Bilbrey Ditch Company

Canal Automation Project

Applicant Contact:
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Applicant Information

***Application Date**:* 2/4/2024
Applicant Name: Bilbrey Ditch Company, Limited
***City, County, State**:* Emmett, Gem, Idaho
Project Manager:

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Requested Reclamation Funding: $68,532.56; **Total Project Cost:** $137,065.12

Project Summary

Provide a one-paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits, and how those benefits relate to the water management issues you plan to address.

Bilbrey Ditch Company (BDC) is a Category A applicant. None of the applicant's facilities are federally owned, operated, or connected to a federal reclamation project. The Bilbrey Ditch Company in Western Idaho is working to upgrade and improve its operational efficiency with technological upgrades and water conservation projects. BDC requests funding assistance through the WaterSMART Small-Scale Water Efficiency Project funding program to automate one headgate and two check structures on its main canal. In particular, the Company's headworks are antiquated, making it difficult to regulate canal inflows. The intent of this funding proposal is to keep water in the Payette River for the legitimate purposes of stakeholders, to maintain the water level in the canal for irrigation users, and to improve the efficiency of the Company's operations by reducing manual labor and increasing the available data about the Canal's performance. The most important benefit sought by this proposal is to improve the Canal's efficiency and performance by 30%, keeping up to 2,200 AF of water in the reservoirs and rivers by better matching the availability of water in the Canal to the demand of its users.

The Bilbrey Ditch Company has support from Idaho Water District 65 for this project. In addition to the WaterSMART SWEP funding, the Bilbrey Ditch Company has been awarded funding assistance through the Idaho Water Resource Board's Aging Infrastructure grant funding program. BDC will work with Rubicon Water Systems and Shippy Brothers Construction to perform $137,065.12 worth of canal hardware replacement and integration of a new SCADA

system. This proposal is seeking $68,532.56 in grant assistance from the WaterSMART SWEP program, and the work is expected to be completed within 18 months of notification of the award. The longest milestones in the schedule are hardware production and shipping, USBR funding approval, and aligning construction efforts with the off-season for the Canal when the Payette River will be at its lowest level. If the BoR notifies award recipients by June 2024, then this project will be completed by November 2025.

The work at each of the three sites will reconfigure the current canal structures, cutting old concrete and adding concrete to the existing structure to install the new gates and control pedestals. This work will replace the headgate at Site 1 and two check structures downstream where the canal splits. Adding these gates will automate canal operations, provide accurate flow data, and enable district staff to manage water storage and return flow within the project area. The automation of the canals will lead to greater safety, water savings, and improved service. The flow data from these features will increase the applicant's understanding of water usage patterns and areas of water loss and provide information to improve district water-saving efforts. This project aligns with the goals set forward by the Idaho Department of Water Resources 1999 Payette River Basin component of the Idaho Comprehensive State Water Plan (Appendix B) and the 2012 Idaho State Water Plan (Appendix C).

Project Location

Provide detailed information on the proposed project location or project area, including a map showing the geographic location.

BDC's Canal Automation Project is located near the town of Emmett in Gem County, Idaho. The Bilbrey Canal diverts water from the Payette River west of Emmett, Idaho, and travels about 3 miles in a westerly direction before flowing back into the Payette River. It has a capacity of 20.85 cfs at the headworks. This project proposes to automate the headgate of the Bilbrey Canal and the two check structures located 1.71 miles SW of the headgate to maintain the water level in the canal for irrigation users and to improve the efficiency of the Company's operations by reducing manual labor and increasing the available data about the Bilbrey Canal's performance. Project locations are approximately 2.8 miles from the Gem County Courthouse. The project's two sites' coordinates are: 43.86956°N, 116.54773°W and 43.86471°N, 116.57858°W.

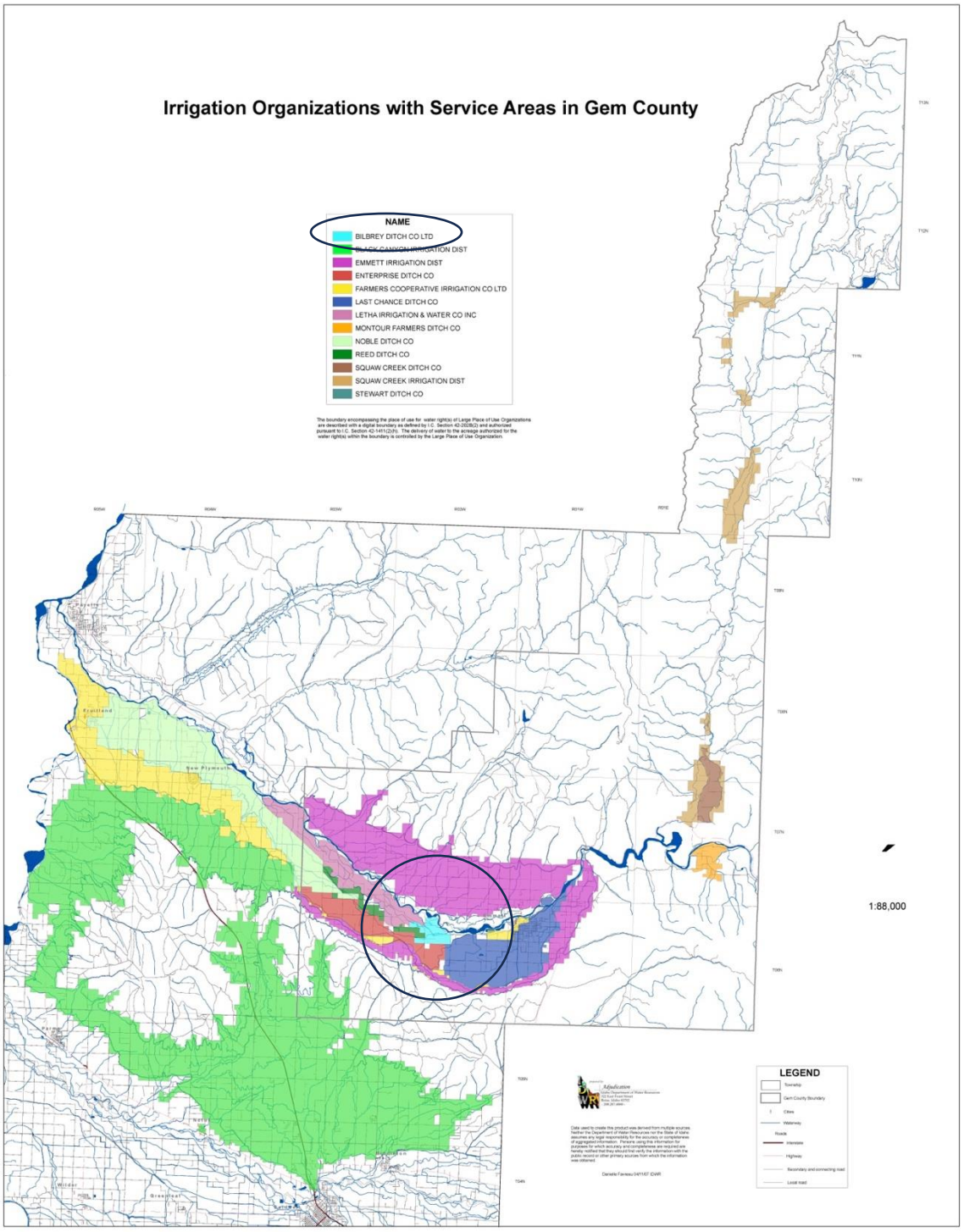

Figure 1 Irrigation Map, Gem County ID Bilbrey Ditch Co, LTD is highlighted in light blue and circled.

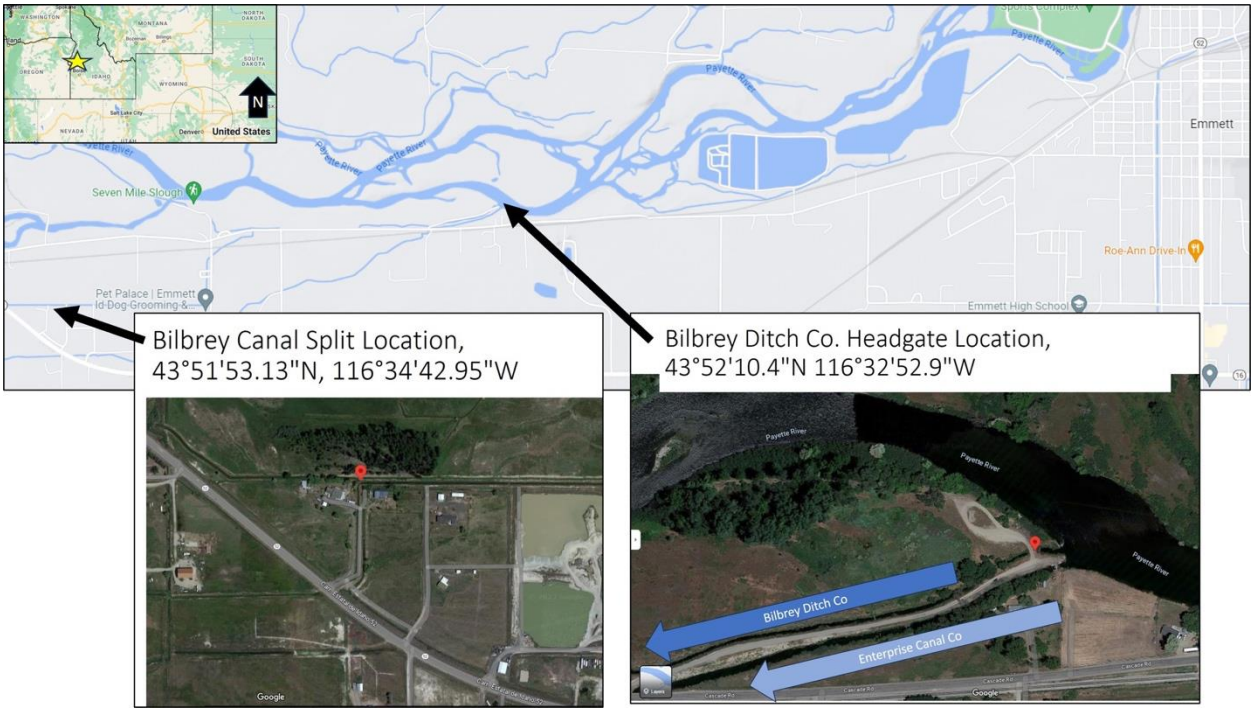

Figure 2 Map of the Project Area on the Bilbrey Ditch Company Canal

Technical Project Description

Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work.

Figure 3 Left: Existing Bilbrey Ditch Canal Headgate structure. Right: Enterprise Canal Headgate structure. All structures controlled with 1990's SCADA are dependent on third-party water level sensors. No connection to downstream checks or turnouts. Section/Township/Range 10/06N/02W

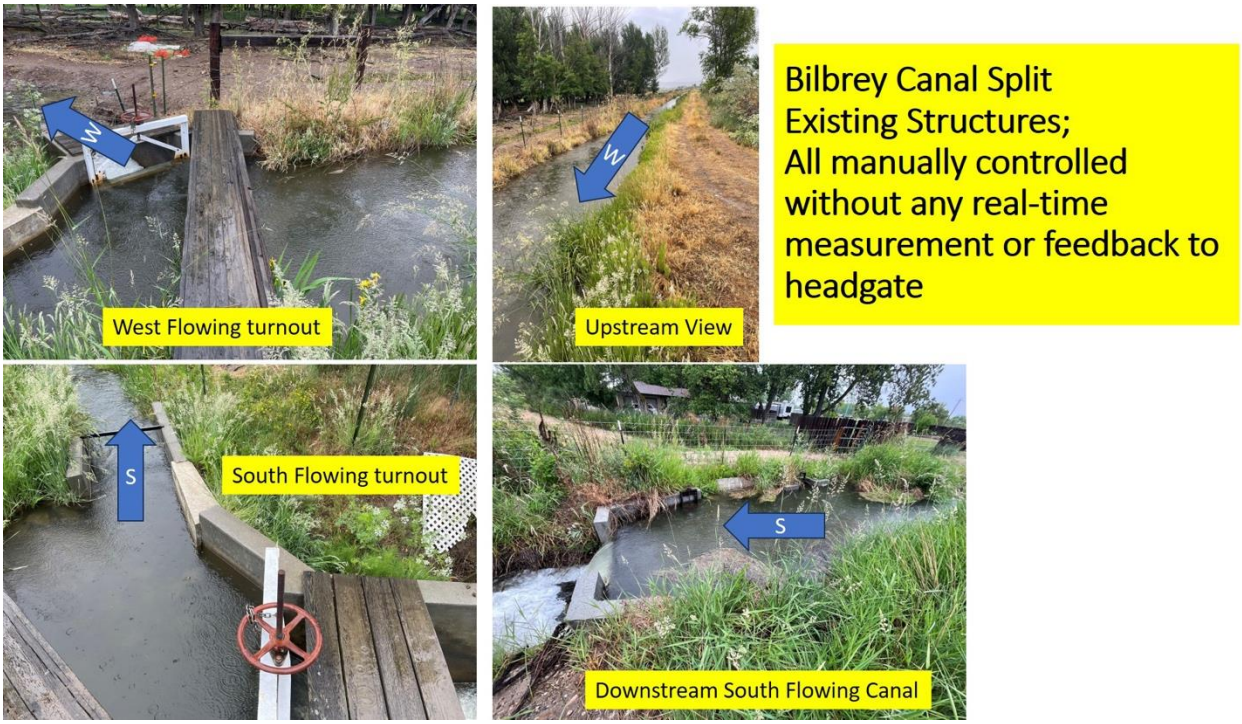

Figure 4 Existing Structures at Site 2, Bilbrey Canal Split. W Section/Township/Range 16/06N/02W

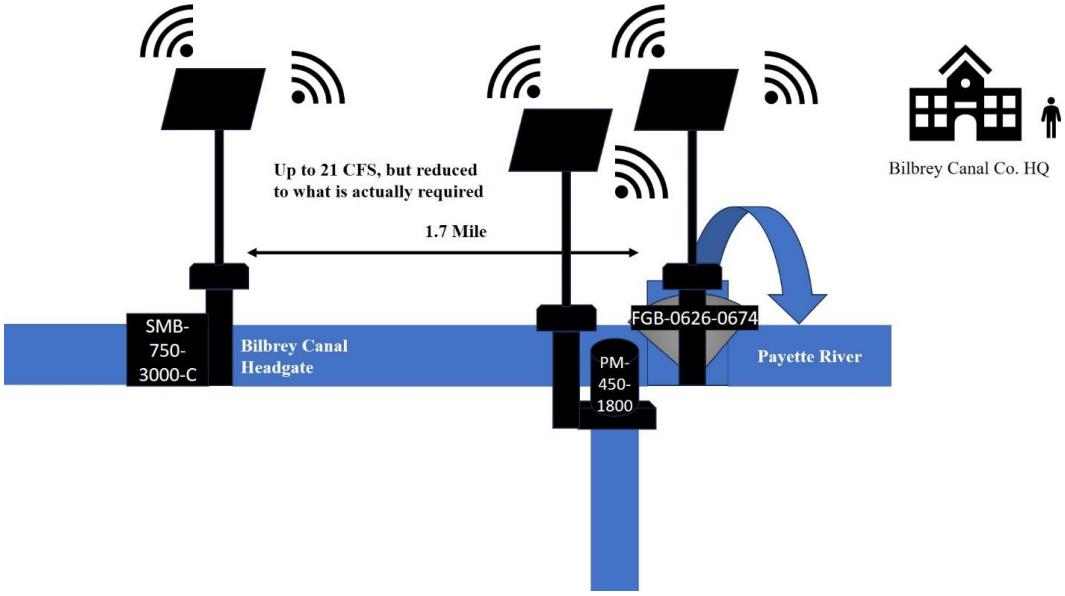

Figure 5 Objective Operations: With Gate Automation Bilbrey Canal, water levels are anticipated to be consistent and approximately 30% closer to what irrigation stakeholders require in real-time.

The first check structure, located at 43.86956°N, 116.54773°W, consists of a single 60" wide sluice gate and is connected to a Campbell Scientific-driven actuator. The flow required at this site is 20.85 cfs. The proposed solution would relocate the Bilbrey Ditch Canal headgate next to the Enterprise Canal headgate and include a built-to-suit concrete housing and a new 30" culvert for the Rubicon SlipMeter SMB-750-3000-C to control the flow. This particular Rubicon SlipMeter can precisely measure up to 39 cfs with +/- 2.5% accuracy. The Bilbrey Ditch Company does not possess the staff or expertise to rebuild the headgate structure's concrete housing for the Rubicon SlipMeter and will contract with Shippy Brothers Construction to build the structure. Additionally, the Bilbrey Ditch Company intends to partner with Water District 65 and Enterprise Canal Co to place a heavy-duty debris boom at the point of diversion to protect this investment from potential log impacts or other floating material.

Each of the above sites will require the same general work but to varying extents for each step. The first objective at each site will be to cut the concrete of the existing check structure. This will be accomplished using the contractor's equipment. The contractor's crew will remove and dispose of the concrete using hand tools, an excavator, and a dump truck. The site will be prepped with any fill and compaction needed for the placement of the concrete structure to house the new gates. The contractor's crews will fabricate concrete forms out of plywood, 2x4s, and snap ties for concrete placement. The new automated gate frame will then be affixed to the concrete using concrete anchor bolts drilled into the new structure and secured with adhesive. Any gaps between the frame and the structure will be filled with speed-plug concrete mortar. The solar panel and gate operational pedestal will be set into the concrete pad, and the gate will be installed in the frame. Lastly, with the help of a technician from the gate manufacturer, the gate will be wired and calibrated. The gates to be used will be provided by Rubicon to make the SCADA system integration seamless.

Evaluation Criteria

Evaluation Criteria A – Project Benefits

Benefits to the Category A Applicant's Water Delivery System: *Describe the expected benefits to the Category A applicant's water delivery system.*

- *Clearly explain the anticipated water management benefits to Category A applicant's water supply delivery system and water customers.*

❖ This project proposes to automate the headgate of the Bilbrey Canal and the two check structures located 1.71 miles SW of the headgate to maintain the water level in the canal for irrigation users and to improve the efficiency of the Company's operations by reducing manual labor and increasing the available data about the Bilbrey Canal's performance. The most important benefit sought by this proposal is to improve the Bilbrey Canal's performance by 30%, keeping up to 5 cfs of water (2,200 AF/year) in the reservoirs and river by better matching the availability of

water in the Bilbrey Canal to the demand of its users. The Idaho Department of Water Resources 1999 Payette River Basin component of the Idaho Comprehensive State Water Plan identified improvements to irrigation efficiency as an important objective. Additionally, it recommended retaining available water resources for stakeholder use and aquatic life. This proposed project seeks to contribute to those objectives while also improving the Company's operations with more efficient use of time and data management. These proposed benefits to the Company's operations would also advance Idaho's 2012 State Water Plan. Specifically, Objectives *1H – Quantification and Measurement of Water Resources* and *2A – Water Use Efficiency* will be improved with these proposed improvements to the Bilbrey Canal.

- *Explain the significance of the anticipated water management benefits for the Category A applicant's water delivery system and customers.*

❖ *Are customers not currently getting their full water right at certain times of the year?*

The current system in place has caused water delivery failure and unintentional flooding. At site 2, water levels fluctuate during the day because the 2 current gates are static and unable to make adjustments. This has caused some shareholders on the north leg to become flooded while other shareholders on the south become short on water.

❖ *Does this project have the potential to prevent lawsuits or water calls?*

Automating the proposed sites will help mitigate the chance of a lawsuit or water call. Bilbrey is not large enough to possess the ability to have employees who can inspect the water flows daily or hourly. Instead of responding to a water call issue, canal automation will allow BDC to remotely adjust gates when needed based on real-time feedback and canal flow rates.

❖ *What are the consequences of not making the improvement?*

Consequences of not making the proposed automation improvements include limiting the applicant's ability to acquire accurate measurements to quantify water delivery efficiency and identify areas where loss may occur. Forgoing the proposed improvements will also affect the applicant's ability to prevent overflow, spillages, and water rationing due to variances in flow throughout the water seasons. Additionally, if no updates are made to the flow measuring and water control devices within the project area, agricultural water throughout the area will continue to be lost through inefficiencies created by a lack of data and precise flow metering.

❖ *Are customer water restrictions currently required?*

Yes, shareholders within the project do operate with restricted access to water due to BDC's current inability to make gate adjustments in real-time. The current static and dated gates cause delayed adjustments and require intensive physical attention to make adjustments for water deliveries. This, paired with BDC's limited staff availability, makes water

delivery and gate adjustment a time-consuming effort that, in turn, delays water deliveries and restricts water available to stakeholders throughout the delivery area.

- ❖ *Other significant concerns that support the need for the project.*

The proposed project area often experiences varying drought conditions, leading to decreased water availability during peak water delivery seasons for agriculture, industry, and residential use. Automated systems can provide real-time monitoring and adaptive control, helping to mitigate the impact of drought and demand on water supplies within the service area. Because of uncertain and varied amounts of precipitation and water availability, increased demand on water systems, and the need for precise delivery and updated water delivery interface, the BDC must eliminate inefficient management and delivery of water by using modern tools for automation and flow measurement

Broader Benefits: *Describe the broader benefits that are expected to occur as a result of the project.*

- *Will the project improve broader water supply reliability at the sub-basin or basin scale?*
  - ❖ Benefits are expected to be geographically localized to the district and its patrons.
- *Is the project in an area that is experiencing, or has recently experienced drought or water scarcity? Will the project help address drought conditions at the sub-basin or basin scale? Please explain.*
  - ❖ As referenced previously, the proposed project is within an area that regularly experiences varying drought conditions. The project sites are located near the Payette River and surrounding riparian areas, which would see direct benefits from efficient and proper water management. This project is also in an area where adequate water management allows for more efficient management of waters returned to the Snake and Columbia Rivers.
- *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 explain.*
  - ❖ Yes. By reducing the amount of water wasted through spillage and inefficient flow management, water can be left in the river to augment downstream flows to the Payette and Snake Rivers, home to threatened and endangered species like the Snake River sockeye salmon.
- *Will the proposed project positively impact/benefit various sectors and economies within the applicable geographic area (e.g., impacts on agriculture, environment, recreation, and tourism)? Please explain.*
  - ❖ The proposed project will allow more precise amounts of water to be diverted to the canal and leave water in the river system by reducing water delivery inefficiencies from spillage and flow measurement errors. Matching the amount of water in the canal to the demand of agricultural producers and residential users benefits the riparian ecosystem of the Payette River.
- *Will the project complement work being done in coordination with NRCS in the area (e.g., the area with a direct connection to the district's water supply)? Please explain.*
  - ❖ None are presently known to the applicant.

Evaluation Criteria B – Planning Efforts Supporting the Project

Plan Description and Objectives: *Is your project supported by a specific planning document or effort? If so, describe the existing plan. When was the plan developed? What is the purpose and objective of the plan?*

- Yes, the proposed project is supported by the Idaho Department of Water Resources 1999 Payette River Basin component of the Idaho Comprehensive State Water Plan. This plan identified improvements and upgrades to irrigation efficiency as an important objective. Additionally, it recommended retaining available water resources for stakeholder use and aquatic life. This proposed project seeks to contribute to those objectives while also improving the Company's operations with more efficient use of time and data management. These proposed benefits to the Company's operations would also advance Idaho's 2012 State Water Plan. Specifically, Objectives *1H – Quantification and Measurement of Water Resources* and *2A – Water Use Efficiency* will be improved with these proposed improvements to the Bilbrey Canal.

Plan Development: *Who developed the planning effort? What is the geographic scope of the plan? If the planning effort was not developed by the Category A applicant, describe the Category A applicant's involvement in developing the planning effort.*

- The overall plan was developed by the state of Idaho, taking into account stakeholders residing within the state of Idaho and entities affected by water usage, savings, and efficiency. BDC identifies as one of these stakeholders.

Support for the Project: *Describe to what extent the proposed project is supported by the identified plan. Address the following:*

- *Is the project identified specifically by name and location in the planning effort?*
  - This specific project is not identified by name and location in the planning efforts, but this type of project is referenced as advancing the overall goals of the previously mentioned planning efforts set forth by the state of Idaho.
- *Is this type of project identified in the planning effort?*
  - Yes, this type of project is identified in the planning effort.
- *Explain whether the proposed project implements a goal or addresses a need or problem identified in the existing planning effort.*
  - This project addresses goals set by the 1999 Idaho Comprehensive State Water Plan by improving and upgrading irrigation infrastructure with better water management. Additionally, this project will retain available water resources for stakeholder use and aquatic life. This proposed project seeks to contribute to those objectives while also improving the BDC operations with more efficient use of time and data management. These proposed benefits to the BDC's operations also advance Idaho's 2012 State Water Plan. Specifically, Objectives *1H – Quantification and Measurement of Water Resources* and *2A – Water Use Efficiency* will be improved with these proposed improvements to the Bilbrey Canal.
- *Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.*

❖ The proposed automation of canal gates and check structures is an integral step in progress toward a more efficient and data-driven system operation. The more operational efficiency BDC can gain through canal automation and more accurate water delivery will free up resources for other essential maintenance and BDC-identified projects. Those other projects lack the transformational benefits and cannot be automated.

Evaluation Criteria C – Implementation and Results

- *Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

❖ There are six milestones associated with this project, as seen below in Figure 6. These milestones are put forth with the objective of delivering automation to the Bilbrey Canal in the 2026 irrigation season.

- Milestone 1 IWRB Aging Infrastructure Grant Award has been awarded in early 2024.
- Milestone 2 USBR WaterSMART SWEP Grant Award is assumed to be in early 2025. There is some flexibility in the project's schedule to allow for a 90-day delay. An earlier award of this grant in 2024 would benefit the project's implementation schedule.
- Milestone 3 production and shipping of the Rubicon gates will begin after the USBR provides the Notice to Proceed (after the initial grant award) to the Bilbrey Ditch Company. Training on the gates' installation, operation, maintenance, and data management can occur concurrently with the production schedule.
- Milestone 4 Concrete and labor contracting activities will begin after the USBR provides the Notice to Proceed (after the initial grant award) to the Bilbrey Ditch Company. There is flexibility in the project's overall schedule, but this event must happen before the end of the 2025 irrigation season.
- Milestone 5 Site construction can begin as soon as the Rubicon gates are ready for final delivery to the Bilbrey Canal Company after the construction contract is completed and the 2025 irrigation season ends. It may take up to two weeks for site construction.
- Milestone 6 Installation of the Rubicon gates may take up to four days. Frames for the gates need to be anchored to the sites, then the gates installed to the frames, and then the pool analysis for Site 2 so that the two sites are effectively communicating with each other about the demand for irrigation water. Pool analysis will be conducted at the beginning of irrigation season 2026 when water is returned to the canal.

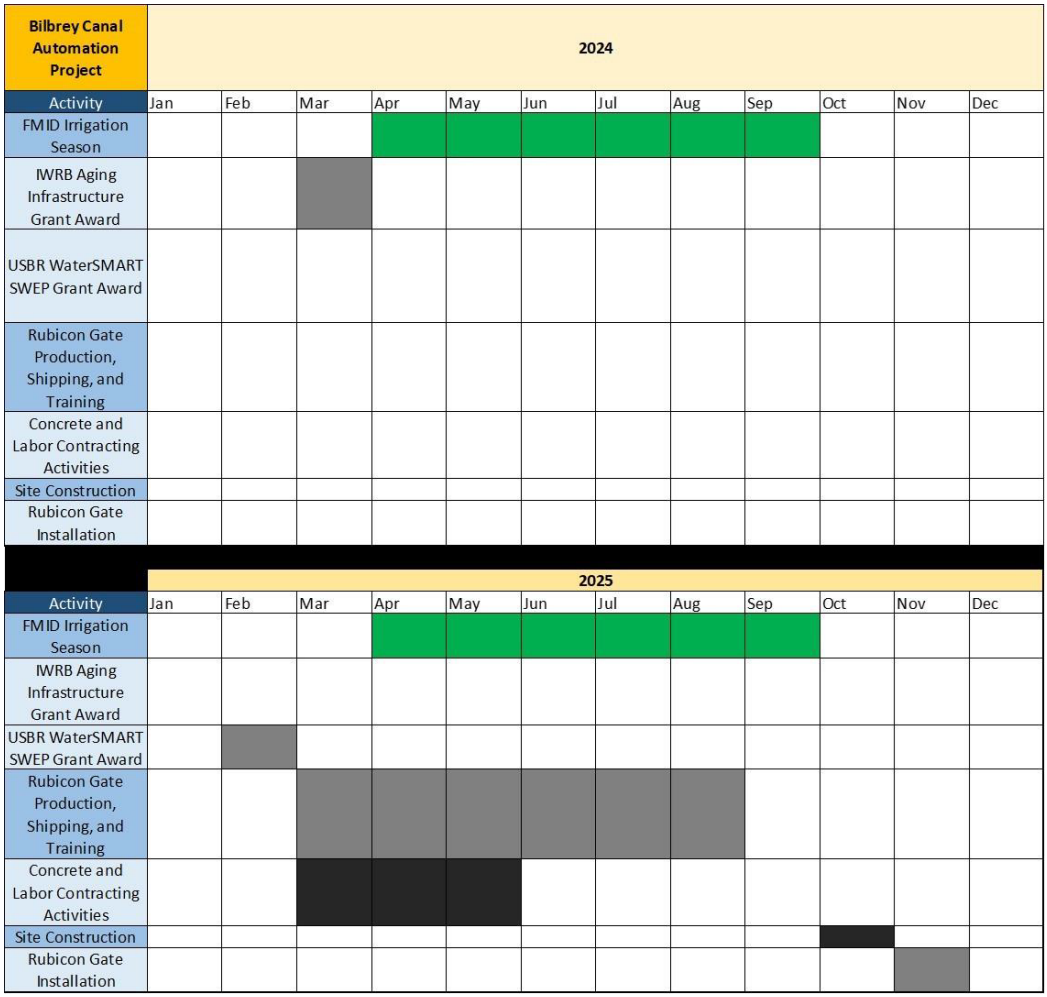

Figure 6 Bilbrey Canal Automation Project Implementation Schedule

- *Describe any permits that will be required, along with the process for obtaining such permits*
  - ❖ No, this project will not require any application for additional permits for completion.
- *Identify and describe any engineering or design work performed specifically in support of the proposed project. What level of engineering design is the project currently? If additional design is required, describe the planned process and timeline for completing the design.*
  - ❖ The gates for this project are fabricated off-site and then installed in the retrofitted district facilities.
- *Describe any new policies or administrative actions required to implement the project.*
  - ❖ After the installation, the water's timing, measurement, and movement will be refined for operational efficiency.
- *Does the applicant have access to the land or water source where the project is located?*

Has the applicant obtained any easements that are required for the project? If the applicant does not yet have permission to access the project location, describe the process and timeframe for obtaining such permission.

- ❖ Yes, the district has full access to both land and water at the locations of the proposed project.

- *Identify whether the applicant has contacted the local Reclamation office to discuss the potential environmental and cultural resource compliance requirements for the project and the associated costs. Has a line item been included in the budget for costs associated with compliance? If a contractor needs to complete some of the compliance activities, separate line items should be included in the budget for Reclamation's cost and the contractor's costs.*

- ❖ BDC's project manager has contacted Rich Jackson, Ph.D. Natural Resource Specialist at the Snake River Area office BoR, for assessment on 2/2/2024. If this is indeed a categorically excluded action with no extraordinary circumstances, this would require completion of a Categorical Exclusion Checklist by Reclamation, costing approximately $500 and taking a week to complete. Federal funding triggers the National Historic Preservation Act and the agency's responsibilities to identify significant cultural resources and evaluate the project's effects on their historic integrity. The Bilbrey Canal has not yet been evaluated for its eligibility to be listed on the National Register of Historic Places. As such, the full Section 106 process would have to be undertaken for this project, including cultural resources survey, report writing, and consultation with Idaho SHPO and Tribes. Fieldwork and report writing could be contracted privately by the applicant, but Reclamation will still be involved in report review and consultation.
  The estimate provided here is for fieldwork and deskwork being performed by Reclamation staff. Contracted fieldwork and report writing would lessen the overall cost by approximately half. Total Cost for Reclamation doing full Section 106 process: $20,000
  Time estimates to complete the Section 106 process: 45-60 days.

Please reference the attached Appendix E for a record of the full conversation with the local Bureau employees and a comprehensive explanation of construction activities planned for this project.

Evaluation Criteria D – Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or activity, including: Is the proposed project connected to a Reclamation project or activity? If so, how? Please consider the following:

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

- ❖ No, BDC Does not currently hold any contract like this with Reclamation.

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

❖ No, BDC does not receive Reclamation water through a Reclamation contractor or by any other contractual means.

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

❖ Water that is left in the river due to efficient water management and delivery via canal gate automation will continue down the Payette River just south of the Black Canyon Dam. The Black Canyon Dam was constructed by the Bureau in 1924 to direct water from Payette River into Emmett and Black Canyon Canals. The efficient management of water diverted by this Bureau project will allow more water to return to the Payette River, flowing into the Snake River, and eventually to the Pacific Ocean, where it will help with the survival of endangered species and species of concern such as the Snake River sockeye salmon.

Evaluation Criteria E – Presidential and DoI Priorities

Sub-criterion No. E1. Climate Change

Please describe how the project will address climate change, including:

- *Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.*

❖ Automation of gates throughout the BDC's canal system will address the impacts of climate change through the responsible and efficient usage of available water. The use of automated flume and slipmeter gates increases water conservation between 5-10% of total annual flow, allowing BDC to maintain canals within 2-4 inches of freeboard. Additionally, the automation of the canal reduces the need for individual employees to travel to the site and manage the canal. The elimination of routine vehicle travel reduces the overall carbon emissions associated with manual gate operations.

- *Does this proposed project strengthen water supply sustainability to increase resilience to climate change?*

❖ Yes, the project will increase the efficiency and sustainability of the delivery of water to agricultural providers by minimizing spillage through automation. Correctly timed releases aid in application efficiency, increasing sustainability and resiliency during times of drought brought on by climate change.

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

❖ Yes, the data generated by the automated gates will quantify water fluctuations in the canal, leading to improved long-term resource management and drought planning.

Sub-criterion No. E2. Disadvantaged or Underserved Communities

- *Will the proposed project serve or benefit a disadvantaged or historically underserved community? Benefits can include but are not limited to, public health and safety by addressing water quality, new water supplies, or economic growth opportunities.*

❖ Yes, the project will positively impact agricultural producers in the district's service area that stand to be disproportionately impacted by the effects of climate change.

- *Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool, available online at http://screeningtool.geoplatform.gov, to identify any disadvantaged communities that will benefit from your project.*

❖ Communities found to be disadvantaged via the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool within beneficial proximity to this project include the majority of communities within the area surrounding the proposed project location. The surrounding tracts, including tract 16045960200, and tract 16075960100, are identified as disadvantaged. These tracts are located within Gem County, ID, with populations ranging from just over 5,000 to just under 7,000.

- *If applicable, describe how the project benefits those disadvantaged or underserved communities identified using the tool. For example, does the project increase reliability for water supplies, improve water quality, provide economic growth opportunities, improve or expand public access to natural areas or recreation, or provide other benefits in a disadvantaged or underserved community?*

❖ The proposed project is beneficial to the above-listed disadvantaged communities by contributing to more reliable and consistent management of water supplies, more predictable and dependable water flow downstream, and a myriad of benefits, as seen from the availability of consistent and sustainable water flow and management. Sustainable water sources play a crucial role in promoting health, recreation, education, economic development, and overall well-being in disadvantaged communities. By addressing water-related challenges via canal automation, communities like these can build a foundation for long-term resilience and prosperity.

E.1.5.3. Sub-criterion No. E.3. Tribal Benefits

Points will be awarded based on the extent to which the Project will honor the Federal government's commitments to Tribal Nations.

- *Does the proposed project directly serve and/or benefit a Tribe? Will the project improve water management for a Tribe?*

❖ No, this project does not impact, benefit, or directly serve a tribal entity.

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

❖ No, this project does not provide any known benefits or support for Reclamation's Tribal trust responsibilities or Reclamation activity with a tribe.

- *Does the proposed project support Tribal resilience to climate change and drought impacts or provide other Tribal benefits, such as improved public health and safety by addressing water quality, new water supplies, or economic growth opportunities?*

❖ No, this project does not provide any known benefits for tribes in the area.

Project Budget –

Funding Plan and Letters of Commitment

Please identify the sources of the non-Federal cost-share contribution for the project, including:

- *Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)*
  - ❖ A monetary portion over the project budget narrative, $10,100.00, will be held in a separate checking account to cover any cost outside the budget narrative. This will be covered by contributions from Bilbrey Ditch Company Funds. This will be completed by Bilbrey from budgeting in their yearly expenses for FY 2024/2025 via revenue from taxes on district services.
- *Any costs that will be contributed by the applicant*
  - ❖ Bilbrey Ditch Company is expecting to purchase Liability Insurance for grant funding.
- *Any third-party in-kind costs (i.e., goods and services provided by a third party)*
  - ❖ None anticipated.
- *Any cash requested or received from other non-Federal entities*
  - ❖ None anticipated.
- *Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied*
  - ❖ BDC has submitted an application for matching funding through Water District 65 Cost Share funding program requesting $28,360.24 in assistance for this project. BDC is confident that the matching funding request will be successful. The Water District 65 Cost Share funding program is expected in March of 2024 for the 2025 cost share period.

Budget Proposal

Table 1.—Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. IWRB Aging Infrastructure Grant	$40,172.32
2. Water District 65 Cost Share Program	$28,360.24
Non-Federal Subtotal	$68,532.56

REQESTED RECLAMATION FUNDING	$68,532.56

Table 2. —Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$68,532.56
Costs to be paid by the applicant	$0
Value of third-party contributions	$68,532.56
TOTAL PROJECT COST	$137,065.12

Table 3. —Budget Proposal Canal Automation

Budget Narrative: There are four majors components to this project. The Bilbrey Ditch Company's labor is described in Block A. The first equipment bid from Rubicon Water is in Block D. The materials and labor bid from Shippy Brothers is in Block F. The final component is the in-kind support from the Bilbrey Ditch Company members described in Block H.

Budget Proposal-Canal Automation Project-Bilbrey Ditch Company, Limited				
Budget item Description	$/unit	Unit	QTY	Total Cost
A. Personnel				
Project Manager	$ 36.25	hr	100	$ 3,625.00
Office Manager	$ 23.85	hr	20	$ 477.00
Subtotal-A. Wages				$ 4,102.00
B. Fringe Benefits				
Fringe Benefits	$ -	N/A	N/A	$ -
Subtotal-B Fringe Benefits				$ -
C. Travel				
Travel	$ -	N/A	N/A	$ -
Subtotal-C. Travel				$ -
D. Equipment-Rubicon Bid				
SlipMeter / SMB-750-3000-C	$ 22,830.00	ea	1	$ 22,830.00
FlumeGate / FGB-0626-0674	$ 21,070.00	ea	1	$ 21,070.00
Piko Meter / PM-450-1400	$ 12,450.00	ea	1	$ 12,450.00
Supervision & Commissioning	$ 1,750.00	ea	3	$ 5,250.00
SiteConnect Live Software starter kit	$ 1,000.00	ea	3	$ 3,000.00
SiteConnect Live Software Subscription fee	$ 500.00	ea	3	$ 1,500.00
Level Tuning Analysis	$ 1,500.00	ea	1	$ 1,500.00
Taxes on equipment	$ 6,863.63	ea	1	$ 6,863.63
Shipping & Handling	$ 3,000.00	ea	1	$ 3,000.00
Subtotal-D. Equipment-Rubicon Bid				$ 77,463.63
E. Supplies				
Supplies	$ -	N/A	N/A	$ -

Subtotal-E. Supplies				$ -
F. Contractual- Shippy Brothers Site 1				
30" HDPE pipe	$ 104.17	ln	100	$ 10,417.00
30" HDPE pipe Shipping & handling	$ 2,000.00	ea	1	$ 2,583.00
Pipe Bedding Sand	$ 11.00	ea/ton	60	$ 660.00
Sand Hauling	$ 120.00	ea	5	$ 600.00
Bedding Rock/Gravel	$ 16.00	ea	12	$ 192.00
Rock Hauling	$ 120.00	ea	1	$ 120.00
Back Fill Dirt	$ 5.00	ea	60	$ 300.00
Back Fill Dirt Hauling	$ 120.00	ea	5	$ 600.00
Excavator Cat 330	$ 200.00	ea	25	$ 5,000.00
Labor	$ 60.00	ea	40	$ 2,400.00
Trash Debris Removal	$ 500.00	ea	2	$ 1,000.00
HD Concrete Construction	$ 10,115.00	ea	1	$ 10,115.00
Rain For Rent (Dewatering)	$ 2,196.62	ea	1	$ 2,196.62
A-Core Concrete Cutting	$ 687.50	ea	1	$ 687.50
Mini Excavator JD 60G	$ 120.00	hr	5	$ 600.00
Incidental/Contingencies	$ 3,747.11	ea	1	3747.11
Subtotal- F. Contractual- Shippy Brothers Site 1				$ 41,218.23
F. Contractual- Shippy Brothers Site 2				
Removal of old devices	$ 120.00	ea	6	$ 720.00
Install of new devices	$ 120.00	ea	6	$ 720.00
Mini Excavator JD 60G	$ 120.00	ea	5	$ 600.00
Labor	$ 60.00	ea	16	$ 960.00
Incidental/Contingencies	$ 300.00	ea	1	$ 300.00
Subtotal -F. Contractual- Shippy Brothers Site 2				$ 3,300.00
G. Construction				
Construction	$ -	N/A	N/A	$ -
Subtotal-G. Construction				$ -
H. Environmental and Regulatory Costs (In-kind contributions)				
Cultural Impact Assessment	$ 5,000.00	ea	1	$ 5,000.00
Subtotal-H. Environmental and Regulatory Costs (In-kind contributions)				$ 5,000.00
H. Other (In-kind contributions)				
Bilbrey Ditch Board members labor	$ 36.25	hr	165	$ 5,981.25
Subtotal-H. Other (In-kind contributions)				$ 5,981.25
I. Total Direct Costs				
Subtotal-I. Total Direct Costs				$ 137,065.11
J. Indirect Costs				
Indirect Costs	$ -	N/A	N/A	$ -
Subtotal-J. Indirect Costs				$ -
Total				$ 137,065.11

Budget Narrative

Salaries and Wages

The Project Manager will be Matthew Housley, as BDC will not utilize staff for this work, but contract all necessary work for this project through Shippy Brothers Construction. BDC does not possess enough staff to utilize for this project.

Fringe Benefits

These benefits are included in any labor rates shown in Table 2. They would include the applicant's costs for health insurance, retirement, deferred compensation, vacation leave accruals, sick leave accruals, clothing allowances, and employee taxes (FICA and Labor and Industries).

Travel

There is no travel authorized for this project nor included in the budget proposal.

Equipment

All equipment to be used on this project is owned by Shippy Brothers Construction. Therefore, there is no line item for this section, as this cost is already accounted for in the contractual/construction section.

Materials and Supplies

The materials and supplies listed in the budget proposal account for materials related to the gate site prep, not being covered by the contracted construction company.

Other Expenses

The $4,047.11 listed as miscellaneous is for unforeseen expenses that might arise throughout the contracted construction process. Incidentals include items such as small electrical components, wire, freight, or tools that might break.

Indirect Costs

The indirect cost represents Idaho state and local sales taxes and staff time to plan for the project, prepare reports, and track project expenses. These count as free hours in-kind contributions in the amount of $12,844.88 based on the Project Manager's normal rate of pay. The clerical staff hourly rate shown in the budget proposal includes the fringe benefits.

Environmental and Regulatory Compliance Costs

The amount shown in these line items includes an estimated cost for cultural review by a consultant and an amount anticipated to be expended by the USBR during its environmental review process. The BoR has given an estimate that if this is indeed a categorically excluded action with no extraordinary circumstances, this would require the completion of a Categorical Exclusion Checklist by Reclamation, costing approximately $500 and taking a week to complete. Total Cost quoted to BDC staff from Reclamation staff for Reclamation doing the full Section 106 process: $20,000. Time estimates to complete the Section 106 process: 45-60 days

Please reference the attached Appendix E for a record of the full conversation with the local Bureau employees and a comprehensive explanation of construction activities planned for this project.

Contractual

Contractual costs listed in the budget account for all construction and gate installation work that will take place for this project, as all construction and installation work has been contracted out to third-party organizations as listed in the budget.

Third-Party In-Kind Contributions

The district does not anticipate any contributions matching this description.

Environmental & Cultural Resource Compliance

Please answer the questions from Section H.1. Environmental and Cultural Resource Considerations in this section.

- *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.*
    - ❖ No, the project will not have any of these effects. There will be limited dust from concrete cutting in the initial phase, and it is only projected to last for up to 4 hours per site for one day.
- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*
    - ❖ The applicant is not aware of any such species within the proposed project areas.
- *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.

- ❖ No. There are no wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction.

- *When was the water delivery system constructed?*
  - ❖ The Bilbrey Ditch Company constructed this Canal in 1894 as part of efforts to settle the area. The Canal diverts water from the Payette River approximately 2.5 miles west of Emmett, ID, and is co-located with the headgates for the Enterprise Canal. There have not been any upgrades to the canal's infrastructure except for a simple SCADA automation of the headgate in 1993. This canal is integral to ensuring the agricultural industry's viability and the stakeholders' interests in the Payette River Basin.
- *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 project will add automatic gates to existing structures. These existing structures were first constructed in 1993. The construction dates are estimated to vary between 1993 and 2003.
- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*
  - ❖ No, the canal system is not currently registered on any historic registry.
- *Are there any known archeological sites in the proposed project area?*
  - ❖ *No, there are no known archeological sites within the proposed project area.*
- *Will the proposed project have a disproportionately high and adverse effect on low-income or minority populations?*
  - ❖ No, the project will not have any disproportionately high adverse effects on low-income or minority populations.
- *Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*
  - ❖ No, the project will not contribute to any of the above-mentioned impacts on tribal sacred sites or tribal lands.
- *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*
  - ❖ *No, the proposed project will not contribute to this.*

Required Permits and Approvals

N/A. There are no required permits because the work will be done within the current Applicant's facilities and rights-of-way.

Official Resolution

Bilbrey Ditch Company Limited
PO Box 819 Emmett, ID 83617
208-671-6990
BilbreyDitchCompany@Gmail.com

Resolution Meeting 2/3/2024 11:45 AM

Present: Chris Lundquist, Mike Byrne, Jim Reininger, Matthew Housley

Motion made by: Chris Lundquist

That the Bilbrey Ditch Company, Limited, seeks to automate the Canal operations.

We Bilbrey Ditch Company, Limited, seek funding opportunities from the following entities.

Idaho Water Resources Board, Aging infrastructure Grant for $40,172.32

Water District 65 Cost Share Program for $28,360.24.

Bureau of Reclamation, WaterSmart, Small-Scale Water Efficiency Projects for Fiscal Year 2024 and Fiscal year 2025 for $68,532.56.

Bilbrey Ditch Company, Limited have obtained funding from the Idaho Water Resources Board, Aging infrastructure Grant in the amount of $40,172.32.

Bilbrey Ditch Company, Limited has Submitted to Water District 65 Cost Share Program for $28,360.24. With an expected decision in 2024.

This Resolution approves the submission for grant application opportunities for the automation of Canal operations.

Seconded by: Mike Byrne

All Present vote AYE: Motion passes

Meeting Adjourn 11:55 AM

Quotation

Date: October 9, 2023

To: Matthew Housley
Company: Bilbrey Ditch Company
Address: PO Box 819
Emmett, ID 83617 -0819
Phone: (208) 870-5508
Email: matsumhousley@msn.com
Quote #: Q501770
Project: Bilbrey Canal Automation
Valid For: 60 days

Shipping terms: FOB Modesto, CA
Billing terms: Net 30 days (see Payment Terms for details)
Prepared by: Michael Bromund, Account Manager
Phone: (509) 481-0571
Email: Michael.Bromund@rubiconwater.com

Rubicon Water
Rubicon Systems America, Inc.

Fort Collins
1501 S. Lemay Avenue
Suite 101
Fort Collins, CO 80524
toll free 1-877-440-6080
phone 970-482-3200
fax 970-482-3222
email inquiry@rubiconwater.com

Modesto
2318 Tenaya Drive
Modesto, CA 95354

Imperial
415 W Aten Road
Imperial, CA 92251

www.rubiconwater.com

Appendices

Appendix A – Rubicon Quote and Product Selection Guide

Project Description:

The Bilbrey Ditch Company requested pricing and availability of a solution to automate the canal's headgate (43°52'10.4"N 116°32'52.9"W) and split location (43°51'53.13"N, 116°34'42.95"W). The recommended solution automates the site and reduces variability in the canal downstream. This represents a high-end cost solution which includes a replacement for the headgate and floating debris boom to reduce equipment damage and labor at the site. The FlumeGate / PikoMeter combination recommended at the split location is the best recommendation to maintain the water level in the canal at that location. We will continue to refine the solution to deliver the best value for the Company.

Pricing Summary:

Qty	Product	Product Model	Description	Unit Price (US$)	Total (US$)
1	SlipMeter	SMB-750-3000-C	Rubicon SlipMeter, equipped with a 30" x 30" meter box/gate and a maximum wall mounting height of 10'. 11.25° sensor pattern. Minimum flow of 1.7 CFS, maximum flow of 39 CFS. Equipped with partial-full level sensor. Fully integrated measurement solution.	$22,830	$22,830
1	FlumeGate	FGB-0626-0674	Rubicon FlumeGate, designed for a nominal install width of 30" and a fully closed checking height of 28". Maximum submerged flow is 13 CFS, max freeflow is 18 CFS. Fully integrated solution.	$21,070	$21,070
1	PikoMeter	PM-450-1400	Rubicon PikoMeter, equipped with an 18" diameter meter tube/gate and a maximum wall mounting height of 4.5'. Minimum flow of 0.2 CFS, maximum flow	$12,450	$12,450

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			of 11.2 CFS. Equipped with partial-full level sensor. Fully integrated solution.		
3	Service	Supervision & Commissioning	Supervision & Commissioning Per Gate	$1,750	$5,250
3	Software	SiteConnect Live	SiteConnect Live Starter Kit (includes a cellular modem, antenna, cabling), as well as account and site configuration on Rubicon's cloud-based SCADA system. One-time fee.	$1,000	$3,000
3	Software	SiteConnect Live	SiteConnect Live, Control Site - Annual subscription fee, per site. Includes cloud hosting and cellular service.	$500	$1,500
1	Service	Level Tuning Analysis	Level Tuning Analysis (per pool)	$1,500	$1,500
			Total*		**$67,600**
			*Excluding Taxes		

SlipMeter Description:

Each SlipMeter includes the following items:

- The SlipMeter is a combination automated undershot control gate and precision flow meter that measures fully submerged flows (and partial-full flow in partial-full models) and mounts directly to a headwall with no straight pipe requirements. It is provided as a complete turnkey installation.
- Each SlipMeter comes equipped with a separate standalone control pedestal which includes a display and keypad, solar panel power system and a 16 ft mast for mounting of communication antenna; RTUs, radio and antenna by others.
- The SlipMeter comes complete with an integrated power supply comprising an 85W solar panel, a solar regulator, and a 12-volt deep cycling battery pack. Note, the batteries must be removed from the meter and charged if the gates are not installed within four weeks of delivery.
- The SlipMeter comes equipped with an internal and external frame c/w stainless steel anchors, epoxy capsules, and polyurethane sealant.
- Standard Rubicon local controller software, including automatic local/remote flow control mode, local/remote gate position mode, and local manual mode.

FlumeGate® Description:

Each FlumeGate includes the following items:

- The FlumeGate is a combination automated overshot control gate and flow measurement device that mounts in new or existing structures, and arrives as a complete turnkey installation.
- Each FlumeGate comes equipped with a control pedestal which includes a standard processor and keypad for automation (for remote mounting), solar panel power system and a 16 ft mast for mounting
  of a communication antenna; one aluminum external mounting frame, c/w stainless steel anchors, Hilti epoxy and SIKA sealant.
- Included is one (or more) 12-volt DC deep cycling battery pack; each pack consists of two or more batteries. Note, the batteries must be removed from the meter and charged if the gates are not installed within four weeks of delivery;
- One set of primary ultrasonic water level sensors (long range);
- Standard Rubicon local flow and level software (level control requires tuning, added charge).
- Options include an operator walkway to span the gate, attached to the top beam, with access from one or both sides.

PikoMeter Description:

Each PikoMeter includes the following items:

- The PikoMeter is a combination precision flow meter and automated control gate that measures fully submerged flows and mounts directly to a headwall with no straight pipe requirements, and arrives as a complete turnkey installation.
- Each PikoMeter comes equipped with a separate standalone control pedestal which includes a display and keypad, solar panel power system and a 16 ft mast for mounting of communication antenna.

- The PikoMeter comes complete with an integrated power supply comprising an 85W solar panel, a solar regulator, and a 48Ah 12-volt deep cycling battery pack. Note, the batteries must be removed from the meter and charged if the gates are not installed within four weeks of delivery.
- The PikoMeter comes equipped with an internal and external frame c/w stainless steel anchors, Hilti capsules and SIKA sealant.
- Standard Rubicon local controller software, including automatic flow and gate position modes.

SITEConnect Live Description:

Rubicon's SITEConnect Live is a cloud-based SCADA system that gives users full remote control of their sites. Data is transmitted through AT&T's cellular network to both send commands to the sites as well as gather all data, including flows, levels, alarms etc. Included in SCADAConnect Live:

- Full remote monitoring and control of sites. Note access can be varied depending on password for different officers of the irrigation district (full control versus monitoring only).
- Alarming functions can be sent through email or text.
- All data pertinent to each site can be viewed on the site's historian or downloaded in .CSV format for storage or reporting.

Installation Labor:

Services during commissioning include:

- Site visits by a Rubicon certified Field Technician. The visits will involve mounting of the external frame, supervising the lifting of the gate into the frame, commissioning and training in the operation and maintenance of the meter.

Exclusions:

- Installation Labor to be completed by third party/client for field installation of the meter gate.
- Civil works to structures to fit above gate.
- Supply and operation of crane for install of meter gate.
- Dewatering of site for installation:
    - It is expected that the site will be dry and clean for installation of external frames. If the Rubicon Technician finds that there is water on the site the day of the scheduled external frame installation, the client will pay for the additional day of labor lost.

Important Note Regarding Gate (Radio) Connectivity:

Automated devices are designed to provide continuous operation without human intervention. However, remote connectivity is a feature available on all Rubicon gates and meters that enhances the manageability of the device, giving the operations team 24/7 live access in order to better manage irrigation water. As is the case with any automated system, electro-mechanical systems can be subject to upsets beyond their control that require human intervention. For this reason, Rubicon offers SCADAConnect Live™ as a means for cost-effective remote monitoring and control in order to ensure proper canal operations, and prompt notification in the event of concerning situations. If you decide not to take-up Rubicon's SCADA offering, we still highly recommend the

implementation of a means of remote monitoring to ensure adversity can be met swiftly before serious problems arise.

Appendix B – Comprehensive State Water Plan: Payette River Basin

Comprehensive State Water Plan: Payette River Basin | February 5, 1999 (idaho.gov)

Appendix C – Idaho State Water Plan 2012

Idaho State Water Plan | November 2012 | idwr.idaho.gov

Appendix D- Water District 65 Letter of Support

January 03, 2023

Bureau of Reclamation
Water Resources and Planning Office
PO Box 25007, MC 86-63000
Denver, CO 80225-0007

RE: Letter of Support for the WaterSMART Small-Scale Water Efficiency Project For Fiscal Year 2024 and Fiscal Year 2025: Bilbrey Ditch Company, Limited Canal Automation Project

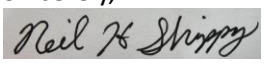
I am writing this letter to express my support for the grant application submitted by the Bilbrey Ditch Company, Limited (Bilbrey), as referenced above. As Water District 65, with a direct connection to the Bilbrey, we recognize the significant value in Bilbrey's pursuit of water management improvements that align with the universal goal of responsible water stewardship.

The commitment exhibited by Bilbrey to continuously integrate advancing technology into their water management system is indeed commendable and demonstrates their forward-thinking approach. The allocation of the requested funds to enhance water measurement accuracy will empower Bilbrey with critical data essential for informed decision-making and the optimal allocation of resources. This advancement in accuracy will inevitably contribute to the identification of areas for improvement and the implementation of measures to effectively mitigate water wastage.

Water District 65 fully endorses the WaterSMART Small-Scale Water Efficiency Project For Fiscal Year 2024 and Fiscal Year 2025 application by the Bilbrey Ditch Company. This project, designed to elevate water allocation management, aligns seamlessly with Water District 65 goal of efficient and sustainable utilization of water supplies.

Should you have any queries or require further information, please do not hesitate to contact me at 208-642-4465 or neil.waterdistrict65@gmail.com Thank you for considering this letter of support, and we look forward to witnessing the positive impacts of this endeavor on responsible water management practices.

Sincerely,



Neil Shippy

Water District 65 Watermaster