

WaterSMART Grants:
Water and Energy Efficiency Grant for
Fiscal Year 2024

Technical Proposal

Moore Canal Piping Project: Phase 2

Moore Canal Water Users' Association Corp

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Executive Summary

Date: February 22, 2024

Applicant: Moore Canal Water Users' Association Corp

City: Moore

County: Butte

State: Idaho

Category A Applicant

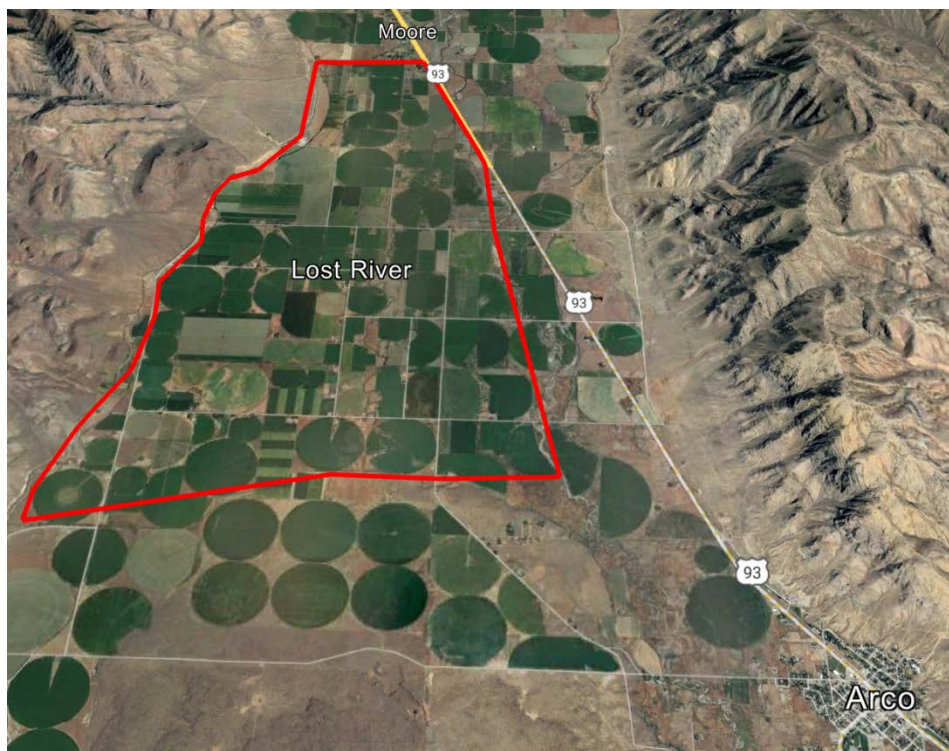
Funding Group II

The Moore Canal Water Users Association Corp (MCWUA), near Arco, will convert 10 miles of earthen canals and laterals to IPS DR 32.5 Pipe in various sizes to address seepage loss in the project area. The project is expected to result in annual water savings of 9,603 acre-feet in normal water years and 4,143 feet in drought years. The water savings will be used to reduce existing groundwater pumping in an area with significant aquifer depletion and to enhance flows in the Big Lost River, a tributary of the Snake River.

Length of time and estimated completion date for the proposed project – Estimated start date for Phase II is March of 2025. Estimated completion date for project is December 31, 2027. Project is not located on a federal facility.

Project Location

Moore Canal Piping Project: Phase II is located in Butte County, Idaho, due south of Moore Idaho and five miles north of Arco Idaho. This phase will pipe the majority of the Westside Canal, a lateral of the Moore Canal. The project area spans a radius of almost 11 miles of farm ground. The latitude of the center of the project is 43°40'40.21"N and longitude is 113°22'16.61"W. The map below shows the proposed project boundary for Phase II.



Moore Canal Piping Project: Phase II - Project Location



D.2.2.2.5 Project Description

This project proposes to pipe the Westside Canal, A lateral connected to the Moore Canal. Approximately 10 miles of laterals will be converted from open canal to pipe with pipe sizes ranging from 34” to 6” IPS DR 32.5 Pipe depending on what size is needed to deliver the required amount of water to specific patrons, and eventually pressurize these sections of the system.

Piping this phase of the project will require labor and equipment for excavation to place the pipe, material for bedding, and material for backfill. The cost for the labor and materials decreases as the size of the pipe decreases.

Phase 1 of the project has already been finished which piped 4 miles of the Aikele Stub lateral of the Moore Canal. At the end of phases 1 and 2 of this project, 14 miles of the Moore Canal system will be piped to reduce seepage, increase efficiency, and will reduce the number of lateral ends where wastewater is flowing out of the system out of reach of users that desperately need the water. The reduction in lateral ends will allow the MCWUA to direct the flow of water where it is needed and reduce the wastewater flowing out of the system.

Pictures of Moore Canal – Phase 1 & 2

Picture 1: Existing Canal and infrastructure in proposed Phase 2 location



Picture 2: Phase 2 – Existing Westside Lateral



Picture 3 and 4: Phase 1 - Installing 30" pipe in Aikele Stubb Lateral



Evaluation Criteria

Evaluation Criterion A—Quantifiable Water Savings (25 Points)

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.

Piping approximately 10 miles of the Westside Canal is anticipated to conserve approximately 9,591 acre-ft of water per year from seepage loss as a direct result of this project in normal water years. In drought years, when less water is available for delivery for a shorter period of time, the amount conserved as a direct result of this project is estimated to be 5,793 acre-feet.

	Percentage of Loss	Irrigation Season (Days)	Diversion in normal water years (AF)	Diversion in drought years (AF)
Westside Canal	57%	1	101	61
		167	16867	10187
	Estimated Water Conserved	167	9591	5793

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)?

Current losses are seeping into the ground and the surrounding water table. A portion of the losses are coming to the surface and are lost to evaporation.

- 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?

It is unknown how current losses are being used. The Big Lost River Irrigation District (BLRID), which is the local irrigation district that supplies the water to the Moore Canal, has conducted ground water studies and found that it is more beneficial to the water table for water to remain in the Big Lost River than it is to be delivered to the canals and lost through seepage where the benefit of the seepage is unknown.

- 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?

There are no known benefits associated with where the current losses are going.

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

The loss calculations were based upon the ditch rider logs from BLRID. The delivery to the headgate of the Westside Canal was documented daily. The allowed daily decreed delivery during the irrigation season to the headgate of the Westside Canal is 101 acre-feet. The point of delivery for each user on the Westside Canal is also measured by BLRID. When added together, when the full decreed amount was able to be delivered to the headgate, the total amount of water delivered to the users on the Westside Canal was calculated to be 43.6 acre-feet per day. This is an average loss of 57%. The BLRID assesses 60% loss to the Moore Canal annually.

(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.*

The numbers used to calculate the water savings were taken directly from BLRID ditch rider logs over a span of the 2022 irrigation season. The estimated average annual water savings that will result directly from the project were determined by calculating the volume of water delivered to the headgate and then calculating the volume of water that is delivered directly to the users. The difference between the amount of water that was delivered to the Westside Canal headgate and the amount of water delivered to the users was estimated to be the amount of water lost to seepage and evaporation in the Westside Canal during conveyance to the users individual headgates. The amount of daily loss was then multiplied by the number of days in the irrigation season to determine the average annual water savings that will result from this project.

- 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.*

Average annual canal seepage losses have been determined by the BLRID who is responsible for delivering water to the Moore Canal and the Westside Canal. The BLRID assesses a 60% loss to the Moore Canal overall. The seepage loss for the Westside Canal lateral of the Moore Canal was determined by using BLRID ditch rider measurements at the headgate of the Westside Canal and at each users headgate. The difference between the amount of water delivered to the headgate of the Westside Canal and the cumulative amount of water delivered to the headgates of each individual user was used to calculate the seepage loss.

- 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)?*

Within the project area, post-project seepage losses will be eliminated by converting the open air, unlined Westside Canal to pipe. With good construction practices for the installation of the pipe, leakage losses from pipe sections and joints will be near zero.

- 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?*

Piping the Westside Canal will reduce transit losses by an average of 959.1 acre-feet per mile annually when deliveries to the Westside Canal are normal. In drought years, when deliveries are reduced, the project will result in an average transit reduction loss of 414.3 acre-feet per mile annually.

- e. *How will actual canal loss seepage reductions be verified?*

Actual reductions in the Westside Canal seepage loss will be verified by measuring the amount of water delivered to the Westside Canal headgate and to each user. There are existing measuring devices in place. If needed, additional measuring devices will be installed to help verify the actual reduction in losses in sections of the canal that are not frequently measured.

- f. *Include a detailed description of the materials being used.*

The materials being used for this project is IPS DR 32.5 Pipe ranging in size from 34” to 6”. The size of pipe will change depending on what is needed for each section of the Westside Canal that is being converted from an unlined open channel to covered pipe. The channel will need to be excavated and bedding material will be placed under the pipe to ensure longevity of the project and little to no movement when the pipe is covered and it is used to deliver water to the users headgates.

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 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?*

This project is expected to result in reduced groundwater pumping. Because there is so much seepage loss of surface water within the project area, users on the Westside Canal use ground water to supplement the reduction in deliverable surface water. The proposed project will result in more surface water being delivered to users which will reduce the need to pump supplemental

groundwater. The proposed project will also result in a pressurized system, which will reduce the amount of energy needed to deliver water from the project to users land.

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

No calculation for a reduction in greenhouse gas emissions has been made for this project. However, the project will reduce the need for maintenance and management activities that will result in reduced vehicle miles driven and a reduction in the use of heavy equipment needed to maintain the Westside Canal annually.

Evaluation Criterion C—Other Project Benefits (15 points)

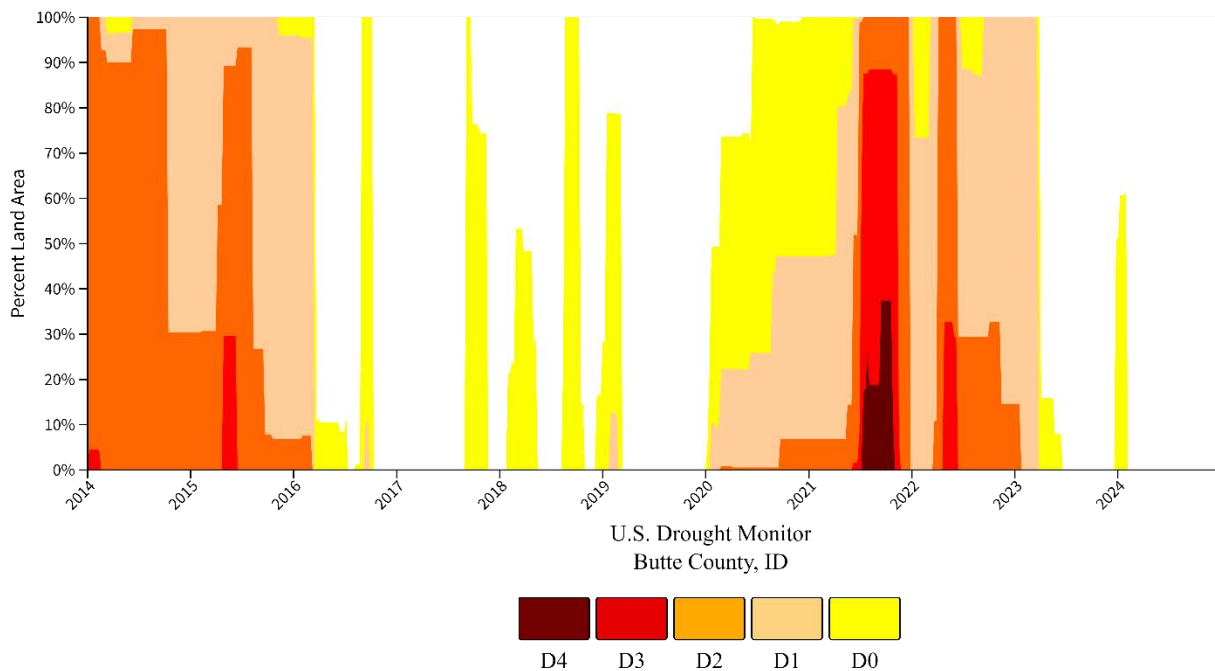
Resilience and Sustainability Benefits.

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:*

o Describe recent, existing, or potential drought or water scarcity conditions in the project area.

During the 2021 and 2022 irrigation seasons, according to drought.gov, Butte County Idaho had varying degrees of drought ranging from moderate with a short period of exceptional drought. 2023 was a good water year where the project area was not in a period of drought.



o Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?

Yes, the project is in an area that has recently experienced drought.

o 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).

Butte County and the project area within it is not projected to be in a condition of drought in the coming months according to Drought.gov. However, that could change as the winter began abnormally dry and it is unknown what precipitation will look like in the next few months before the irrigation season starts.

• 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 project will directly result in more efficient management of the water supply. Piping the Westside Canal will allow more water to be delivered to users, which will aid in reducing ground water pumping needed to supplement ground water. The project will also result in a reduced number of ends of the lateral where wastewater is lost. The reduction in ends will allow water managers to more effectively control and direct where the water is going within the project area. All of these benefits will result in a more efficient use of water supplies.

• 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.

Any conserved water as a result of the project will be used to offset groundwater pumping, reduce diversions, and an amount may be left in the river system to benefit downstream users if possible.

o Indicate the quantity of conserved water that will be used for the intended purpose(s).

The project will increase the amount of water that users on the Westside Canal will receive at their headgates for use on their land. Because of the improvement in water deliverability, users will be able to receive most, if not all, of their allocated amounts. If the users decide not to use their full amount, that conserved water will be used by BLRID to offset groundwater pumping that is still needed in the project area. An estimated quantity is unknown, as it is unknown how much users will use for irrigation at this time.

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

BLRID has recharge sites that where any conserved water will be returned to the water table to offset groundwater pumping.

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

The project will benefit flows in the Big Lost River which is a tributary of the Snake River that flows into the Columbia River.

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

Yes. Because the seepage loss is so high, there is frequent tension over available water in the basin. This project will improve the amount of water that can be delivered to users and as a result will reduce the tension between water users.

Ecological Benefits.

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 Big Lost River Mountain Whitefish (Mountain Whitefish) is native to the Big Lost River. It is only found in the Big Lost River Basin.¹ In 2007, the Idaho Department of Fish and Game created a conservation and management plan for the Big Lost River Drainage to help stabilize and increase the population of the Mountain Whitefish. The Mountain Whitefish is reliant on the water supply in the Big Lost River. The Mackay Dam splits the habitat for the Mountain Whitefish, but it is not a Reclamation project. The project will benefit the species by allowing any conserved water to remain in the Big Lost River which will help increase flows and stabilize the habitat for the Mountain Whitefish.

• *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.).*

Yes. The project will allow water to remain in the system for longer periods of time as there will be less seepage loss and water will be delivered to users more efficiently which will allow for some of the flows to be conserved and remain in the system.

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

¹ Idaho Fish and Game Department, Big Lost River Mountain Whitefish Conservation and Management Plan, 2007.

It is unknown whether the proposed project will reduce the likelihood of a species listing or otherwise improve the species status.

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

Yes. The project will help communities bolster drought resilience as it will allow water to be delivered to lands more efficiently in times of drought. Less water will be needed to support the flows in the project because the seepage loss will be dramatically reduced.

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

The project doesn't specifically seek to improve ecological resiliency, but conserved flows may remain in the Big Lost River which would improve ecological resiliency to climate change.

- *Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?*

The proposed project doesn't specifically seek to reduce or mitigate climate pollutions. However, the project may reduce water pollution as it will reduce seepage loss in areas with high amounts of nitrogen in the soil.

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

The proposed project includes sustainable infrastructure that will improve community climate resilience. The pipe that is proposed to be used for the project will reduce the amount of maintenance and work needed to keep the system operational. It will reduce the amount of seepage loss and allow the Westside Canal managers and users to use the available water more efficiently.

Evaluation Criterion D—Disadvantaged Communities, Insular Areas, and Tribal Benefits (15 points)

Subcriterion D.1. Disadvantaged Communities

- *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?*

All of Butte County Idaho is identified as being a disadvantaged community. They are in the 91st percentile for the expected agriculture loss rate. The project will directly improve the rate of agriculture loss as it will help deliver additional water to crops in the project area. Butte County is also in the 65th percentile for low income. The project will help improve the income of the people in the project area by providing additional water to crops which will help increase the income from the crop and allow those in the project area to receive more benefits.

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.*

The users of the Westside Canal have all submitted individual EQIP applications to NRCS for aid in connecting directly to the proposed project. The proposed project will only pipe to the headgate of the users on the Westside Canal. The farmers are responsible for piping from the headgate to the lands they want to irrigate. The on-farm efficiencies will reduce even more seepage and allow the farmers to take even more advantage of the pressurized system as they connect the proposed project to their water delivery systems to reduce the need for pumping.

o Provide a detailed description of the on-farm efficiency improvements.

The on-farm efficiency improvements consist of additional connections to the proposed project, additional piping to the area the farmers want to use the water, flow meters on every connection to enable the water managers to deliver the flow efficiently, and in some cases, pumps to allow the farmers to deliver the water to their lands.

o Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?

Yes. The farmers have requested financial assistance in the form of EQIP applications for the on-farm efficiency projects that will connect to the proposed project.

o 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.

A Water Conservation Project Description Worksheet has been attached that describes the on-farm assistance in the project area that has been applied for. The Worksheet also includes costs for the scope of work proposed in this project. If both grants are approved, only the cost for the on-farm improvements will be requested to be covered from NRCS. 100% of farms in the project are plan to participate in the on-farm improvements if funded.

o Applicants should provide letters of intent from farmers/ranchers in the affected project areas.

Four letters of intent/support are attached as appendices to this application.

o Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how?

Yes. The proposed WaterSMART project will directly facilitate on-farm improvement by installing a pressurized pipe that farmers can connect to their sprinkler irrigation systems to irrigate their land more efficiently.

o Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.

The seepage loss does not only occur when the water is in the Westside Canal. There is also a lot of seepage loss once the farmers divert the water from the canal to deliver it to their lands. The on-farm improvements will help reduce the seepage loss even more and allow farmers to use more of their allocated water on their land which will increase agricultural yields and help conserve water that would otherwise be lost to seepage.

o 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.

- 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.*

Evaluation Criterion F—Readiness to Proceed (8 points)

- Identify and provide a summary description of the major tasks necessary to complete the project.*

The major tasks necessary to complete the project are provided in Table 2: Proposed Project Schedule. Before construction on the project can begin, if the project is approved for funding, the contract with Reclamation needs to be finalized along with the NEPA Compliance procedures. Once those are completed the materials can be ordered and construction can begin.

Table 2: Proposed Project Schedule		
Task	Start Date	Duration
Finalize contract with Reclamation	March 2025	2 months
NEPA Compliance	June 2025	6 months
Permit acquisition (if needed)	August 2025	4 months
Order materials	June 2025	4 months
Project construction	November 2025	18 months
Prepare USBR Final Report	April 2027	1 month
Project Completion/closeout	May 2027	1 month

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

It is not anticipated that any permits will be required for the project. The majority of the pipe is being placed within the Westside Canal channel. The portions of the pipe that will not be placed

in the channel will be placed on users private land who have already given permission and granted easements for the pipe to be placed.

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

Engineering for the project has already been completed. The engineered drawing for the proposed project is attached as Exhibit A. It is not anticipated that additional engineering work will be needed. However, if it is needed, it will be completed before installation of the pipe begins.

- *Describe any new policies or administrative actions required to implement the project. 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 BLIRD and the Moore Canal Water Users Association (MCWUA) have an agreement that allows the MCWUA to improve the system. No new policies or administrative actions are required to implement the project. The propose project has been fully designed to allow for pressurization of the system. No additional design work should be needed, but if it is, it will be done during the time the NEPA Compliance is being conducted.

- *Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation regional or area office?*

The expected timeline for environmental and cultural compliance was not discussed with the local Reclamation regional or area office prior to submission of this grant, but it will be discussed with the local office as soon as the grant is submitted.

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 project. The farmers in the project area support the project as it will help them receive more of their allocated portion of the available water. BLRID is in support of the project as it will allow more water to stay in the system longer and provide greater benefits to the users who pay assessments to BLRID.

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

The significance of the collaboration and support is great. In the past, the farmers and community members in the project area have been against improving the system because of the time and cost that it would take. However, as some of the surrounding canals in the area have been improved and others have seen the benefits from the projects, support for improvement projects has slowly increased. The willingness of farmers and canal companies, like MCWUA, to support improvement projects is the highest it has ever been.

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

Yes. As others see the benefits that come from this project and other projects that support water conservation, the support for them will increase even more and increase the likelihood of other systems being improved.

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

The project will mainly benefit agriculture, but has the possibility to benefit recreation as conserved flows will remain in the Big Lost River.

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

Letters of support are attached to this application as appendices.

Evaluation Criterion H—Nexus to Reclamation (4 points)

The Moore Canal System shares the same Point of Diversion (POD) from the Big Lost River as the Arco Diversion Conveyance Lateral Pipeline project, a Reclamation WaterSMART Project. This POD's associated irrigation water delivery systems will further the water saving efforts initiated by the Arco Diversion Conveyance Lateral Pipeline by continuing to eliminate open canal and laterals within the Moore system converting it to a closed conduit pipeline thus eliminating shrink.

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).

The performance for this project will be based on water better managed. The amount of water going into the pipe will be measured and the amount of water delivered to each user will be measured. These measurements will provide the data needed to calculate the amount of water that is better managed as a direct result of the project.

Environmental and Cultural Resources Compliance

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? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area.*

Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The proposed project will have minimal to zero impacts on the surrounding environment. The pipe for the project will be laid within the Westside Canal channel or other existing right of ways. Best management practices will be taken to ensure dust is minimized when the installation of the pipe is occurring.

• 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 no listed species or designated critical habitat in the project area.

• 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.

There are no wetlands or other surface waters inside the project boundaries.

• When was the water delivery system constructed?

The water delivery system was constructed in 1883.

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

The proposed project will not result in any modification of or effects to, individual features of the Westside Canal other than changing the earthen channel to a piped channel.

• Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

None that are known.

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

No.

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

No.

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

No.

• *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 actually reduce the spread of noxious weeds or non-native invasive species in the area as those species are common along the banks of the canal because of the presence of water. Piping the canal will reduce the water available for invasive species to grow and spread.

Required Permits or Approvals

The required approvals from Butte County to place the pipe in a road right of way, and approval from the BLRID to place the pipe within its prescriptive easement have already been obtained.

Budget Narrative

Budget Proposal and Funding Plan

Total Project Cost Estimate

Phase 2 of the Moore Canal Water Users Association (MCWUA) piping project proposes to continue to pipe 10 miles of laterals that receive water from the Moore Canal to further reduce shrink. At the completion of the initial phase, the goal is to provide a pressurized system to increase management efficiency and supply increased surface water for irrigation to reduce ground water pumping. The total cost for phase 2 is just over \$3.2 million. MCWUA has applied for funds for this phase of the project, and received approval for funding in the amount of \$1,024,818.70 from the Idaho Water Resources Board through the Aging Infrastructure grant program. MCWUA requests the full 50% cost share through this grant application in the amount of \$1,601,280.00. The remaining amount of the project will be covered by the users in the project area in the amount of \$576,459.75. The table below provides a summary of the funds for the project.

Moore Canal Piping Project - Phase II Funding	
Total Project Costs	\$ 3,202,558.45
WaterSMART WEEG Grant	\$ 1,601,280.00
IWRB Aging Infrastructure	\$ 1,024,818.70
MCWUA Cash/In-Kind	\$ 576,459.75

Budget Narrative

The project is ready to move forward as soon as approval to begin is received. The initial planning and engineering design has already been completed for this project. Those costs are not included in the following cost estimate and budget. The final engineering costs and the costs for final review of the project by a licensed engineer is included in the proposed cost estimate and budget. The price of pipe for this project is subject to change. As such we have included an amount for contingency costs for construction in case the price of the material needed for the project increases from the estimated cost and to cover any other unforeseen material costs that may arise during the completion of the project.

The following table breaks down the cost for phase 2

Moore Canal Piping Project Phase 2			
Cost Category	Rate per foot	Amount (feet)	Total Cost
34" IPS DR32.5 Pipe and Installation	\$ 115.45	10,795	\$ 1,246,282.75
30" IPS DR32.5 Pipe and Installation	\$ 96.77	4,040	\$ 390,950.80
26" IPS DR32.5 Pipe and Installation	\$ 76.34	3,210	\$ 245,051.40

20" IPS DR32.5 Pipe and Installation	\$ 45.17	10,595	\$ 478,576.15
16" IPS DR32.5 Pipe and Installation	\$ 28.16	2,420	\$ 68,147.20
12" IPS DR32.5 Pipe and Installation	\$ 17.74	3,580	\$ 63,509.20
10" IPS DR32.5 Pipe and Installation	\$ 13.87	5,500	\$ 76,285.00
8" IPS DR32.5 Pipe and Installation	\$ 9.99	4,905	\$ 49,000.95
6" IPS DR32.5 Pipe and Installation	\$ 7.33	1,500	\$ 10,995.00
Final Engineering Design and Project Review			\$ 40,000.00
Construction contingency (20%)			\$ 533,760.00
Total			\$ 3,202,558.45

Personnel

MCWUA board members and BLRID staff members will provide support as needed to contractors who will be doing the actual installation of the pipe. All contributions by MCWUA and BLRID will be voluntary. All wages and salaries would be paid under agreements with contractors.

Architectural and engineering fees

This estimated cost includes the cost for any additional engineering before construction of the project and final project review after construction.

Construction

All construction costs would be paid under contractual agreements. The bid received from the construction companies included in the estimate of installation, the cost for materials, equipment, and labor. There is no breakdown into the separate categories as none was provided.

The materials for this project were chosen based on cost, quality, and ability to withstand water pressure and last for a long period of time. The pipe is going to be buried and it would be costly to have to dig it out to repair portions of it frequently.

The cost of labor is reasonable as the installation estimate includes the cost for excavation, bedding, and backfill. As the size of the pipe decreases, so does the cost of the pipe and labor. The project is engineered to provide a pressurized system for patrons which will increase BLRIDs and MCWUAs ability to manage the system, improve overall efficiency, and reduce groundwater pumping. The benefits of the project outweigh the cost.

All funding for the project will be used to pay consultants and construction contractors.

Pre-Award Costs

There would be no expenses prior to the award of the grant.

Letters of Support and Intent

William "Bill" Van Lente
2811 N 3300 W, Moore, ID 83255
e-mail: wvanlentemba@earthlink.net
Phone: (760) 382-3966

February 15, 2024

To Whom It May Concern:

I am the owner of a small farm in Butte County, ID, a new farmer at that.

I am also a participate in the NRCS EQIP and Conservation Stewardship programs. Additionally, as a member of the Moore Canal Users' Association, I am supportive of our group pursuing additional grants to fund improvement in our irrigations system. Improvements such as replacing open irrigation ditches with engineered piped systems for laterals will improve the efficiency of water distribution by reducing shrinkage and will help ensure delivered water as provided for in my water rights.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Bill Van Lente". The signature is written in a cursive style with a large, sweeping initial "B".

William "Bill" Van Lente

February 15, 2024

To whom it may concern:

I have been a farmer in the Moore area for over 50 years and am very aware of the inefficiency of our water delivery system. At time I have not been able to receive my full decreed water supply and farm completely productively because of excess shrinkage in poor ditch deliveries. I am excited to see the possibilities of lined ditches and conversion to pipeline deliveries.

Without grants it would be hard or impossible to improve the delivery systems. I appreciate what the Moore Water User association are doing.

M Todd Perkes

To Whom It May Concern:

I am a farmer in the Moore, Idaho area. We rely 100% on irrigation water to grow crops of alfalfa and barley.

The current ditch/canal system is very inefficient due to gravel soils absorbing water. Because of this inefficiency I only get one half of my decreed water right delivered to my farm.

The Moore Canal Water Users Assoc. is doing an excellent job of addressing this problem by piping the canals. This will enable my irrigation water to be reliably delivered so we can continue to grow crops and have a sustainable farming operation.

Thanks for your consideration.

Derek Nichols

Nichols Farms

To Whom It May Concern:

My name is Chase Nielson and I farm in the Moore, Idaho area. My farm gets its water from the Moore canal and is delivered through over two miles over open ditch. When I bought the farm I was excited because it has one of the earliest water rights in the valley, May 1883. But I soon found out that without a supplemental well, I will lose water around the 24th of July on a “normal” year for the Big Lost. Having over two miles of open ditch causes my water to shrink tremendously so that we have to cut back on where we water and how often. This causes us to stress the crop in season more than necessary and we still run out of water earlier in the year.

Piping the canals and ditches will enable my irrigation water to be fully utilized and we can get back to growing crops that we can rotate. Rotating crops helps the soil become healthier and allows us as farmers to be more sustainable and profitable. I am supportive of this project and feel it will help water users fully utilize their rights in a responsible way.

Thank you,

Chase Nielson