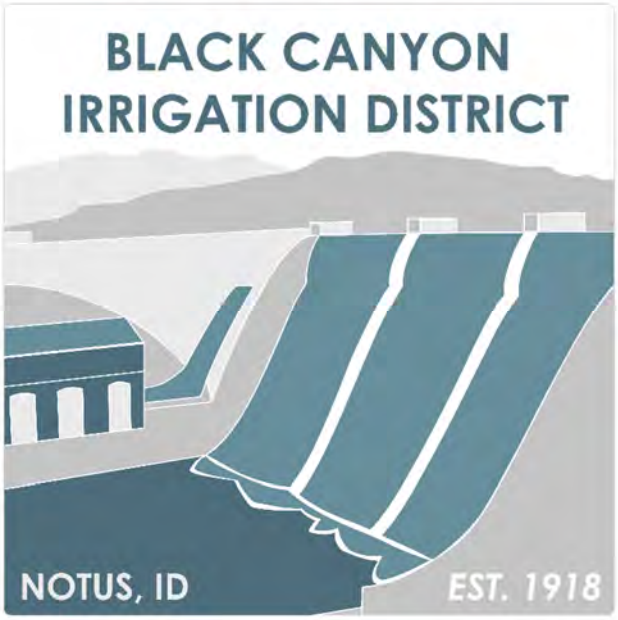

Black Canyon Irrigation District - Canal Automation Project Design Narrative

WaterSMART: Small-Scale Water Efficiency Grants FY2025
No. R24AS00059

Applicant: Black Canyon Irrigation District
Project Manager: Mike Meyers
474 Elgin Avenue, Notus, ID 83656
mikem@blackcanyonirrigation.com
208.941.8026 (Cell)
208.459.4141 (Office)

January 13, 2025

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Section 1: Mandatory Federal Forms

SF-424: Application for Federal Assistance
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Section 2: Technical Proposal

Executive Summary

Date: January 13, 2024
Applicant: Black Canyon Irrigation District
Location: Notus, Idaho (Canyon County)

Black Canyon Irrigation District, located in Notus, Idaho, qualifies as a Category "A" applicant in accordance with the requirements outlined in Section C.1 in the Notice of Funding Opportunity Announcement for the WaterSMART – Small-Scale Water Efficiency Grants.

Project Scope: Black Canyon Irrigation District (District) provides irrigation water to both agricultural growers and domestic users across approximately 60,000 acres of land spanning three counties in Idaho's Treasure Valley. The District is actively working to install automatic headgates, canal checks, and flow sensors in several locations within the District's second unit. Currently, most headgates and canal checks are manually operated without any real-time data to verify water level and flow. The goal of this project is to obtain more control of the canal system through automation and real-time monitoring. This project will increase the District's ability to manage and conserve irrigation water throughout its facilities, which is the District's top priority as drought conditions become more frequent and water demands continue to increase.

Project Length and Estimated Completion Date: The installation of all automation and sensing equipment for the Black Canyon Irrigation District Canal Automation Project is estimated to be complete within 2 years of funding. With an anticipated award date of October 31, 2025, and installation completion by June of 2027.

Federal Facilities: The proposed project is located within the District's second unit, which is owned by the U.S. Bureau of Reclamation (Reclamation) and operated by the District.

Project Location

The District is composed of two separate units: the first unit was established in 1921 and covers an area of 6,900 acres; and the second unit was constructed in 1940 and encompasses an area of 53,200 acres. This project will be focused within the boundaries of the District's second unit which is supplied by the Black Canyon Main Canal (Main Canal) (**Figure 1**). The Main Canal is diverted from the Payette River at the top of the Black Canyon Dam, which is northeast of Emmett, Idaho in Gem County. The Main Canal also supplies 5,100 acres to Emmett Irrigation District patrons, in addition to feeding the District's second unit.

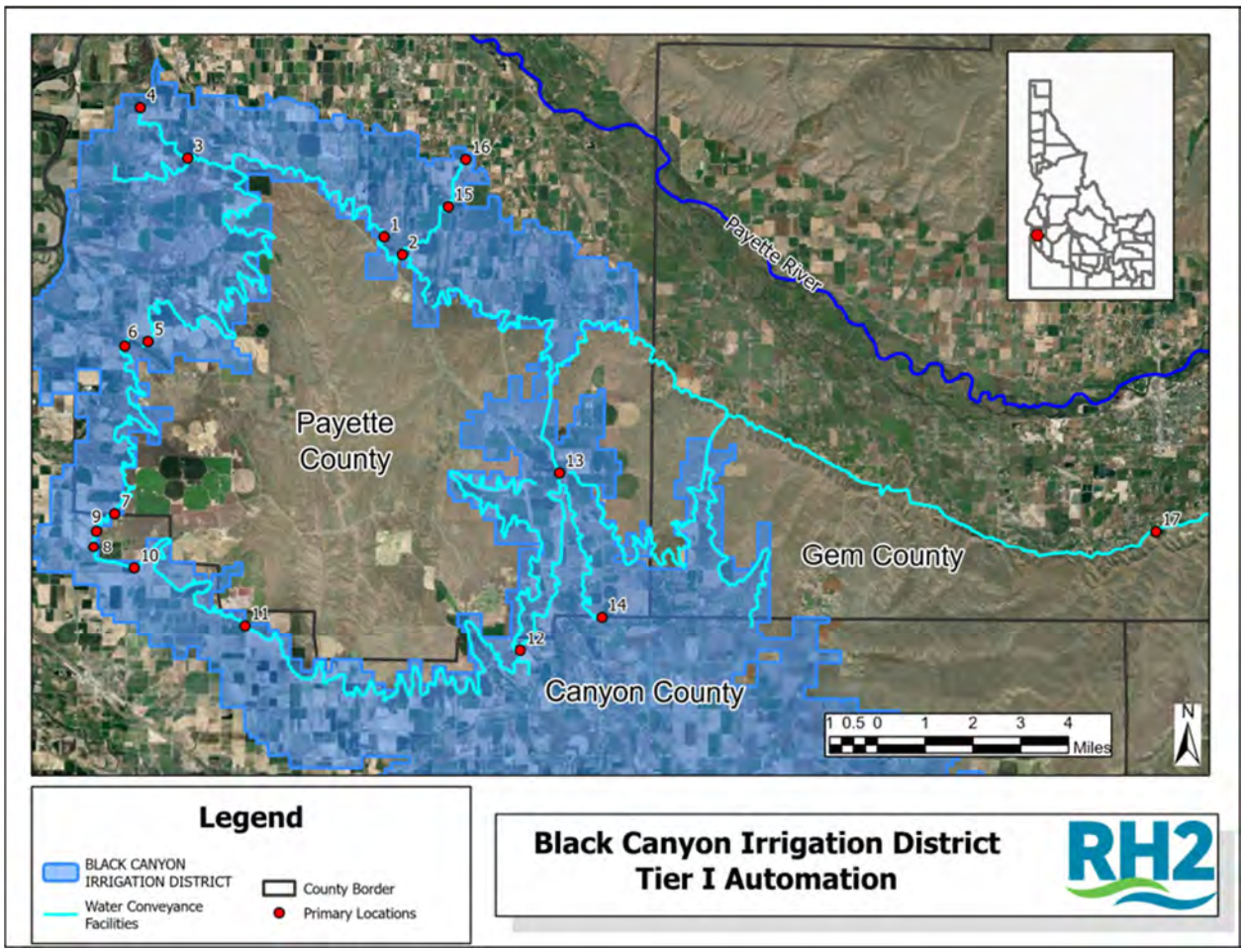


Figure 1: Project Location for Black Canyon Main Canal Automation Project

Technical Project Description

In pursuit of enhancing water management practices, the District plans to automate the canal headgates and checks and install sensors along the District's Main, A-line, D-Line, C-Line, and H-Line Canals. This District has identified 17 locations (Tier I) with the largest water supply demands that currently do not have automation. (See **Appendix A** for the list of the 17 locations – Tier I.) The District will use the automation data and control to gain insights into the extent of surface water consumed by external users, optimize delivery processes to reduce water waste, and establish formalized control over this valuable resource. If overall costs come in under budget the District has already identified other locations, referred to as Tier II locations (**Appendix A**), that need automation or sensing equipment as well.

Photo 1 – District Installed Automation Site

The general concept is to retrofit manual headgates with a Rotork actuator that receives a signal from a local controller. The local controller will also have the capacity to record data from a pressure transducer that communicates the water level to the controller. The controller will then modulate the height of the headgate to add or reduce water flow for that portion of the canal. When automating canal checks is required, the District will deploy an overshot gate, the same principle applies, as a local controller and sensor identify the water level then modulate the check height to maintain the desired water level in the canal. Some sites will only be used for flow sensing and in these cases only be equipped with a pressure transducer. The District has previously installed this type of equipment on other portions of the District's canals with great success. See **Appendix B** for installation schematics.

In pursuit of funding from the Small-Scale Water Efficiency Grant (SSWEG) the District plans to fully install 17 sites (Tier I) with automation or sensing equipment. The successful execution of

the proposed project involves two components: 1) construction material and equipment procurement; and 2) equipment installation.

Phase 1 is to procure industry standard equipment tailored to meet delivery requirements through the competitive bid process. Each site requires a combination of an automated headgate, automated overshot gate, or pressure transducer to reliably control the water supply.

Phase 2 will entail installing the actuators, headgates, overshot gates, sensors, and local control box at each specified location along the District canals. The project schedule currently has this work being done during irrigation offseason for ease of installation, however, most of these efforts can be accomplished with water in the canal.

E.1.1. Evaluation Criterion 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.

Will the project result in more efficient management of the water supply?

Yes, this automation project will lead to more efficient water supply management by giving the District accurate data and real-time control of the canal system.

Where any conserved water as a result of the project will go and how it will be used?

Conserved water resulting from these project improvements is planned to be used throughout the season where system deliveries currently cannot be made due to lack of water. Water savings may also be left in storage to augment periods of drought.

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 has caused water delivery failure due to lack of control, failing to provide customers their full water rights. At multiple sites, water levels fluctuate during the day because the current gates are manually operated and unable to be adjusted remotely. This has led to stakeholders not receiving water due to upstream supply problems. Additionally, better control and steady use of water throughout the season will allow more efficient use by more customers and reduce waste through the entire season, helping stretch and already tight water budget.

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

Automating the proposed sites will help mitigate the chance of lawsuits and reduce the demand on District staff for daily water calls. The District has limited employees to respond to water emergencies; canal automation will allow the District to remotely adjust gates when needed based on real-time feedback and canal flow rates. More efficient control and less waste will reduce the potential lawsuits.

What are the consequences of not making the improvements?

The consequences of not making the proposed automation improvements include limiting the District's ability to accurately measure water delivery, increase the chances of flooding (waste), continue to supply insufficient water during periods of drought, and increase the need to water ration over the course of the water season. Without automation and data collection, the canal system will continue to operate inefficiently and ineffectively.

Are customer water restrictions currently required?

Stakeholders currently face water restrictions due to the District's real-time water supply lack of control. The District has limited employees to respond to water emergencies, and the lack of canal automation creates opportunities for oversupply, spillage, and flooding throughout the year. This leads to an overall reduction of the water supply late in the season, limits the District from potential revenue, and will continue to hinder the District's ability to provide reliant water supply to stakeholders over the course of the water season.

Other significant concerns that support the need for the project.

The proposed project sections experience varying drought conditions, flooding conditions, and water diversions. This leads to decreased water availability during the peak water delivery seasons for agricultural, industrial, 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 sections. Due to uncertain and varied amounts of precipitation and water availability, increased demand on water systems, and the need for precise delivery and an updated water delivery interface, the District 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. Consider:*

Will the project improve broader water supply reliability at sub-basin or basin scale?

The project improvements are expected to benefit the District and its stakeholders by providing real-time monitoring and control. These improvements will mitigate the negative impact of drought and demand on water supplies from the local water basin. This leads to increased water supply throughout a season and predictability over multiple seasons once implemented.

Will the proposed project increase collaboration and information sharing among water managers in the region? Please explain.

The proposed project is expected to increase collaboration and information sharing among water managers because it creates the ability to monitor and share water flow metrics. Managers can work together using data to develop better water management strategies and exchange trade knowledge to develop more efficient water supply systems.

Is the project in an area that is experiencing, or recently experienced, drought or water scarcity? Will the project help address drought conditions at the sub-basin or basin scale? Please explain.

The proposed project sections experience varying drought conditions, flooding conditions, and water diversions. This leads to decreased water availability during peak water delivery seasons

for agricultural, industrial, 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 from the local water basin. This can lead to surplus water stores that can be discharged back into the Payette River and to prepare the water cycle for the next season.

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.

The automation project will benefit local wildlife by reducing flooding and excess spilling and also provides for more efficient use of water throughout the year. Efficient use of water helps in keeping more water in the Payette River which ultimately flows into the Snake River. Automation would improve the canal operation efficiency, which would result in greater water storage throughout the season.

Will the proposed project positively impact/benefit various sectors and economies within the applicable geographic area (e.g., impacts to agriculture, environment, recreation, and tourism)? Please explain.

The automation project would impact the surrounding public and private sectors positively by increasing the available water supply today and for decades to come. With a more reliable water supply, local agriculture can safely maintain their current footprint in the community. Automation also provides fair and accurate allocation of the water supply, which prevents intentional or unintentional water diversions from stakeholders that would put other stakeholders' water entitlement at risk.

Will the project complement work being done in coordination with NRCS in the area (e.g, the area with a direct connection to the districts water supply)? Please explain.

To the District's knowledge there are not currently any Natural Resources Conservation Service projects in the area for the automation project to complement.

E.1.2 Evaluation Criterion B. Planning Efforts Supporting the Project

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

The proposed project is supported by the objectives laid out in the 2012 *Idaho State Water Plan*. The plan identifies Water Management, "Encourage integrated, coordinated, and adaptable water resource management and the prudent stewardship of water resources" as a primary objective. Automation and real-time monitoring of the Main Canal will directly address this objective while meeting other objectives listed in the plan such as 1H – Quantification and Measurement of Water Resources and 2A – Water Use Efficiency.

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 plan was created by the State of Idaho, considering stakeholders residing within the State of Idaho and entities affected by water usage, savings, and efficiency. Black Canyon Irrigation District is 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?

While this automation project is not specifically named in the planning efforts, this type of project is in line with advancing the overall goals of the 2012 *Idaho State Water Plan*.

Is this type of project identified in the planning effort?

Yes, this type of project is specified 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 proposed project meets goals set by the 2012 *Idaho State Water Plan* by improving and upgrading irrigation infrastructure for better water management. Additionally, this project will retain available water resources for stakeholder use and local wildlife. This proposed project seeks to contribute to those objectives while also improving the District's operations with more efficient use of time and data management. These proposed benefits to the District operations, specifically, objectives 1H – Quantification and Measurement of Water Resources and 2A – Water Use Efficiency will be met with these proposed improvements to the District's system.

Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to the other potential projects/measures.

The proposed automation project was determined to have the greatest cost-benefit ratio in modernizing the canal's control system. The more operational control the District can gain through automation, the more other resources are freed up for essential work like canal maintenance and other District projects. Other projects like canal lining, canal cleaning, etc. were identified as being too expensive for this grant or having less transformational effects on the efficiency of the canal system.

E.1.3 Evaluation Criterion 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.

Table 1: Summary of Project Schedule

1	Funding Applications Agreements	**3**	Nov 2024 – Jan 2025 **Not included in estimate**
2	Anticipated Notice of Award	**1**	Oct 2025

5	Material Procurement	**3**	Nov 2025 – Jan 2026
6	Installation of Actuators, Sensors and Overshoot Gates – Tier 1	**14**	Feb 2026 – March 2027
7	Automation Startup/Calibration	**3**	April 2027 – June 2027
ESTIMATED TOTAL PROJECT (MONTHS)		**21**	

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

No additional permits or applications are assumed to be necessary to complete this work. A $5,000 placeholder has been included in the cost estimate in the event that NEPA compliance is required to permit the project.

Identify and describe any engineering or design work performed specifically in support for 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 District has installed and retrofitted old sensors, headgates, and checks with modern equipment with success. No additional engineering or design is anticipated.

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

After installing the new sensors, headgates, and checks, the District will need to calibrate and ensure remote control of the equipment from the District office in Notus, Idaho.

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 time frame for obtaining such permission.

The District has full access to the locations listed in 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.

The applicant has not contacted the local Reclamation office to discuss the potential environmental and cultural resource compliance requirements. The District assumes that the local Reclamation office will require some form of compliance requirements and therefore has been accounted for in the project budget as a separate line item. This compliance request will be handled prior to installation by a subconsultant as necessary.

E.1.4 Evaluation Criterion D – Nexus to Reclamation

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?

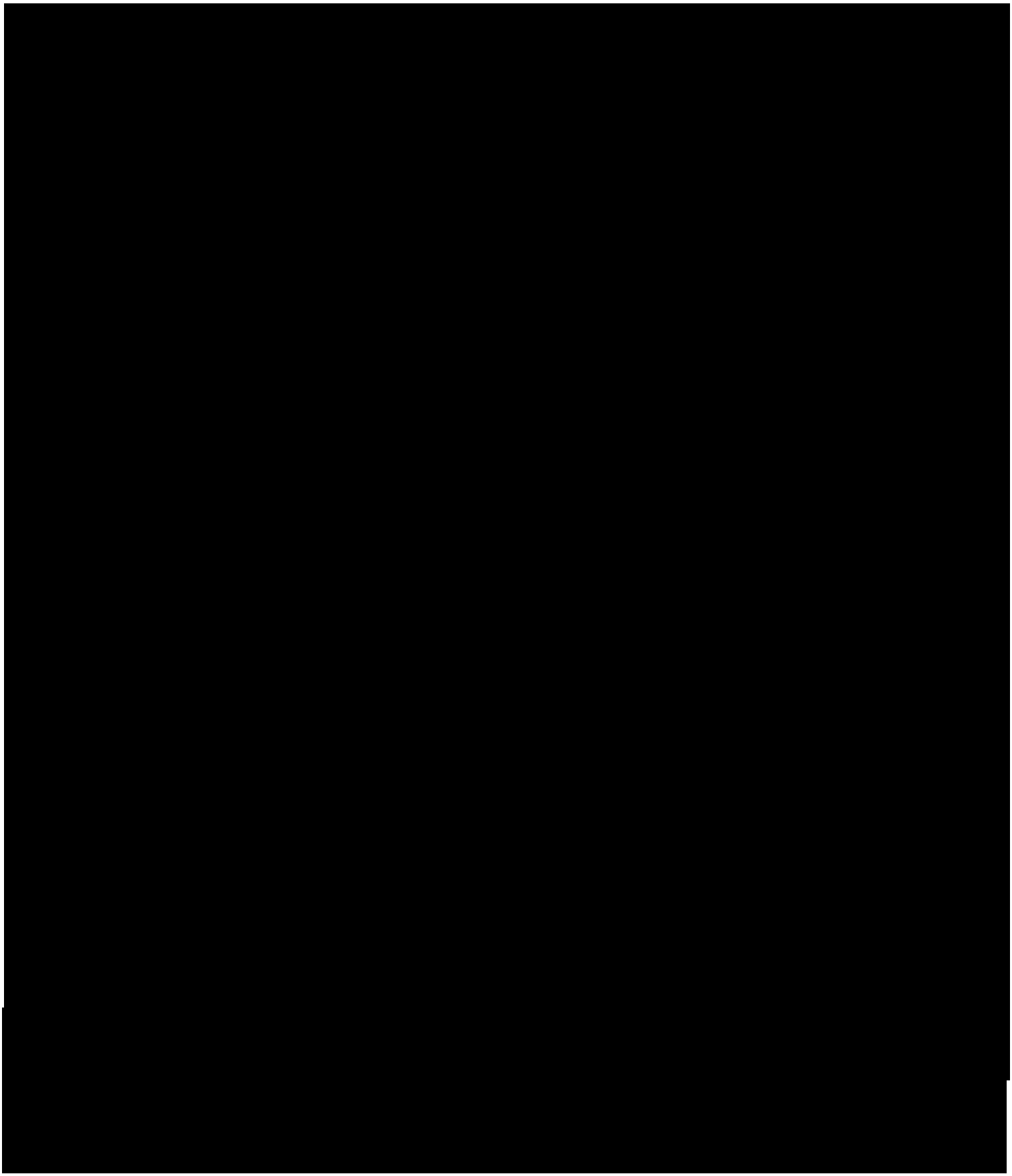
The District is under a repayment contract with Reclamation.

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

The District is a Reclamation contractor. Not applicable.

Will the proposed work benefit a Reclamation Project area or activity?

The proposed project will indirectly benefit any Reclamation project area or activity by efficiently managing the water supply. With reduced water loss due to poor management, more water can be maintained in local rivers or provided to local communities to meet public needs.



Section 3: Project Budget

Non-Federal and Federal Funding Sources

Table 1: Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
1. Black Canyon Irrigation District	$125,250
REQUESTED RECLAMATION FUNDING	**$124,000**

Budget Breakdown

Table 2: Summary of Budget Narrative

6. BUDGET OBJECT CATEGORY	Total Cost	Federal Estimated Amount	Non-Federal Estimated Amount
a. Personnel	$13,087		
b. Fringe Benefits	$5,758		
c. Travel	$0		
d. Equipment	$0		
e. Supplies	$0		
f. Contractual	$0		
g. Construction	$228,520		
h. Other Direct Costs	$0		
I. Total Direct Costs	$247,366		
i. Indirect Charges	$1,885		
TOTAL COSTS	$249,250	$124,000	$125,250
COST SHARE PERCENTAGE		50%	50%

Budget Narrative

Personnel

The District Assistant Manager and Lead Operator will install all automation and sensing equipment. Based on previous successful installations, the District has estimated the time it will take their staff to install sensors, overshot gates, and headgates. It is assumed that all work will be self-performed, and no Contractor hours will be required.

Fringe Benefits

The fringe benefits for all District staff are 44 percent of the salary rate. The Federal Insurance Contribution Act (FICA) is 8 percent, unemployment is 6 percent, Workers' Compensation Insurance (WCI) is 2 percent, medical and dental is 3 percent, retirement is 12 percent, and holidays and leave are 13 percent.

Travel

No direct travel expenses are assumed for this project.

Equipment

No equipment is assumed for this project.

Supplies

No supplies are assumed for this project.

Contractual

No contractual agreements are assumed to be required for this project.

Construction

Costs for all components necessary for the installation of automation and sensing equipment. The District has assumed most costs based on previous quotes and material procurement. The District assumes Categorical Exemption for NEPA permitting, with some coordination required and the cost of this is reflected in the other related construction costs.

Other Direct Charges

No costs included in this section.

Indirect Charges

Includes the mandatory 10-percent de minimis rate of modified total direct costs.

Total Costs

The total cost for the proposed project is estimated at $249,250.

Section 4: Environmental And Cultural Resources Compliance

Question 1: *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

The outlined project will facilitate the incorporation of actuators and sensors into pre-existing water conveyance facilities. The project's extent does not involve the complete construction overhaul of deliveries but rather a minor facility advancement. Typically, during the installation of actuators and sensors, a small pipe will be installed in the canal to install a transducer, and a local control box will be installed on a post within close proximity of the turnout near the ditch road.

Question 2: *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?*

U.S. Fish and Wildlife Service (USFWS)

- The slick spot peppergrass (*Lepidium papilliferum*), bull trout (*Salvelinus confluentus*), and monarch butterfly (*Danaus plexippus*) are listed species managed by USFWS near the Black Canyon Main Canal but are not within the proposed project footprint.

National Marine Fisheries Service (NMFS)

- No Endangered Species Act (ESA) listed species managed by NMFS have habitat near the Main Canal, or the proposed project footprint.

The proposed project will install Rotork actuators on existing irrigation turnouts. No ESA-listed species or habitats are anticipated or known to be present along the District's canals. Thus, this project is not anticipated to adversely impact ESA-listed species or designated critical habitats.

Question 3: *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, the proposed project boundaries do not affect wetlands and/or other surface waters covered under the Clean Water Act jurisdiction as "Waters of the United States." Therefore, no impact will transpire, and no mitigation will be required.

Question 4: *When was the water delivery system constructed?*

Construction for the District's second unit was completed in 1940.

Question 5: *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 automation project will install Rotork actuators on existing headgates at canal turnouts and add flow sensors to certain turnouts and canal checks. The new installation of the actuators and sensors will have little to no impact on the existing structures. The actuators will replace the manual handwheels on the existing gates and require a controller nearby along the ditch road. This same controller also receives signals from the sensors installed in the canal. The installation of the sensors requires a small pipe to be installed in the canal to allow for a transducer to safely sit at the bottom to record the water level of the canal and send it back to the local controller. Overshot gates are designed to fit into existing weir checks and will local control boxes mounted by the ditch road.

Question 6: *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.*

Yes. The Black Canyon Main Canal is referred to as historic property; therefore, it has been listed as eligible on the National Register of Historic Places. However, automated deliveries do not affect the historic property and serve as existing facility enhancements.

Question 7: *Are there any known archeological sites in the proposed project area?*

No. The District is unaware of any archaeological sites within the proposed project area at the time of this proposal submission.

Question 8: *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*

No. The proposed project will not adversely affect low income or minority populations.

Question 9: *Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?*

No. The proposed project does not limit access or result in other impacts to the five federally recognized Tribal lands located in the State of Idaho.

Question 10: *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

No. The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

Section 5: Required Permits Or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

There are no known permits required for this project. NEPA is assumed to be categorically exempt.

Section 6: Overlap Or Duplication Of Effort Statement

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

There is no overlap associated with this proposed project and any other proposals for automating canal deliveries along the Black Canyon Infrastructure.

Section 7: Conflict Of Interest Disclosure Statement

Applicants should state in the application if any actual or potential conflict of interest exists at the time of submission. Submission of a conflict-of-interest disclosure or certification statement is mandatory prior to issue of an award.

No actual or potential conflicts of interest exist at the time of this proposal submission.

Section 8: Uniform Audit Reporting Statement

All U.S. states, local governments, federally recognized Indian Tribal governments, and non-profit organizations expending $750,000 USD or more in Federal award funds in the applicant's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System.

Black Canyon Irrigation District acknowledges the requirement for a Single Audit should the project expenditures exceed $750,000 in federal award funds.

Section 9: Certification Regarding Lobbying

Applicants requesting more than $100,000 in Federal Funding must certify to the statements in 43 CFR18, Appendix Q. If this application request more than $100,000 in Federal Funds, the authorized official's signature on the appropriate SF-424 form also represents the applicant's certification of the statements in 43 CFR18, Appendix A.

The Black Canyon Irrigation District certifies the statements in 43 CFR 18, Appendix Q.

Section 10: Disclosure of Lobbying Activities (if Applicable)

If applicable, a fully completed and signed SF-LLL: Disclosure of Lobbying Activities form is required if the applicant has made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of

Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. This form cannot be submitted by a contractor or other entity on behalf of an applicant.

Not applicable to this project.

Section 11: Letters of Support

You should include any letters from interested stakeholders supporting the proposed project.

Letters of support are attached in **Appendix C**.

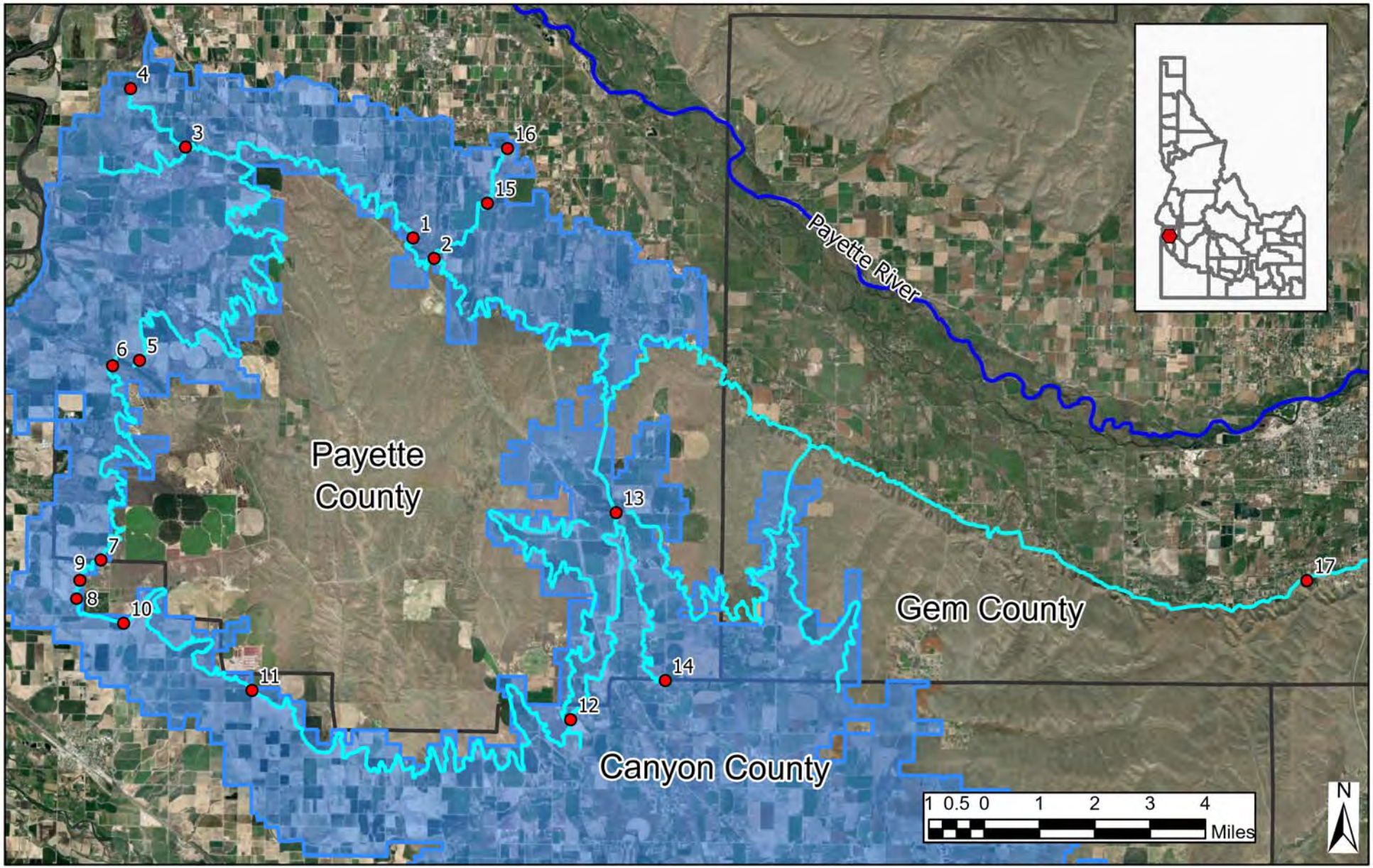
Letters of support were written on behalf of the District at the time of the WaterSMART Applied Science Grant application for the Black Canyon Main Canal Metering Project. Rather than having these entities resubmit a letter of support for the same project, these letters have been reused for the WaterSMART Small-Scale Water Efficiency Grants.

Supporting organizations include the following:

- Water District No. 63.
- Water District No. 65.

Appendix A -

List of Locations for Installation – Tier I (17 Sites)
List of Location for Installation – Tier II



Legend

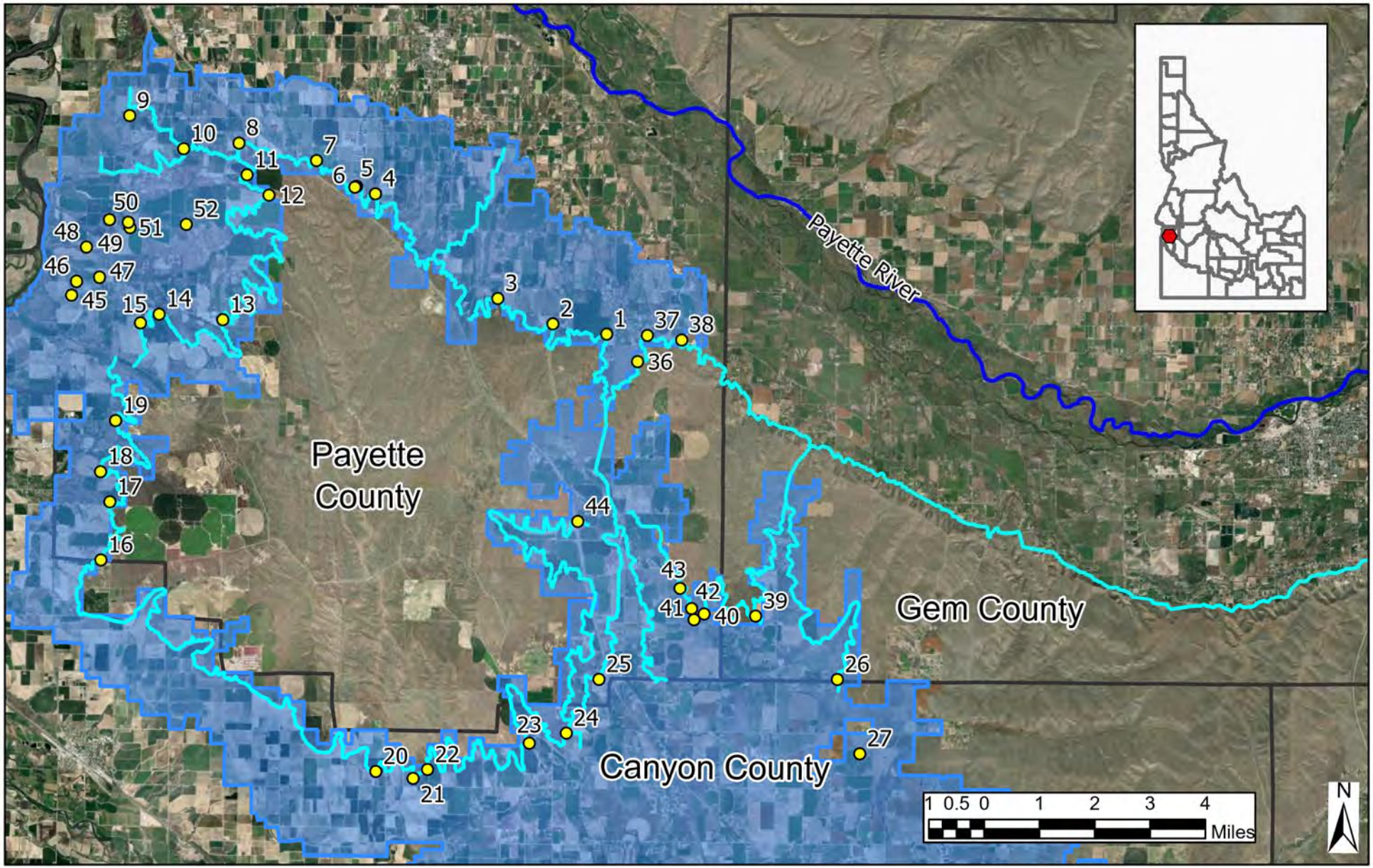
- BLACK CANYON IRRIGATION DISTRICT
- Water Conveyance Facilities
- County Border
- Primary Locations

Black Canyon Irrigation District
Tier I Automation

RH2

SMALL SCALE WATER EFFICIENCY GRANT - TIER I LOCATIONS
FY 2025
DRAFT DATE 12.03.2024

Priority Number	Canal	Equipment	Acres Served	E/N	Assumed Cost Place Holder
17	Main-B.C.-9.14	Headgate & Sensor		540114.88/4853641.84	$20,000
2,16	A-9.4	Headgate & EOL Sensor	1247	514586.00/4862605.90	$20,000
15	A-9.4 - Langley Wasteway	Headgate & Sensor		516112.59/4864234.42	$20,000
1	A-10.7	Headgate & Check Sensor	556	513964.41/4863193.28	$20,000
18	A-17.2	Head & End of Line sensor	972	507307.56/4865732.60	$20,000
3,4	A-17-1.2	Head & End of Line sensor	916	505685.31/4867408.10	$20,000
19	A-28.4	Overshot gate & Headgate Check Sensor	351	508467.73/4860746.66	$20,000
5	A-Line Wasteway	EOL Sensor		506064.27/4859528.27	$5,000
6	D-38.5	Headgate & Sensor	873	505283.09/4859361.74	$20,000
7	D-28.9	Headgate	203	504425.06/4853113.65	$15,000
9	D-28.0	Headgate	575	504338.57/4852567.35	$15,000
10	D-26.9	Headgate & Check Sensor	380	505716.50/4851863.16	$20,000
11	D-20.8	Check Sensor	149	509478.59/4849965.19	$5,000
12	C-line C.W. EOL	Sensor		518760.23/4849252.84	$5,000
13	D/H Line Divide	Headgate & Check Sensor	13312	519991.8/4855314.36	$20,000
14	H Line EOL	EOL Sensor	204	521496.21/4850434.83	$5,000



Legend

- BLACK CANYON IRRIGATION DISTRICT
- Water Conveyance Facilities
- County Border
- Secondary Locations

Black Canyon Irrigation District
Tier II Automation

RH2

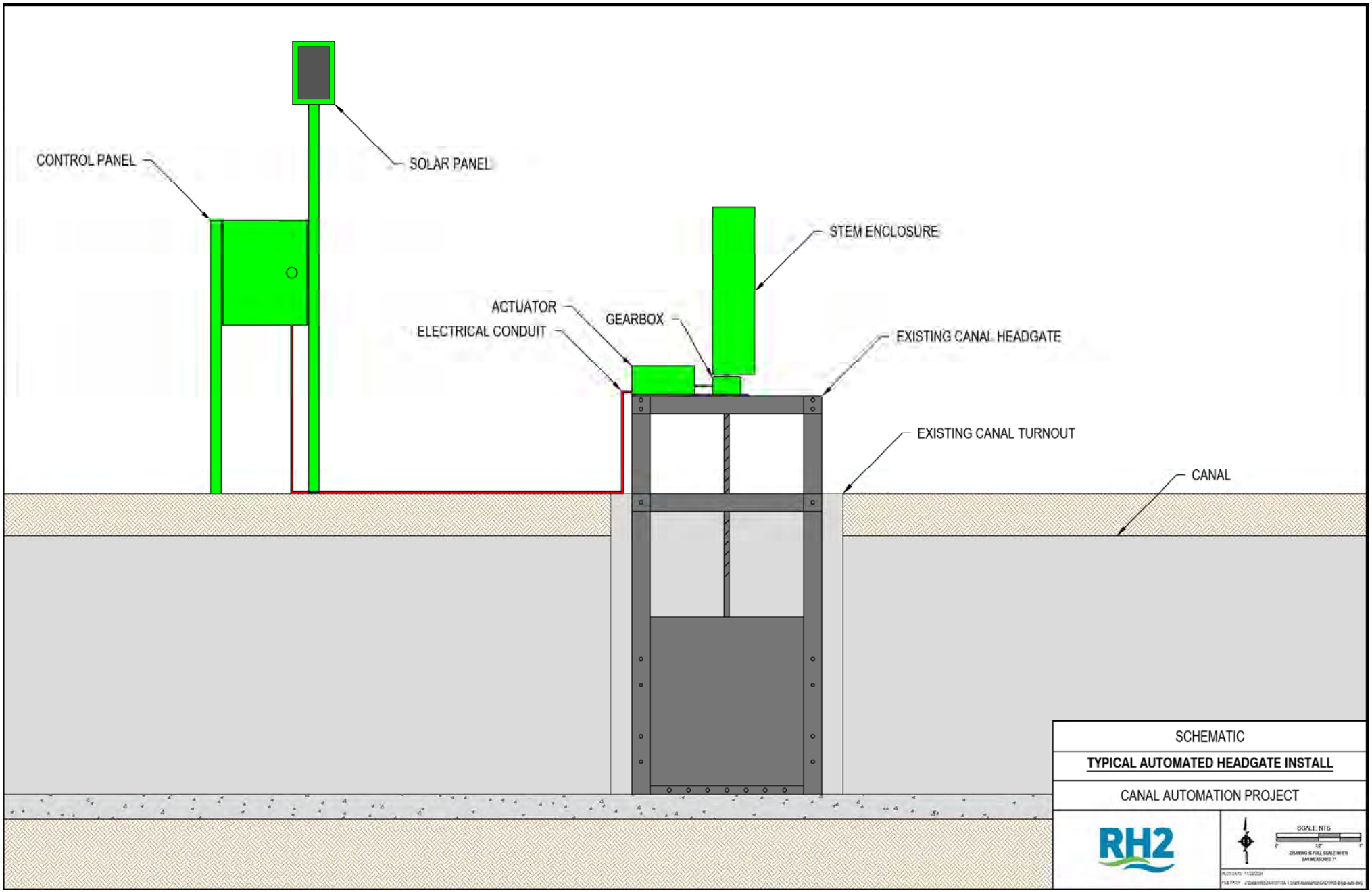
SMALL SCALE WATER EFFICIENCY GRANT - TIER II LOCATIONS
FY 2025
DRAFT DATE 12.03.2024

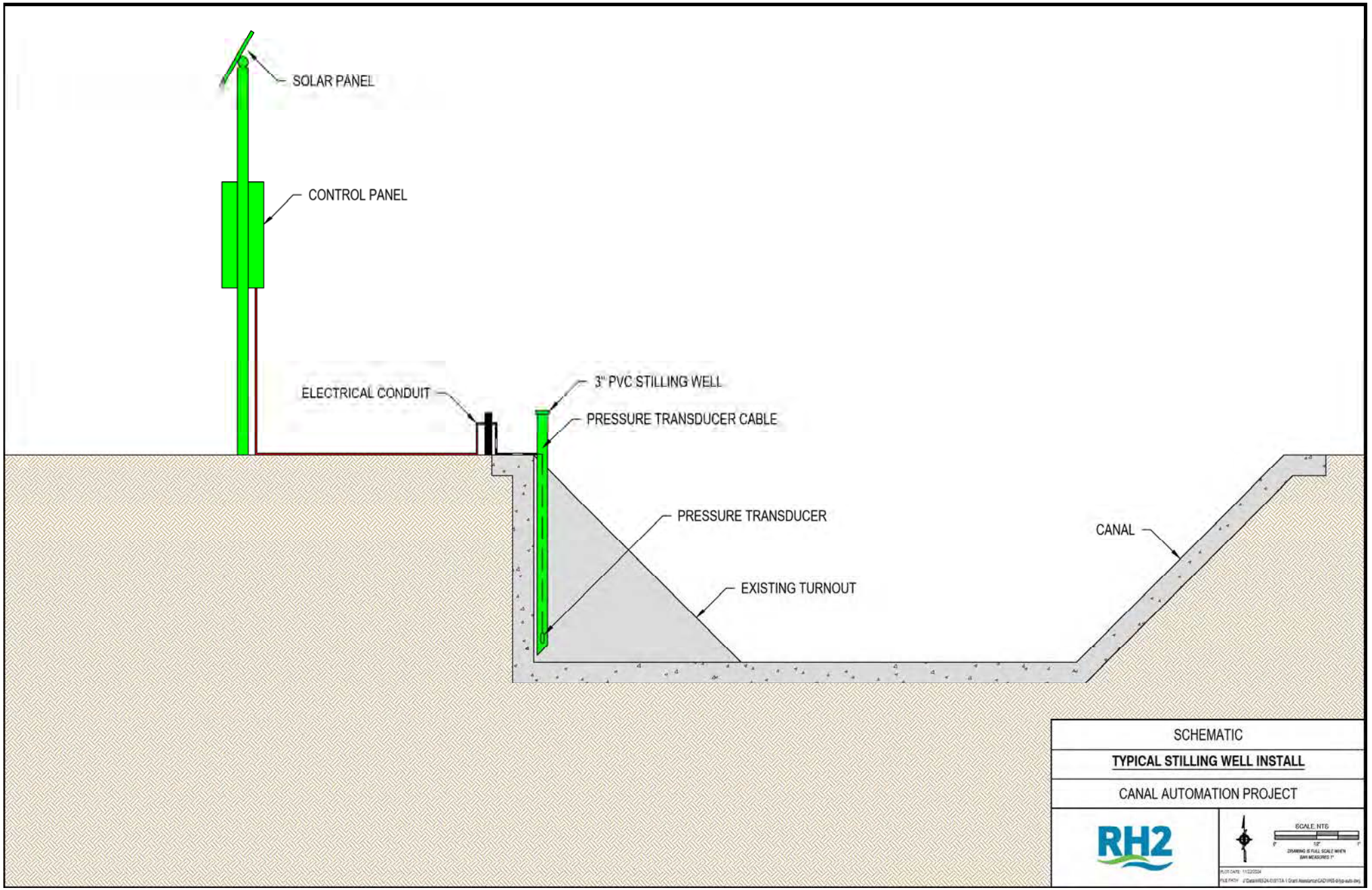
Priority Number	Canal	Equipment	Acres Served	E/N	Assumed Cost Place Holder
38	Main-B.C.-24.8	Headgate	455	521825.66/4860359.03	$15,000
37	Main-B.C.-25.5	Headgate	359	520824.07/4860476.41	$15,000
36	Main-B.C.-26.2-0.1	Headgate	45	520550.44/4859710.09	$15,000
1	A-2.0	Headgate	492	519639.45/4860495.80	$15,000
2	A-4.4	Headgate	386	518071.55/4860772.34	$15,000
3	A-6.1	Headgate	706	516456.86/4861484.67	$15,000
4	A-12.7	Headgate	713	512850.58/4864458.52	$15,000
5,6	A-13.6	Headgate & Check Sensor	219	512300.73/4864667.48	$20,000
7	A-15.1	Headgate & Check Sensor	384	511124.09/4865398.51	$20,000
8*	A-17.0	Headgate	556	508862.83/4865871.78	$15,000
9,10	A 17.2-1.3 Siphon	Headgate & Sensor	165	507256.9/4865684.26	$20,000
11	A-17.8	Check Sensor	75	509109.29/4864955.12	$5,000
12	A-18.7-Hurd-Wasteway	Headgate		509755.85/4864372.86	$15,000
49	A-20.4	Sensor	898	505127.73/4863591.08	$5,000
52	A-20.4-1.2	Headgate	186	507364.36/4863487.24	$15,000
50,51	A-20.4-3.3	Headgate & Sensor	488	505728.54/4863367.47	$20,000
48	A-20.4-4.1	Sensor		504469.47/4862785.85	$5,000
14	A-31.6	Headgate	521	506613.53/4860878.82	$15,000
47	A-31.6-1.5	Sensor		504862.72/4861918.68	$5,000
15, 45	A-32.3	Headgate & Sensor	622	504058.45/4861394.74	$20,000
46	A-32.3-1.3	Sensor	150	504197.11/4861790.37	$5,000
19	D-36.3	Headgate & Check Sensor	217	505393.59/4857769.75	$20,000
18	D-33.5	Check Sensor	209	504979.27/4856278.25	$5,000
17	D-31.9	Check Sensor	42	505263.46/4855406.66	$5,000
16	D-29.5	Check Sensor	229	505027.00/4853713.00	$5,000
*	D-29.0	Headgate	31	504425.00/4853113.0	$15,000
20	D-16.4	Headgate	150	513117.32/4847660.98	$15,000

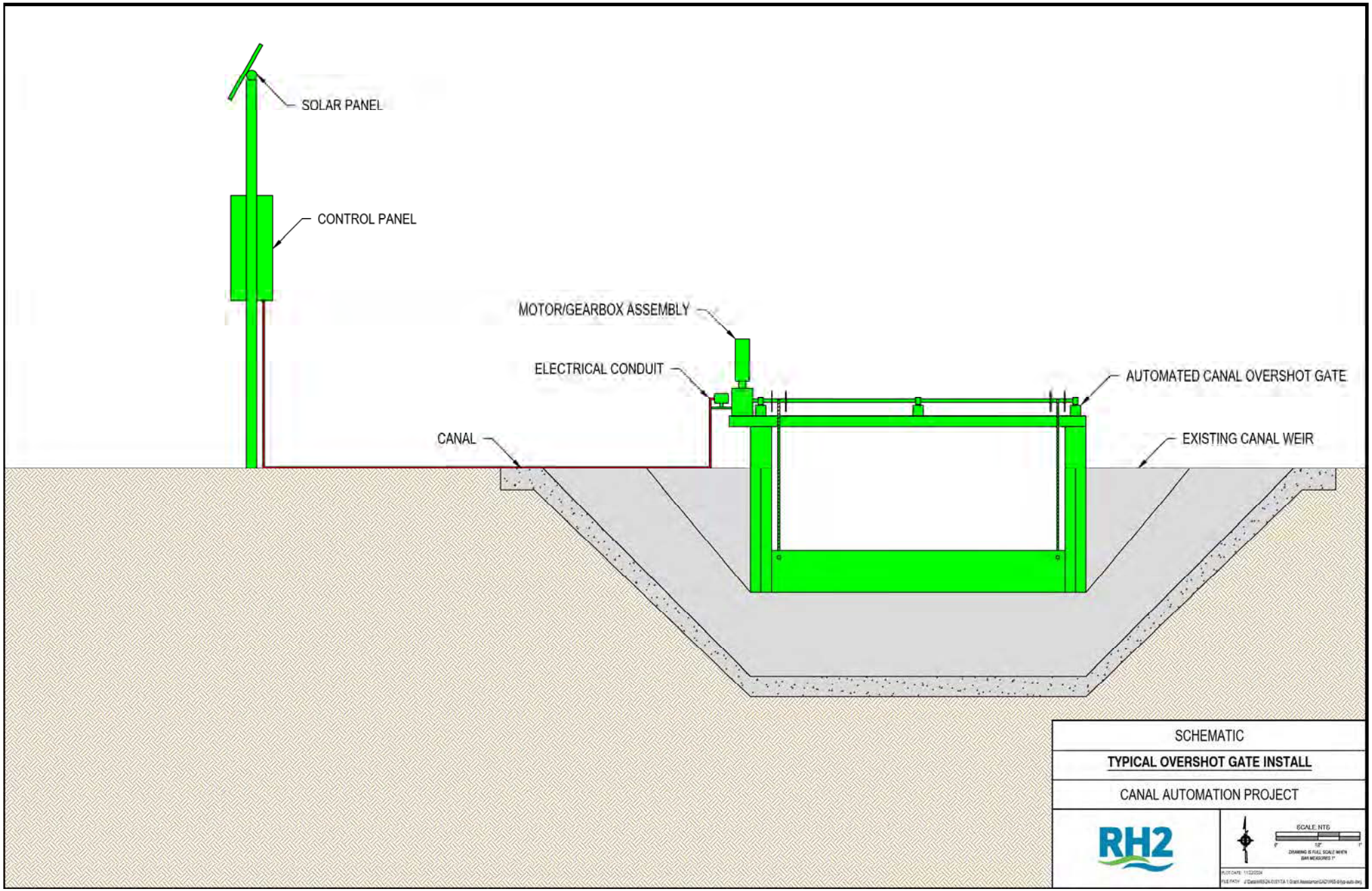
21	D-14.9	Headgate	454	514205.16/4847476.07	$15,000
22	D-14.6	Headgate	150	514620.08/4847741.20	$15,000
23	D-8.9	Headgate & Check Sensor	283	517567.21/4848550.12	$20,000
24	D-5.7	Headgate	59	518641.33/4848860.98	$15,000
25	D-4.0	Check Sensor	18	519567.14/4850438.85	$5,000
44	C-Line C.W. 11.9	Headgate	346	518880.29/4855041.11	$15,000
39	C-Line C .W. 3.8	Check Sensor	103	524094.86/4852348.87	$5,000
40	C-Line C.W. 7.3	Headgate & Check Sensor	657	522596.56/4852388.36	$20,000
41, 42	C-Line C.W. 7.5	Headgate & Check Sensor	463	522307.96/4852215.41	$20,000
43	C-Line C.W. 8.3	Check Sensor	78	521884.25/4853141.08	$5,000
26	C-Line C.E. 7.7	Headgate	215	526502.11/4850538.76	$15,000
27	C-Line C.E. 9.2	Headgate	835	527185.26/4848387.46	$15,000
28	C-Line C.E. 10.2-6.3	EOL Sensor	1287	526330.06/4839487.04	$5,000
29	C-Line C.E. 10.2-4.9	Headgate	492	526637.96/4842429.52	$15,000
34	C-Line C.E. 18.1	EOL Sensor	1373	527424.86/4840159.49	$5,000
33	C-Line C.E. 21.1	EOL Sensor		531191.15/4840971.70	$5,000
30	C-Line C.E. 19.2	Check Sensor	80	536020.53/4844335.10	$5,000
31	C Line C.E.	EOL Sensor		536674.6/4843924.94	$5,000
32,35	WPC Lateral	Headgate & Sensor		535659.74/4843289.98	$20,000

Appendix B

Typical Automation Installation Details


CONTROL PANEL
SOLAR PANEL
STEM ENCLOSURE
ACTUATOR
GEARBOX
ELECTRICAL CONDUIT
EXISTING CANAL HEADGATE
EXISTING CANAL TURNOUT
CANAL
SCHEMATIC
TYPICAL AUTOMATED HEADGATE INSTALL
CANAL AUTOMATION PROJECT
RH2
SCALE: NTS


SOLAR PANEL
CONTROL PANEL
ELECTRICAL CONDUIT
3" PVC STILLING WELL
PRESSURE TRANSDUCER CABLE
PRESSURE TRANSDUCER
CANAL
EXISTING TURNOUT
SCHEMATIC
TYPICAL STILLING WELL INSTALL
CANAL AUTOMATION PROJECT
RH2
SCALE: NTS



SCHEMATIC

TYPICAL OVERSHOT GATE INSTALL

CANAL AUTOMATION PROJECT

RH2

SCALE: NTS

0" 1/2" 1"

DRAWING IS FULL SCALE WHEN BAR MEASURES 1"

Appendix C

Letters of Support

January 13, 2025

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

RE: Letter of Support for the FY2025 WaterSMART Small-Scale Water Efficiency Grants – Black Canyon Irrigation District Canal Automation Project

Dear Grants Funding Team:

I am writing this letter to express my support for the grant application submitted by the Black Canyon Irrigation District (District), as referenced above. As Idaho Water District 63, one of the entities that works with Black Canyon irrigation District in measuring water and tracking water rights, we recognize the significant value in the District's pursuit of water management improvements that align with the universal goal of responsible water stewardship.

The commitment exhibited by the District 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 delivery will empower the District to conserve valuable resources.

Idaho Water District 63 fully endorses the FY 2025 Small-Scale Water Efficiency Grant funding application by the Black Canyon Irrigation District. This project, designed to enhance system reliability and improve delivery efficiency, aligns seamlessly with Idaho Water District 63 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 208-908-5480 or daniel@wd63.org. 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,

Daniel Hoke
Idaho Water District 63
Watermaster

January 12, 2025

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

RE: Letter of Support for the FY2025 Water5MART Small-Scale Water Efficiency Grants – Black Canyon Irrigation District Canal Automation Project

Dear Grants Funding Team:

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

The commitment exhibited by the District 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 delivery will empower the District to conserve valuable resources.

Water District 65 fully endorses the FY 2025 Small-Scale Water Efficiency Grant funding application by the Black Canyon Irrigation District. This project, designed to enhance system reliability and improve delivery efficiency, 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