

WaterSMART

WATER AND ENERGY EFFICIENCY GRANTS FOR FY 2024

NO. R24AS00052
FUNDING GROUP II

2024 CANAL REHABILITATION PROJECT **MOON LAKE WATER USERS ASSOCIATION**

DUCHESNE COUNTY, UTAH

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1. TECHNICAL PROPOSAL

1.1. EXECUTIVE SUMMARY

Start Date: November 4, 2024

Applicant: Moon Lake Water Users Association

Partners: Dry Gulch Irrigation Company, Farnsworth Canal Company

Location: Altamont, Duchesne County, Utah

Project Title: 2024 Canal Rehabilitation

Applicant Category: A

Project Summary:

The 2024 Canal Rehabilitation project is a partnering effort between Moon Lake Water Users Association (MLWUA), Dry Gulch Irrigation Company (DGIC), and Farnsworth Canal Company (FCC). MLWUA is the acting sponsor for the project, in association with DGIC and FCC. The 2024 Canal Rehabilitation project will convert 6 separate earthen canals and lateral ditches to HDPE pipe or concrete liner. The planned project includes enclosing Class A Lateral 3, Mt. Emmons Cement Ditch, Mt. Emmons Upper Town Canal, and Mt. Emmons Lower Town Canal using 16-inch and 18-inch HDPE pipe, a total length of 15,685 feet. Additionally, a high seepage section of the Cedarview Canal that measures 1,675 feet in length as well as a high seepage section of the Farnsworth Canal that measures approximately 8,050 feet in length will be lined with concrete and an impermeable liner system. These improvements would eliminate loss due to seepage, which is a total of 4,103 acre-feet of water per year. That saved water would be able to be utilized by the end user, which in turn would turn into longer irrigation seasons and more production of crops. Additionally, with the increased irrigation season, the amount of water that is diverted during the high flows will be reduced, allowing more water to remain within the streams and rivers at that time, benefiting the environment and those downstream.

Length of Time: 18 months

Completion Date: May 29, 2026

Federal Facility: No

1.2. PROJECT LOCATION

The 2024 Canal Rehabilitation project is located in Duchesne County, Utah. Because this project includes enclosing and lining multiple canals, there are multiple locations where the project would occur.

- Class A Lateral 3 – Approximately 2.5 miles northwest of Altamont, UT
 - Latitude and Longitude – 40.384374° and -110.322756°
- Mt. Emmons Cement Ditch – Approximately 1.6 miles southeast of Altamont, UT
 - Latitude and Longitude – 40.344859° and -110.265866°
- Mt. Emmons Upper Town Canal – Approximately 0.85 miles southeast of Altamont, UT
 - Latitude and Longitude – 40.352115° and -110.275129°
- Mt. Emmons Lower Town Canal – Approximately 0.95 miles southeast of Altamont, UT

- Latitude and Longitude – 40.349909° and -110.275074°
- Cedarview Canal – Approximately 6.1 miles northwest of Neola, UT
 - Latitude and Longitude – 40.520735° and -110.044787°
- Farnsworth Canal – Approximately 1.1 mile west of Talmage, Utah
 - Latitude and Longitude – 40.346354° and -110.453500°

1.3. PROJECT DESCRIPTION

The 2024 Canal Rehabilitation project includes five separate canals and lateral ditches being improved within the MLWUA, DGIC, and FCC systems. The canals that were chosen were identified for improvements to provide economic benefits to the area by providing water conservation, reducing seepage losses from open channel ditches. The canals that are included in this project are the Class A Lateral 3, Mt. Emmons Cement Ditch, Mt. Emmons Upper Town Canal, Mt. Emmons Lower Town Canal, Cedarview Canal, and Farnsworth Canal.

The Class A Lateral 3, Mt. Emmons Cement Ditch, Mt. Emmons Upper Town Canal, and Mt. Emmons Lower Town Canal are all high seepage open channel ditches. The planned project includes enclosing all four of the above listed canals using 16-inch and 18-inch HDPE pipe, a total length of 15,685 feet. The existing alignments of the canals would be utilized, burying the pipeline within the existing canals. If flood waters are anticipated to cause issues, the pipelines could be buried under the flowline of the canal, utilizing the existing canal for floodwater conveyance. This will be addressed during final design and coordination with canal company and landowners.

The Cedarview Canal is also a high seepage, open channel canal that has been identified to be part of this project. Phase 1 of the project, which included a new irrigation diversion structure was previously funded in Fiscal Year 2023 by WaterSMART. Phase 2 of this project, which is included under the 2024 Canal Rehabilitation project includes concrete lining 1,675 feet of the Cedarview Canal just downstream of the new diversion structure.

The Farnsworth Canal is an open channel canal that has sections of high seepage as well. Two sections have been identified at this time as the most critical to improve. The sections that are proposed to be concrete lined as part of the 2024 Canal Rehabilitation project are 4,350 feet and 3,700 feet long, for a total of 8,050 feet.

For both of the lining projects, the existing canal alignment would be utilized with minor adjustments to the canal alignment being performed within the existing right-of-way to minimize the bends within the liner. The proposed canal lining would include shaping the existing earthen channel to provide a consistent cross section, installing and compacting sufficient base material for stabilization, installing a composite geomembrane liner, installing shotcrete or concrete at 3-inch thickness, and making any grading improvements necessary for freeboard and the access roadway. The lining would then transition into the existing canal banks to minimize erosion and seepage.

In the water loss study that was performed, it was determined that the six canals listed above lose 4,103 acre-feet of water per year due to seepage. In enclosing and lining the listed canals, loss due to seepage would be eliminated, allowing the water to be utilized by the end user, increasing the irrigation season and in turn the production of crops. Additionally, with the increased irrigation season, the amount of water that is diverted during the high flows will be reduced,

allowing more water to stay within the rivers and streams at that time, benefiting the environment and those downstream.

The proposed project will include the following elements:

- Preliminary design and hydraulic analysis of pipelines and canal lining, flow measurement devices, and telemetry.
- Analysis and selection of most cost-effective and available materials and supplies.
- Environmental surveys for Ute-Ladies Tresses, Wetland Delineation, cultural surveys, and other necessary NEPA work.
- Design of pipelines and lining, flow control, flow measurement, and telemetry.
- Contractor selection and contracting.
- Access road restoration and improvements.
- Construction of projects: dewatering, pipeline construction, concrete lining construction, flow measurement meters, telemetry, power installation (likely solar), erosion control, stabilization, site restoration, commissioning of project elements.
- Monitoring of improvements and assessment of project goals and water conservation measures.

The list of objectives for the project include:

- Install pipelines on four canals, eliminating seepage loss.
- Install concrete & impermeable liner on two canals, eliminating seepage loss.
- Increase efficiency in water deliveries to irrigators and storage.
- Increase accuracy and timeliness of water deliveries through telemetry and meters.
- Reduce required maintenance and operation costs for the irrigation companies.
- Reduce conflict from shareholders, ditch companies, Tribal users through accurate measurement and increased accountability.

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 2024 Canal Rehabilitation project is 4,103 acre-feet per year. This water loss is seen due to seepage within the earthen canals and ditches as well as areas of the canal that experience additional leaks, which result in losses larger than just seepage.

- 2) *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 canals due to seepage and existing deficiencies in the canal where leaks are located. The water lost due to seepage goes into the ground, and the water lost due to leaks exits the canals and eventually seeps into the ground. There are no known benefits to the current losses that are experienced. This is also a known area for high salinity which is detrimental to the Colorado River system and its tributaries.

3) *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 an estimated seepage rate based on soil data 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 www.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.

In certain canals where the canal had known leaks, the losses through the leaks were estimated by ditch riders and irrigation company personnel based off of a lost percentage and added to the seepage losses that were calculated. This resulted in the following losses for the canals:

1. Class A Lateral 3 – 373 acre-feet per year
2. Mt. Emmons Cement Ditch – 352 acre-feet per year

3. Mt. Emmons Upper Town Canal – 264 acre-feet per year
4. Mt. Emmons Lower Town Canal – 89 acre-feet per year
5. Cedarview Canal – 2,063 acre-feet per year
6. Farnsworth Canal – 962 acre-feet per year

These losses verify the ditch rider and irrigation company personnel's estimations of the loss they were experiencing within the canals.

- 4) *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 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 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 final numbers for losses in the canals that were determined is a total of 4,103 acre-feet per year.

Four of the canals that are part of this project will be fully enclosed, piped with HDPE. The seepage or leakage losses post-project are expected to be 0 acre-feet per year for these canals.

The other two canals will be concrete-lined geomembrane liner, and in the section that is lined, the seepage losses are expected to be 0 acre-feet per year as well.

The overall length of the project including all canals is 25,410 feet or 4.81 miles. Therefore, the loss per mile of canal is approximately 853 acre-feet. The breakdown of loss per mile per canal is shown below:

1. Class A Lateral 3 – 343 acre-feet per mile
2. Mt. Emmons Cement Ditch – 387 acre-feet per mile
3. Mt. Emmons Upper Town Canal – 357 acre-feet per mile
4. Mt. Emmons Lower Town Canal – 375 acre-feet per mile
5. Cedarview Canal – 6,503 acre-feet per mile
6. Farnsworth Canal – 631 acre-feet per mile

The actual canal seepage calculations will be verified using post-project measurements. On the Cedarview Canal, it is proposed that a flume, stilling basin, and stand pipe with sensing devices tied to telemetry and SCADA system will be installed downstream of the proposed improvement. This will allow the losses over the proposed improvement to be calculated using the Phase 1 metering at the diversion and proposed metering at the end of the concrete lined section.

The Farnsworth Canal has an existing flume near one of the proposed lining sections. Additional flumes, stilling basins, and stand pipes with sensing devices tied to telemetry and SCADA system will be installed in strategic locations to be able to accurately determine and verify the post-project savings.

On the pipeline projects, there will be insertion meters that are used to measure the flows within the pipeline at strategic locations, including at the inlet, 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. Mag meters or propeller meters will be utilized for turnouts for the piping projects to track water usage to individual farms.

(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.

The renewable energy system included in this project includes solar panels for flow metering and data loggers. A typical panel that MLWUA, DGIC, or FCC would utilize should have an average capacity of 300 watts.

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 generated in this project will be minor, with enough energy to operate sensors and SCADA system. This information will provide MLWUA, DGIC, or FCC 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.*

This projects telemetry and automation, with power supplied by renewable sources will reduce the required amount of travel and time spent adjusting flows. With flows being regulated and monitored remotely there will be less power and fuel consumption, reducing greenhouse gas emissions.

AND

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 MLWUA, DGIC, and FCC because automation, telemetry, and SCADA will reduce the number of trips required for maintenance and operation of the canals. Trips to the Cedarview canal average 36 miles per trip, and using an IRS mileage rate of \$0.655 per mile, the savings per trip not taken is \$23.58. Additionally, trips to the other five canals would be reduced as well. Further, it is estimated that there are substantial savings resulting from more efficient canals to reduce the amount of time machinery is required to be used to maintain the canals.

- *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 and operation of the canals will greatly reduce required vehicle usage and therefore reduce greenhouse gas emissions.

- *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?*

The Cedarview Canal and the Farnsworth Canal will be concrete and impermeable membrane lined and will be open channel flow, not reducing pumping. However, the other four canals will be pressurized flow within the pipelines. The pressure in the pipelines range from 0 psi at the pipe inlet up to nearly 40 psi in certain areas. There are wheel lines and pivots off of the canals that will be piped, so pumps are currently run in order to operate the sprinkler irrigation. These pressurized pipelines would allow for less pumping than what is currently occurring, requiring less energy usage. Current prices on pumping for electricity are around \$500 per 40-acre pivot per month, which is equivalent to about \$90 per acre per year that the end user could save with pumping being reduced or eliminated.

- *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 less 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 to the Cedarview canal average 36 miles per trip. Trips to the Farnsworth Canal average 7.4 miles per trip. Lateral 3 is a Class A canal and the other three canals are Class B canals, so different ditch riders would be driving to each of those. Class A roundtrip would be approximately 4.5 miles, and the Class B roundtrip would be approximately 10 miles. Using an IRS mileage rate of \$0.655 per mile and assuming 200 trips per water year, the savings per trip not taken for maintenance and repairs for each of the canals is listed below.

1. Cedarview Canal - \$4,716
 2. Class A Canal - \$590
 3. Class B Canals- \$1,310
 4. Farnsworth Canal – \$969
- *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).*

MLWUA, DGIC, and FCC already use gravity-fed systems with solar panel SCADA for flow control and measurement devices on other components of their system and have a network created that will integrate nicely into the proposed improvements. The small scale solar with SCADA and telemetry will result in energy savings over the long run, as well as a large upfront cost for power to be brought to the remote sites.

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:

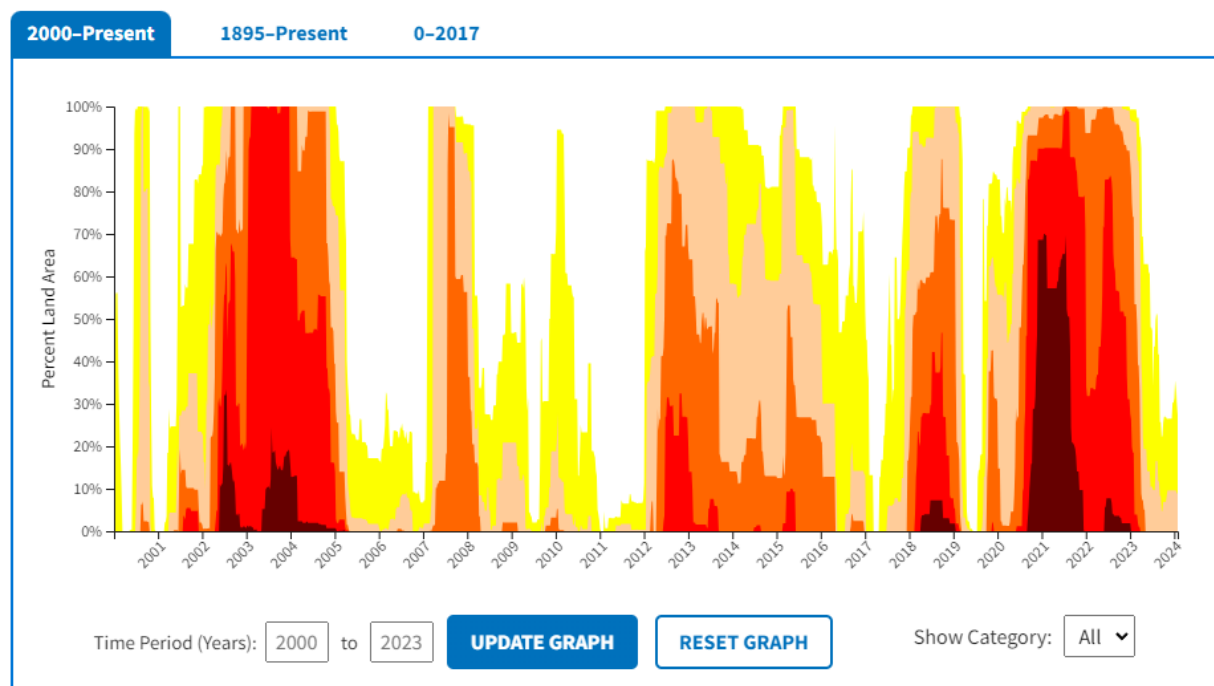
- *Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:*
 - *Describe recent, existing, or potential drought or water scarcity conditions in the project area.*
 - *Is the project in an area that is experiencing, 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 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.



The U.S. Drought Monitor (2000–present) depicts the location and intensity of drought across the country. Every Thursday, authors from NOAA, USDA, and the National Drought Mitigation Center produce a new map based on their assessments of the best available data and input from local observers. The map uses five categories: Abnormally Dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought (D1–D4). [Learn more.](#)

Legend

U.S. Drought Monitor

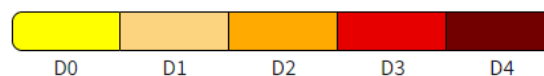


Figure 1 Historical Drought Conditions - Utah

- *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.*

The Uintah Basin is a valuable source of fossil fuels and has impacts due to fossil fuel extraction, which has a 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?*

The Cedarview Canal diverts water from the Uinta River. The other five canals receive water from the Lake Fork River. Reference the location maps that are attached to this application. Efficiencies in the delivery of irrigation water to water users holding water rights on the Uinta River system and the Lake Fork River system benefit the entire systems and increase flow in both river systems. Currently, as much water as allowed with water rights must be diverted into these canals because of the losses experienced in order to deliver water to users. With greater efficiency in delivery and measurement of water in the irrigation systems, less water will be required to be redirected at the diversions because of the more efficient delivery system, thus allowing more flow to stay within the river systems. The Moon Lake Reservoir will be used to supplement flows later in the season and storage water will last longer due to the efficiencies of the pipelines.

- *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 4,103 acre-feet per year. This water that is saved will be utilized by the end user to account for shortages in deliveries because of the seepage loss that has occurred. The irrigation season will be able to be lengthened because of the saved water, accounting for increased agricultural production. Additionally, because of the lengthened irrigation season, the river systems will see an increase of flow downstream during the periods of high flow since the users will not be diverting as much water during that time to make up for losses that are experienced. This will benefit the environment and those downstream from the project area, reducing the shortages seen downstream. The mechanism that will be used to conserve this water will be the pipeline and the lining of the canals, reducing the amount diverted for users because of the savings that will be experienced.

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

This project increases efficiency and improves water stewardship in the Uinta River and the Lake Fork River, which are both tributaries of 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 has great potential for reducing conflict and building trust. Tribal water rights along the rivers in the basin 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.

Ecological Benefits. *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects 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 Cedarview Canal receives water from the Uintah River and the other five canals receive water from the Lake Fork River. Both rivers are tributaries 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 systems along these rivers 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 and lined canals.

- *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.).*

The water that is saved will be utilized by the end user to account for shortages in deliveries because of the seepage loss that has occurred. The irrigation season will be able to be lengthened because of the saved water, accounting for increased agricultural production. Additionally, because of the lengthened irrigation season, the river systems will see an increase of flow downstream during the periods of high flow since the users will not be diverting as much water during that time to make up for losses that are experienced. Additionally, the water temperatures will be maintain or improve for trout fishery and other riparian resources. During periods of plenty and excess flows, there will be benefits seen along the canals and ditches.

- *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 Cedarview Canal receives water from the Uintah River and the other five canals receive water from the Lake Fork River. Both rivers are tributaries 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 systems along these rivers will directly benefit these species.

- *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 Uinta and Lake Fork Rivers.

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. 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 Uinta River and the Lake Fork River, allowing agricultural products to be grown in the otherwise desert region. With climate change necessitating better stewardship of water resources, this project is a high priority for MLWUA, DGIC, and FCC 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 operation and maintenance efforts that will occur with piping or lining canals, less trips will be made to the canals for repairs or maintenance. This will in turn eliminate greenhouse gas emissions from those trips. The proposed projects all have a 50-year plus life and heavy equipment requirements over that time period for maintenance will be substantial.

- *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 MLWUA, DGIC, and FCC have is a top priority, and making operational changes and improvements, and infrastructure upgrades is an essential part of their mission. Installation of the pipelines

and canal lining 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](https://www.ejscreeningtool.gov/en/#17.59/36.63278/-105.181329) ([screeningtool.geoplatform.gov/en/#17.59/36.63278/-105.181329](https://www.ejscreeningtool.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 tracts, determined from the CEJST:

49013940500

49013940600

Both of these tracts are located within Duchesne County, Utah and are identified as disadvantaged. Additionally, the CEJST states “The lands of Federally Recognized Tribes that cover 100% 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?*

These communities located within the disadvantaged tracts will benefit from the increased reliability and water delivery in the systems. Farmers and ranchers rely on water made available through these canals, and piping or lining the canals will increase the reliability of water that is delivered to the user 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. SUBCRITERION 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 Cedarview portion of the project lies within the Uinta River and structures and canals below the Cedarview diversion benefit approximately 27,000 acres of irrigated land with Ute Tribe water rights. Approximately 65% of the water used and managed through the Uinta River goes to tribal water appropriations. This project will benefit the operation of the tribal canals and therefore allow them a more consistent supply to fill their duty needs and allow later appropriations water in a timely and accurate manner. The Ute Tribe and the Uintah Indian Irrigation Project O&M Company is a very important player in the Uinta River drainage in the funding and success of projects along the river system. The Cedarview Canal also provides tribal livestock water sources during grazing periods along the canals.

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

The proposed project supports the Moon Lake Project, which stores water in Moon Lake and the Bureau of Indian Affairs operated Midview Reservoir to supplement water supply for land along the Lake Fork and Uinta Rivers. Saving water with this proposed project would benefit that conservation effort.

- *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?*

The project would help address climate change and increase tribal 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, benefiting downstream users which includes the Ute Tribe. The project will also bolster tribal 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 proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?*

MLWUA receives water from Moon Lake Dam, which is a Reclamation owned dam, part of the Moon Lake Project. The facilities of the project include Moon Lake Dam, Yellowstone Feeder Canal, and the Duchesne River Exchange. The project stores water

in Moon Lake Reservoir and Midview Reservoir to supplement water supply for land along the Lake Fork and Uinta Rivers, much of which is tribal waters in the river systems. The Moon Lake project provides supplemental irrigation water for 75,256 acres of land in Duchesne and Uintah Counties plus 10,000 acres under the Midview Exchange.

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.*

Piping the canals will allow users along the pipelines to more easily perform on-farm projects to convert from flood irrigation to sprinklers. Pressurized irrigation would assist the farms with sprinkler irrigation with either no pumping or reduced pumping due to the pressure that will be seen within the pipelines. Additionally, with both the pipeline projects and the lining project, flow will increase to the farms enough to provide more reliable deliveries. Having meters and flumes 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.*

OR

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

On-farm improvements have occurred within the DGIC, MLWUA, and FCC service areas, including within Class A, Class B, the classes served by the Cedarview Canal (Class F, K2, and E), and the Farnsworth Canal. These on-farm projects include piping projects and sprinkler conversion from flood irrigation. This project directly facilitates the ability to continue these on-farm projects through the piping and lining of the 6 different canals because it maximizes the efficiency of the water delivery system. The water delivery will be

more reliable, and the meters and flumes will allow users to know the flow being delivered and plan crops around that.

- *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 of the projects on the canals. On-farm improvements will be primarily from conversion from flood irrigation to sprinklers.

- *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.*

The maps are attached in Appendix C.

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 canal cross sections and pipelines. Next steps include surveys onsite, environmental clearances, final design, construction of project, installation of measurement and telemetry devices, commissioning of pipelines and canals, and monitoring performance of the new project components.

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

The proposed projects have several key elements pertaining to environmental clearances and 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 as a Stream Alteration permit from the State of Utah.

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

Conceptual design for the hydraulics of the canals have been performed, including sizing pipe and the cross section of the lined canal. The alignments of the canals have also been included in the conceptual design. Discussion on design criteria and needs of the MLWUA and DGIC have been incorporated into this application as well.

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

No new policies or actions would be required. MLWUA, DGIC, and FCC have a good system in place, just needs improvements to increase efficiency.

- *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 plan is to obtain funding from WaterSMART as well as UDAF Water Optimization over the next several months. 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. The expected timeline is similar to the existing projects being completed with the local Reclamation offices and the projects have been discussed.

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?*

These projects have widespread support from MLWUA board, DGIC board, and FCC personnel, including many users and shareholders. They are excited to make changes and improvements to increase efficiency, accuracy, and reduce conflicts.

- *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. Without this support, the projects will likely not happen or just continue getting minor band-aids that are not long-term solutions.

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

This project collaboration could serve as an example and pathway for future groups and projects to come together. As noted, the Cedarview projects is a second phase, with future phases downstream that could be done to further conserve water. Additionally, the Farnsworth Canal has additional high seepage areas that would benefit from lining in future phases as well.

- *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. The agricultural benefits have been discussed throughout this application, including the more reliable delivery of water. The environmental sector will benefit from the project because of the elimination or reduction in the loss of water that is currently experienced. The water that is saved will remain within the river systems, benefiting threatened and endangered species of fish. Additionally, other fish species will also benefit, supporting the recreation sector with more fishing opportunities being available along the river system.

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

This project will be considered a huge success not only for its water managing improvements, but the partnering on water conservation and irrigation infrastructure between multiple entities and the private irrigation companies. The evidence of collaboration can be found in the letters of commitment/support to the project included in Appendix B.

Historically, there has been a conflict in the actions of entities within the river systems in the Uintah Basin to supply water during irrigation season and storage seasons. This project will continue to improve working relationships and trust by providing effective and operable canals that will be included in the website (www.duchesneriver.org) showing real time data on the flow rates being diverted and passed down each channel. Information in real time will prevent accusation and bad feelings between entities. Frequent tension is definitely felt with the present operations. This project will eliminate seepage and loss that are seen as waste by many water users. The future possibility of water conservation projects is very evident and has already commenced.

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?*

The proposed projects are contributing to this basin where Reclamation has been actively engaged. Both the water conservancy districts in the basin have Green River water shares that are stored in Flaming Gorge Dam as well as Starvation Reservoir water interests.

- *If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?*

MLWUA receives water from Moon Lake Dam, which is a Reclamation owned dam, part of the Moon Lake Project. The facilities of the project include Moon Lake Dam, Yellowstone Feeder Canal, and the Duchesne River Exchange. The project stores water in Moon Lake Reservoir and Midview Reservoir to supplement water supply for land along the Lake Fork and Uinta Rivers. The project provides supplemental irrigation water for 75,256 acres of land in Duchesne and Uintah Counties plus 10,000 acres under the Midview Exchange.

- *Will the proposed work benefit a Reclamation project area or activity?*

The Duchesne County Water Conservancy District has a current WaterSMART project with the Class K2 Improvement Project and Browns Draw Reservoir Outlet Modification that will directly benefit from the improvements to the Cedarview Canal which delivers water to the reservoir. Additionally, there is another current WaterSMART project to replace the Cedarview Canal Diversion structure that will directly benefit from the implementation of this project. The Uintah Water Conservancy District also has the Uinta River Bifurcation Structure project with Reclamation downstream from the Cedarview Diversion that will also receive benefits from this project.

- *Is the applicant a Tribe?*

MLWUA is not a tribe, however, Tribal water is involved with this project due to Moon Lake Exchange and other water sharing and water rights prioritization in the Basin. Accurate and efficient use of water from the rivers and sources will benefit the entire system, with the Ute Tribe utilizing approximately 65% of the river flows. Efficiency and elimination of water loss will indirectly benefit all water users and river systems downstream.

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 Cedarview Canal Farnsworth Canal, Lateral 3, Mt. Emmons Cement Ditch, Upper Town, and Lower Town will be the measurement of delivered water to each of the canals and the comparison to previous years of the amount being delivered to irrigators. In the case of the Cedarview Canal, delivery to Brown's Draw Reservoir (as noted by Rainbow telemetry site) and the amount passing through the USGS gage near Randlett will also be taken into account. The inflow/outflow measurement method will be utilized to determine what is being lost in the areas where the project installed pipeline or canal lining. Previous years data for major canals, the Uinta River, and the Lake Fork River have been recorded and logged in the database at www.duchesneriver.org. This project's measurements will also be stored at this website once the project is completed. The percentage of water diverted into the canals to the total supply will be evidence of the water savings staying in the river systems.

A non-technical performance measure that is important to MLWUA, DGIC, and FCC is to have this project successfully built and funded together with the partners listed and working with the Ute Tribe for access and improvements on their lands. Success will be measured by the working relationship and successful completion of the project with all parties at the table participating in the design process, funding, and construction of the project.

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.

The funding plan for MLWUA, DGIC, and FCC on this project hinges upon a successful funding application through the WaterSMART program. The funds required for the non-federal cost share are directly from DGIC shareholders, MLWUA, and FCC. An additional assessment would need to be imposed on shareholders and the Board to be able to cover the project. Options may be explored to finance the required amount; however, this would likely wait until the result of the WaterSMART application is announced. The table below shows the breakdown of funding sources for the project. See the attached cost estimate for further breakdown of each item and budget in Appendix A.

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
UDAF Water Optimization	\$1,557,500
Dry Gulch Irrigation Company	\$29,338.40
Moon Lake Water Users Association	\$4,327.54
Farnsworth Canal Company	\$19,334.06
Non-Federal Subtotal	\$1,610,500
REQUESTED RECLAMATION FUNDING	\$1,610,500

1.6.1. PERSONNEL

See Contractual rates and title page for key personnel. The salaries and/or reimbursements of MLWUA or other support staff are not included in this budget nor are they anticipated to be part of it.

1.6.2. FRINGE BENEFITS

All fringe benefits are fixed rates for billing through engineering and construction contracts.

1.6.3. TRAVEL

Travel costs will be part of the contracted portion of the project. It is likely that the scope of this project will utilize local consultants and contractors so that travel costs are minimal.

1.6.4. EQUIPMENT

Equipment will be part of the contracted portion of the project.

1.6.5. SUPPLIES

Supplies will be part of the contracted portion of the project.

1.6.6. CONTRACTUAL

An engineering consultant will be contracted through the MLWUA or DGIC procurement process to perform the design, funding procurement, and construction engineering of this project. JDE has assisted in the preparation of this application and a budgetary estimate of time and rates anticipated for the civil and construction engineering scope of the project. The environmental consultant will provide the appropriate permitting and surveys for the project, along with coordination with USFWS for ULT flowers. The table below includes the design and environmental laborer classifications, billing rates, and estimated number of hours.

Role/Position	Rate	Hours	Total
Senior Project Manager	\$219	90	\$19,700
Project Engineer	\$160	230	\$36,800
Graduate Engineer	\$140	390	\$54,500
CAD Technician	\$101	180	\$18,200
Professional Land Surveyor	\$175	90	\$15,800
Survey Technician	\$135	160	\$21,600
Administrative Assistant	\$84	100	\$8,400
Environmental Scientist	\$142	423	\$60,000
TOTAL			\$235,000

1.6.7. CONSTRUCTION

A general contractor will be contracted through MLWUA or DGIC procurement process to perform the construction of the project. See Appendix A for a breakdown of construction items and tasks, which will be utilized for bidding purposes for construction contractors, with a price-based selection for qualified contractors to perform the work.

Additionally, an engineering consultant will be contracted through the DGIC or MLWUA procurement process to perform construction staking, material testing, and construction observation during construction of the project. The table below includes the construction engineering laborer classifications, billing rates, and estimated number of hours.

Role/Position	Rate	Hours	Total
Senior Project Manager	\$219	60	\$13,100
Project Engineer	\$160	90	\$14,400
Construction Project Manager	\$140	165	\$23,100
Construction Engineering Technician	\$118	1000	\$118,000
Professional Land Surveyor	\$175	38	\$6,600
Survey Technician	\$135	80	\$10,800
TOTAL			\$186,000

1.6.8. OTHER

No other expenses are anticipated.

1.6.9. INDIRECT COSTS

Not included. Note that “Indirect” costs on the attached cost estimate could also be defined as non-construction costs to help clarify. All costs proposed in the budget are based on quotes, estimates, and contractual itemized costs from similar projects in the area.

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 and reshaping of the cross section of the existing canal for installation of the concrete liner. In order to minimize these impacts, the existing alignment of the canals and access roadways will be utilized, with minimal disturbance outside of the existing canals. The completed project would improve the quantity of water staying within the river systems, improving habitat for animals and fish species as well. No other impacts are anticipated.

- *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 systems where these projects would be constructed. These projects will not directly impact these fish species; however, the project will benefit the fish as previously described. Additionally, there could be the endangered flower, Ute Ladies Tresses (ULT) or its habitat present near the project area. In order to eliminate or minimize disturbance, the project sites will be evaluated prior to the start of construction.

- *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 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?*

DGIC constructed most of their canals between 1905 and 1915.

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

The purpose of the project is to line the Cedarview Canal and Farnsworth Canal and pipe the four other canals. These are canals that were previously constructed, most likely between 1905 and 1915. Through these years, maintenance has occurred on all of these canals to keep them in service. Performing this project will extend the life of these canals as well.

- *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.

There could be eligible structures that could be listed within the irrigation district. As far as the project area is concerned, only the existing canals will be piped and lined. The pipelines will have new inlets constructed and the lining will tie into Phase 1 of the Cedarview Canal project which was replacing the existing diversion structure.

- *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.

- *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 in any negative impacts to Tribal lands; however, increase in efficiency in Tribal water systems will be a result of this project.

- *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. Project specifications will require contractors to have a weed-free equipment and operation, with cleaning requirements between projects necessary and required.

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.

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. A stream alteration permit and potential Army Corp permit is also anticipated to some degree, with the critical path item being the ULT. Some of the elevations may rule out that requirement. A cultural resource survey and a 401 certification is also anticipated.

Tribal lands will require the contractors to have an access permit and UTERO for work on Ute Tribe Lands. The MLWUA and DGIC have their own access permits and prescriptive and sometimes descriptive easements for their canals and structures to do work and improvements on them. This is not anticipated to be a hurdle for access during construction.

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.

Two additional funding applications were submitted to UDAF Water Optimization program for funding in the amount of \$1,557,500. This application was submitted January 31, 2024, and it is expected that the results of the funding will be announced in March 2024. That application is from a non-federal funding source and would not be duplicative of the funding requested from Reclamation. They also require 10% minimum of self-contribution from the entity receiving the funding in the form of cash, in-kind, or loan from the Board of Water Resources.

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.

There are no known actual or potential conflicts of interest that exist at the time of submission of this application.

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.

MLWUA has a single audit done each year for their accounting practices, it can be made available upon request and their EIN number is 87-0154905.

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.

Not applicable.

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.

Letters of support are included in 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.

Not applicable as MLWUA is a Category A Applicant.

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 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

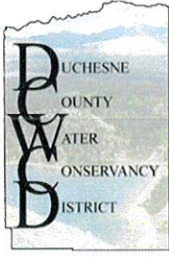
anticipated to be provided by a source other than the applicant, the third-party cost share must be supported with letters of commitment prior to award. Letters of commitment should identify the following elements:

- 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.

Letters of commitment are included in Appendix B.

APPENDIX B. LETTERS OF SUPPORT AND FUNDING COMMITMENT



DUCHEсне 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 Rowley – Vice Chairman
Keith Hooper – Member
Connie Sweat – Member

February 12, 2024

RE: DCWCD Support Letter for the MLWUA & DGIC 2024 Canal Rehabilitation Projects

Grant Application Review Committee:

The Duchesne County Water Conservancy District (DCWCD) is submitting this letter of support for the Moon Lake Water Users and Dry Gulch Irrigation Company joint effort in their 2024 Canal Rehabilitation projects. This collaborative group is applying for funding assistance through the Utah Department of Ag & Food Water Optimization and the Bureau of Reclamation WaterSMART programs to make responsible water-saving improvements to their respective infrastructure.

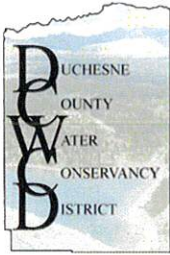
This project will combine several smaller ditch piping projects as part of Class A and Class B of Dry Gulch Irrigation Co. and also a canal lining on the Cedarview Canal, which is a second phase of improvements for Cedarview after their diversion structure replacement that was funded previously. This project lies within the Uinta River, Green River, and Colorado River systems and will be an improvement with water quality as well as quantity. We appreciate the efforts that have gone into these projects and the collaboration to combine several smaller projects into a larger effort to streamline funding paperwork and apply more dollars towards the improvements themselves.

We appreciate the opportunity to partner with each of these stakeholders, UDAF, and Reclamation. We formally request your consideration and funding support for these applications and thank you for the continued support of the entities in the Uintah Basin.

Sincerely,

A handwritten signature in blue ink that reads 'Clyde Watkins'.

Clyde Watkins
General Manager
Duchesne County Water Conservancy District



DUCHEсне 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

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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 Farnsworth Canal Rehabilitation Phase I Project

Grant Application Review Committee:

The Duchesne County Water Conservancy District (DCWCD) is submitting this letter to show support for the Farnsworth Irrigation Company's Canal Rehabilitation project being submitted for funding assistance. This project will include installation of an impermeable liner with concrete protection on the lowest open channel reach of the canal where there is high seepage and erosion prior to their screening structure and pipelines. This project will reduce maintenance and improve water quality in their system.

Farnsworth has had numerous flash flooding events due to the East Fork Fire that filled their canal with sand, ash, and silt. This has been a financial burden to the company and increased the erosion on several portions of their canal. This project will address the reach closest to the end of their open channel canal that has high seepage and is causing erosion and sediment transport into their piped system. DCWCD recommends and supports Farnsworth moving 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. This is also a critical project for the region as water savings and salinity reduction will benefit the Duchesne River, Green River, and Colorado River systems.

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 or the project engineers with further questions. We look forward to hearing about the results of the grant applications.

Sincerely,

Clyde Watkins

General Manager

Duchesne County Water Conservancy District

Dry Gulch Irrigation Company - Established 1905
"Quality People, Providing Quality Water and Service through Quality Delivery Systems"



263 East Lagoon Street - PO Box 265 - Roosevelt, Utah 84066 - 435-722-2204 drygulch@ubtanet.com

Directors: "A" Junior Tidwell "B" Rodger Ames "C" Jason Riley "D" Drew Eschler
"E" Keith McMullin "F" Wayne Malnar "K2" Rod Olsen
Secretary: Bonnie L Dehart

February 14, 2024

Dex Winterton, Manager
Moon Lake Water Users Association
PO Box 235
263 E Lagoon Street
Roosevelt, UT 84066

RE: Class A Lateral 3, Class B Laterals, and Cedarview Canal Lining – Letter of Commitment

Mr. Winterton:

The Dry Gulch Irrigation Company is submitting this letter to demonstrate support for the proposed 2024 Canal Improvement project being submitted for funding assistance through MLWUA or DCWCD. These projects are an important part of the Class A, Class B, and Uinta Classes and the water users who irrigate from them. The total cost estimate for the project is \$2,000,000. There are two grants being applied for funding this project, the Bureau of Reclamation's WaterSMART Grant opportunity and the UDAF Water Optimization program. The following commitment is proposed for our company, with the associated grant funds:

- Cost share of up to **\$177,500** (10% of DGIC projects)
- 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.
- We request further information and coordination as the project commences and the funding scenario is finalized.

We appreciate the opportunity to partner with Moon Lake Water Users Association and 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.

Sincerely,

Rodger Ames
President

Dry Gulch Irrigation Company