity to apply to the Bureau of Reclamation's WaterSMART Grant.

This project is the remaining section of our canal that has not been piped and would connect the river diversion to the lower pipeline and eliminate approximately 3 miles of open channel canal. The total cost estimate for the project is $5,000,000. The following commitment is proposed for our company with the associated grant funds:

- Cost share of up to **$500,000** (10% of the project)
- Funds to be available by time of construction and anticipated by Spring 2025 if grants are obtained and according to project schedules.
- There are no contingencies or constraints on the availability of funding or the commitment of these funds, although FCIC will be submitting for another phase of UDAF Water Optimization grants for a second and third segment of the project to assist in the cost share.
- We request further information and coordination as the project commences and the funding scenario is finalized.

We appreciate the opportunity to partner with the Duchesne County Water Conservancy District as well as the possible funding assistance from the WaterSMART and Water Optimization grants. Please contact us with further updates and any other required information. We look forward to hearing about the results of the grant applications and we appreciate the ability to route our application through the District.

Sincerely,

Hal Giles
Chairman
Farm Creek Irrigation Company

Hal Giles

Farm Creek Canal Rehabilitation

2/22/2024

Budget Narrative:

The success of the Farm Creek Canal Rehabilitation project hinges significantly on securing funding from the Bureau of Reclamation's WaterSMART program and funding from the UDAF Water Optimization program. As a crucial partner in water resource management and infrastructure development, the BOR plays a pivotal role in providing financial support for projects aimed at enhancing water delivery systems, improving irrigation efficiency, and ensuring sustainable agricultural practices in the Uintah Basin. This funding is essential for developing Farm Creek Irrigation Company's infrastructure to ensure a consistent water supply for agricultural needs. The project will provide consistent and accurate flow which will promote economic success and improve environmental stewardship. Without this funding, the project's ability to address water management challenges and meet the evolving needs of farmers and shareholders would not be able to be resolved.

Assuming WaterSMART funding is procured, it is estimated that $650,000 will be contributed from shareholders, $2,000,000 from WaterSMART, and $2,350,000 from three rounds of Water Optimization. From preliminary design it is estimated material costs will be $2,379,800, installation will be $1,851,600, and total professional services will be $768,600. For further detail See Appendix A.

Farm Creek Canal Rehabilitation
February 22, 2024

Jones & DeMille Engineering
Roosevelt: 435.722.8267
www.jonesanddemille.com

CONCEPT OPINION OF PROBABLE COST					
	ITEM DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL COST**
MATERIALS					
	42-inch HDPE DR 32.5 (63 psi)	15,800	FT	$ 116.00	$ 1,832,800.00
	Turnouts w/Flow Meters	26	EA	$ 5,000.00	$ 130,000.00
	Pipe Appurtenances (Air Valves, Fittings, Drain Valves, Etc)	1	Lump	$ 100,000.00	$ 100,000.00
	Mainline Meter	1	Lump	$ 45,000.00	$ 45,000.00
	Pipe Inlet Screen	1	EA	$ 20,000.00	$ 20,000.00
	Outflow Weir w/Flow Measurement	1	EA	$ 14,000.00	$ 14,000.00
	Items Not Estimated	1	EA	$ 238,000.00	$ 238,000.00
				SUBTOTAL MATERIALS	**$ 2,379,800.00**
INSTALLATION - CONSTRUCTION CONTRACT					
	Mobilization	5%	Lump	$ 211,600.00	$ 211,600.00
	Install 42-inch HDPE DR 32.5 (64 psi)	15,800	FT	$ 55.00	$ 869,000.00
	Connect to Existing Pipeline	1	Lump	$ 8,000.00	$ 8,000.00
	Sediment Basin Outlet Structure	1	Lump	$ 40,000.00	$ 40,000.00
	Diversion Structure for Directing Flows into Sediment Basin	1	Lump	$ 25,000.00	$ 25,000.00
	Sediment Basin Excavation	4,000	CY	$ 12.00	$ 48,000.00
	Install New Sluice to River	1	Lump	$ 30,000.00	$ 30,000.00
	Install Pipe Appurtenances	1	Lump	$ 100,000.00	$ 100,000.00
	Install Mainline meter	1	EA	$ 23,000.00	$ 23,000.00
CROSSINGS					
	SR-35 Crossing (Assuming existing sleeve will be utilized)	1	Lump	$ 6,000.00	$ 6,000.00
	Farm Creek Siphon (Assuming Existing Siphon can not be utilized)	1	Lump	$ 20,000.00	$ 20,000.00
	Contingency and Items not Estimated (Restoration, Utility Impacts, Staking, etc…)	11%	Lump	$ 471,000.00	$ 471,000.00
				SUBTOTAL INSTALLATION - CONSTRUCTION CONTRACT	**$ 1,851,600.00**
				TOTAL PROBABLE CONSTRUCTION COST (MATERIALS AND INSTALLATION)	**$ 4,231,400.00**
ENGINEERING AND LEGAL PROFESSIONAL SERVICES (INDIRECT COSTS)					
	Design: Preconstruction Engineering, Survey, Contractor Procurement	1	Lump	$ 296,200.00	$ 296,200.00
	NEPA Compliance: Permitting (BA for ULT, EA, Habitat Replacement Plan)	1	Hourly	$ 91,400.00	$ 91,400.00
	Cultural Resource Survey	1	Lump	$ 12,700.00	$ 12,700.00
	& Other Required Permitting Contingency	1	Lump	$ 29,700.00	$ 29,700.00
	Construction Administration *(Construction Management &* ***Full Time*** *Observation)*	1	Hourly	$ 338,600.00	$ 338,600.00
				SUBTOTAL ENGINEERING AND LEGAL PROFESSIONAL SERVICES (INDIRECT COSTS)	**$ 768,600.00**
				TOTAL PROBABLE PROJECT COST FARM CREEK CANAL	**$ 5,000,000.00**