

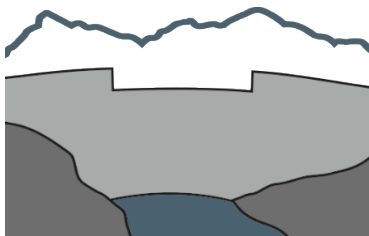
WaterSMART

Small-Scale Water Efficiency Projects for FY 2022

Funding Opportunity No. **R22AS00195**
CFDA: 15.507

Pondera County Canal & Reservoir Company Flowmeter Upgrades for SCADA

Valier, MT



Valier, MT Est. 1909

THE WATER COMPANY
Pondera County Canal & Reservoir Co.

Pondera County Canal and Reservoir Company

Cole Peebles, General Manager
501 Pondera Ave.
Valier, MT 59486

Phone: (406) 279-3315

Due Date: April 28, 2022

Table of Contents

Technical Proposal and Evaluation Criteria

Executive Summary.....	3
Background Data.....	3
Project Location.....	4
Technical Project Description and Milestones.....	5
Evaluation Criteria	
Evaluation Criterion A: Project Benefits.....	6
Evaluation Criterion B: Planning Efforts Supporting the Project.....	10
Evaluation Criterion C: Project Implementation.....	13
Evaluation Criterion D: Nexus to Reclamation.....	15
Environmental and Cultural Resources Compliance.....	18
Official Resolution.....	20
Project Budget.....	21
Funding Plan.....	21
Budget Narrative.....	22
Unique Entity Identifier and System for Award Management.....	23
Attachments	
Attachment A – US Drought Monitor Map for Montana	24
Attachment B (Enclosure) PCCRC Water Conservation Plan (WCP) Excerpts	

Technical Proposal and Evaluation Criteria

Executive Summary

Date: Application due date: April 28, 2022

Applicant: Pondera County Canal and Reservoir Company; Pondera County, Montana

Project Title: Flowmeter Upgrades for SCADA

Project Summary:

Pondera County Canal and Reservoir Company (herein PCCRC and The Water Company) has measured surface water deliveries with mechanical propeller meters for decades. The Water Company now plans to upgrade surface water measurement by upgrading propeller meters to digital registers that are SCADA-compatible over a two-year period.

PCCRC will make use of budgeted private funds and Bureau funds to upgrade **38** of the meters on surface water diversions in the project to make them SCADA - compatible in the next two years. PCCRC will contract with the meter manufacturer or Certified Service Professional for the purchase and configuration of the propeller meter upgrades to satisfy the project's water measurement and data needs. PCCRC staff is skilled in upgrades of propeller meter and may perform the necessary work to upgrade the propeller meters after purchasing the needed equipment.

Approximate Length: Two Years

Completion Date: May 15, 2025

Federal Facility: PCCRC is not located on federal lands or a federal facility.

Background Data

Pondera County Canal and Reservoir Company (PCCRC):

In 1886, W.G. Conrad & his brother Charles began acquiring roughly 50,000 acres of land in the Valier Area and incorporated it into the 200,000-acre Seven Block Ranch, which stretched from Conrad to Fort Benton. Through the Valier Land and Water Company, they constructed a fifty mile-long ditch and irrigation system that incorporated Lake Frances as a storage reservoir.

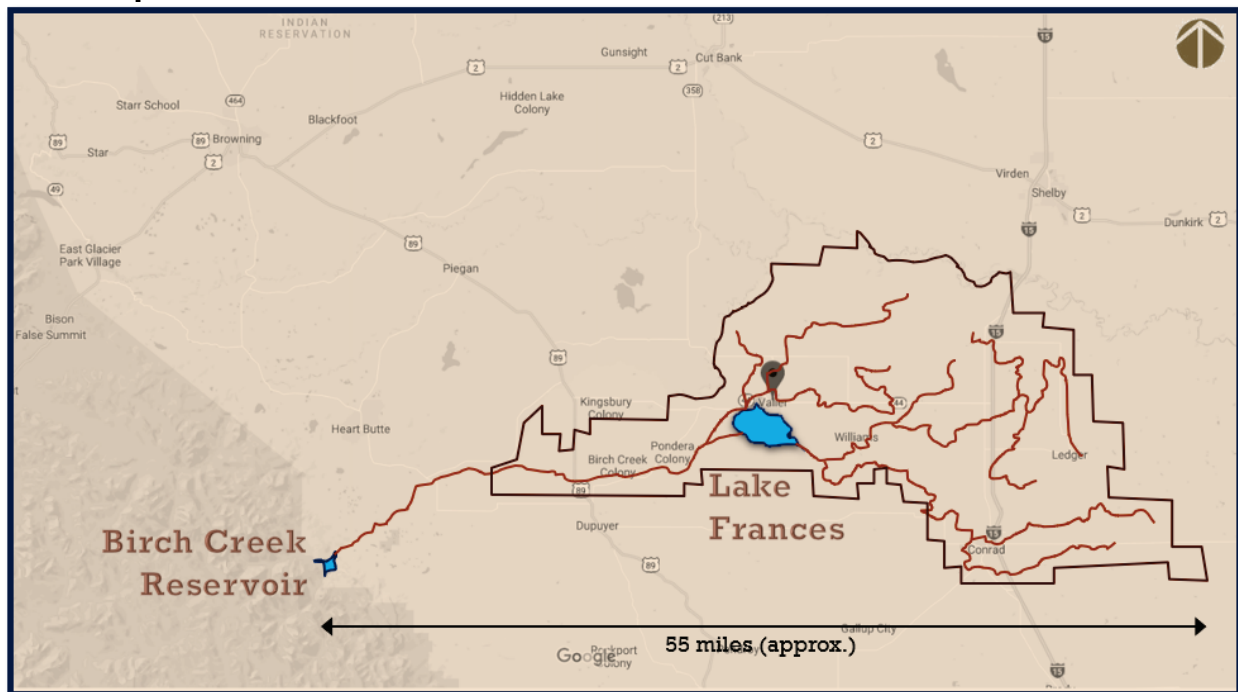
In 1908 the Cargill Company purchased the Conrads' Valier Land & Water Company, and it became the Teton County Canal and Reservoir Company under the Carey Act of 1894. Construction of the original earth-fill Swift Dam on Birch Creek began in 1909. The project was re-incorporated in 1927 as the Pondera County Canal and Reservoir Company. Infrastructure

construction was finally completed in 1948. In 1953, ownership of the project was turned over to the individual shareholders.

Of the three successful Carey Act Irrigation Projects created in Montana, the PCCRC is the largest; roughly 70,000 acres were patented from the Federal Government initially. Today, the Company's 80,400 (approximate) water shares are held in common stock by about 350 shareholders of various ownership percentages.

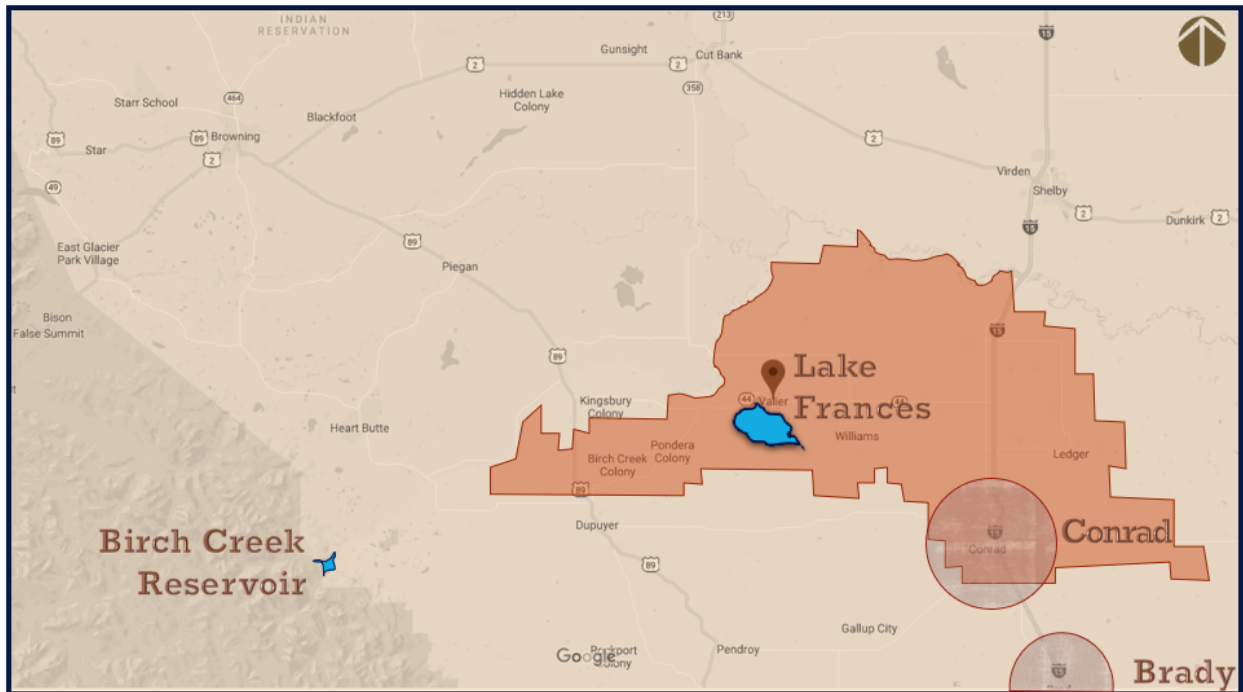
Currently, the PCCRC irrigates up to 72,000 acres in Pondera County each year. The PCCRC operates the Birch Creek Reservoir (Swift Dam), the Lake Frances Reservoir, the Birch Creek Diversion Dam, the Dupuyer Creek Diversion Dam, about 500 miles of primary canals and hundreds of other appurtenant irrigation structures.

Area Map – PCCRC Infrastructure



Project Location: Pondera County Canal & Reservoir Company is located in Valier, MT in Pondera County. The PCCRC's irrigation infrastructure stretches over 55 miles from the headworks at Swift Dam and east beyond the City of Conrad. The Company's incorporated offices are located in Valier, near the center of the irrigation project. The elevation across the PCCRC Project ranges from 4,300 to 3,800 feet above sea level. Most of the serviced farm and ranch lands slope gently or are only moderately steep. The project topography allowed the original settlers and producers to irrigate utilizing gravity-fed surface methods. However, irrigation technology has advanced over the past century. As such, over two-thirds of the incorporated project lands are now irrigated utilizing pumping equipment.

PCCRC Service Area



Technical Project Description and Milestones

Pondera County Canal and Reservoir Company (PCCRC) intends to improve surface water measurement within the project by upgrading **38** existing mechanical propeller meters for SCADA compatibility with assistance from the WaterSMART Small-Scale Water Efficiency Grant. PCCRC was fortunate to be the recipient of funding for the FY'21 offering of the Small-Scale Water Use Efficiency Grant Program. This FY'21 project was to fund the *Dupuyer Creek Diversion Automation & Telemetry Project* part of which was the installation of a SCADA system for remote monitoring and data acquisition of water control structures and measurement devices within the PCCRC. Proposals were requested for the *Dupuyer Creek Project* in March, and the project is currently in the contracting phase. Work on the *Dupuyer Creek Project* is expected to begin around July of 2022.

Meter Upgrades: The PCCRC proposes to upgrade each open channel mechanical propeller meter to digital registers for SCADA compatibility. Converting all propeller meter to digital registers is expected to be a two-year project.

The proposed project will upgrade old mechanical meters by retrofitting them with digital registers featuring datalogging capabilities. The upgraded meters will also be telemetry-compatible to allow the PCCRC to read the meters remotely over the PCCRC's existing (and ever expanding) SCADA system. Through this project, PCCRC will replace the mechanical registers on their fleet of existing McCrometer M1700 flowmeters. Because current the mechanical registers approximate flowrates utilizing wearable parts (flexible metal oedometer cables and sealed bearings), the new meters will also reduce the amount of staff time required for

annual meter service and repairs. Meter down-time will be reduced while improving water use records at PCCRC. The PCCRC is proposing to upgrade all of their **38** mechanical propeller meters with digital registers within the next two years. The McCrometer M1700 digital registers are battery-powered (up to 10 years) and are designed to measure flows from culverts and turnouts into irrigation canals. Digital register batteries are easily replaceable (when required).

These meter retrofits will provide operational advantages such as real-time efficiency monitoring. Management and staff will more instantaneously know of carriage water excesses and irrigation equipment failures such that flows can be adjusted in a timelier fashion; thereby saving water. Upgrading and incorporating these meters into the PCCRC's existing telemetric network will also improve data collection for the betterment of water management and conveyance throughout the PCCRC.

Upon the successful award of this proposal, materials will be ordered in late December of 2022 and 2023 for delivery in January, 2023 and 2024 respectively. Installation of meters will be scheduled for January/February of 2023 and 2024 during the off-season of each respective year.



Evaluation Criteria

Evaluation Criterion (A)- Project Benefits: *Up to 35 points may be awarded based upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including the significance of the anticipated water management benefits and the public benefits of the project. This criterion prioritizes projects that modernize existing infrastructure in order to address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflict in the region.*

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

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

Through remote monitoring of flows into customer ditches, Company Laterals, and Company Ditches, PCCRC will save substantial operation and maintenance hours that can be allocated to other work and minor efficiency improvements throughout the system. The project would help minimize delivery inefficiencies and also provide the PCCRC with more robust water management capabilities thereby helping to get more irrigation water to downstream users. Currently PCCRC staff would need to physically drive to and manually read the meters installed at water diversions within the project. Upgrading the existing mechanical propeller meters within the project will enable PCCRC staff to remotely read flow meters installed at laterals and respond to water delivery issues as needed. In addition, once upgraded, the digital registers that will make SCADA compatibility possible have no moving parts and will therefore require less staff time for maintenance by PCCRC Staff.

The addition of remote monitoring capabilities at flow measurement points would also improve the distribution of water by preventing over-deliveries to certain areas within the system. When over deliveries are prevented, this creates availability of water supply in other portions of the PCCRC. The implementation of the proposed flowmeter retrofits will improve PCCRC's overall operating efficiency and increase its drought resiliency. Traditionally, the Water Company has operated its systems with better-than-average losses. However, the PCCRC strives always to improve its stewardship of this precious resource. Less wasted water during dry years equates to more water retained in storage for the following irrigation season.

The PCCRC's irrigation project allots its shareholders irrigation water based upon reservoir storage, the available snowpacks (SNOTEL) in the Dupuyer Creek and Birch Creek Basins, as well as streamflow forecasts developed by the Bozeman, Montana NRCS Office. By achieving efficiency through automation, this project could increase the amount of water delivered to producers. Therefore, the proposed project would minimize inefficient water diversion, which would provide more reliable water to users during drought conditions and periods of peak irrigation demand.

• Explain the significance of the anticipated water management benefits for the Category A applicant's water delivery system and customers. Consider:

The proposed project will result in water conservation, drought resiliency, enhanced staff efficiency, improved water supply and management, and increased irrigation efficiency. Previous projects in PCCRC implementing diversion automation were expected to increase available water to the PCCRC irrigators by nearly 5,000 acre-feet during an average water year. This water is normally lost to inefficiencies and poorly timed deliveries relating to manual operation of the diversion in conjunction with Swift Dam releases. The proposed upgrades would allow for automated and frequent measurement of water deliveries to customer laterals for improved water management and distribution within the project. Additional project benefits will include improved crop production. Using their Annual Crop Census Report, the PCCRC has estimated that a water savings of 5,000 ac-ft per year would translate to an approximate 7% increase in crop yield. If realized, the projected yield improvements could produce a regional agricultural revenue increase of \$2,048,900 per year.

o Are customers not currently getting their full water right at certain times of year?

Drought conditions in recent years have certainly affected the ability of water to deliver to shareholders of the PCCRC. This project will improve water management within the PCCRC's systems in order to deliver more water, more efficiently; as well as providing more water in storage such that it can be delivered to downstream users during critical summer watering periods, thereby enhancing drought preparedness.

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

Yes. Automating the data acquisition from measurement devices within the project will improve the internal distribution of water resources among water users in PCCRC. During times of drought as PCCRC water users are currently experiencing, accurate measurement and more frequent measurements will ensure that PCCRC water managers will equitably apportion water

to PCCRC shareholders. Frequent and accurate measurements will increase operational transparency and prevent potential litigation and limit water calls due to over-deliveries.

o What are the consequences of not making the improvement?

PCCRC's Water Conservation Plan incorporates a long-range approach for a system-wide monitoring and SCADA network. If the upgrades are not performed for the existing mechanical propeller meters, PCCRC will not be able to take full advantage of planned SCADA system expansions, such as the one that is being contracted for the *Dupuyer Creek Diversion Automation & Telemetry Project*. Consequently, the project would not be able to take full advantage of conserved water with improved accuracy and frequency of automatic measurements.

o Are customer water restrictions currently required?

Yes. As previously mentioned, PCCRC's irrigation project allots its shareholders irrigation water based upon reservoir storage, the available snowpacks (SNOTEL) in the Dupuyer Creek and Birch Creek Basins, as well as streamflow forecasts developed by the Bozeman, Montana NRCS Office. During periods of drought, PCCRC must allocate available water according to the above forecasts which inevitably restricts water to shareholders of the PCCRC. Improving the accuracy and frequency of water deliveries to shareholders will improve water use efficiency as well as the probability of not restricting water deliveries to shareholders.

o Other significant concerns that support the need for the project.

This project is a portion of the broad Water Conservation Plan adopted in January, 2021 by the PCCRC Board of Directors. The Board has resolved to allow PCCRC staff proceed with this project, and the success of PCCRC's operations depend on approval.

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 proposed project to automate water measurement will provide benefits to several local sectors including the local and regional economies, agriculture, and the environment. As mentioned, the PCCRC's service area incorporates more than 80,000 acres of irrigable ground. In any given year, the Company can deliver water to up to 72,000 acres of this irrigable land total. The acres served by the PCCRC currently generate over \$25 Million in revenues each year. During the past 3 irrigation seasons, an average of 10 inches of water was allotted annually to each irrigated acre. The average annual projected increase in water for irrigators as a result of the proposed telemetry project (roughly 5,000 ac-ft) would create an additional 0.74 inches of water for each irrigated acre within PCCRC's project. This approximate 7% increase in water for the project would yield an estimated total annual revenue of \$31,318,600, resulting in an approximate increase of \$2,048,900. The project will also provide an economic boost both during construction and after the project is completed. During construction, the proposed project will have a positive economic impact on the local community due to purchased materials and professional services provided. Once complete, users of the system will be able to increase crop production due to increased water availability. Increases in crop production will lead to increased revenue. The primary crops grown within the PCCRC service area are alfalfa, barley, wheat, canola, and Pulse crops. The proposed project will lead to a 7% increase in production of these crops, therefore sustaining the agricultural economy in the area, providing food (barley and

wheat) for the citizens of the State of Montana, and providing forage crops (hay) to feed livestock in the region, which in turn provides meat to the citizens of Montana. An economic analysis of the downstream acres impacted by this project estimated an increased annual agricultural revenue of \$2,048,900 because of the 7% increase in crop production. Additional revenues of up to \$4,550,000 generated from increased beef production within the region could also be supported by improved local crop production for livestock feed as a result of automating data acquisition from measurement devices in PCCRC.

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

The PCCRC is a responsible steward of Montana's water that actively communicates, collaborates, and shares information with the other regional ditch associations (Bureau of Indian Affairs, Montana Water Resources Association, the Montana Association of Dam and Canal Systems, and local Dupuyer Creek and Birch Creek water users), as well as the Pondera County Conservation District, the Montana Department of Natural Resources and Conservation (DNRC), and the Natural Resource Conservation Service (NRCS). Benefits and lessons learned are shared for the betterment of the overall system, the region, and the irrigated West. The proposed project for automating measurement devices would provide more timely diversion and flow data that could be shared with all stakeholders and interested parties.

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

The proposed project is expected to benefit the overall PCCRC system. Users will have a more reliable source of irrigation water, improved efficiency, improved drought preparedness, increased crop production and crop revenue, as well as improved overall management of the PCCRC system. The proposed project will increase agricultural revenues throughout the region, resulting in associated economic improvements.

- *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.*

In 1985, the existing Dupuyer Creek Diversion was rehabilitated in collaboration with the USDA SCS (now the NRCS) as part of the Lower Birch Creek Watershed Plan. Through this partnership, the previous diversion was replaced with a new concrete structure, emergency flood conveyance, parapet floodwalls, and high-strength hand-operated Watermen bulkhead-style gates. The structural components implemented during that work are still in excellent shape. The PCCRC's Engineer estimates that the existing concrete diversion will be serviceable and fully operable for at least 50 years into the future.

Between 1980 and 1990, the PCCRC and the NRCS worked together to implement millions of dollars in other critical infrastructure replacements and repairs across the Pondera County Canal & Reservoir Company's then aging systems. These projects were part of the collaborative Lower Birch Creek Watershed Plan through the (then) Soil Conservation Service.

In addition, the State of Montana and the Federal Government have developed multiple programs for the promotion of renewable resource conservation on a more producer-focused level. These programs generally target projects in which a need is demonstrated, including the demonstration

of an increase in citizen and resource benefits. The Montana NRCS EQIP program is an example of one of these programs and provides cost share money for projects that increase resource conservation (although now changed to be implemented through Targeted Implementation Plans). Over the past 15 years, dozens of irrigators within the Company's service area have pooled resources with PCCRC (matching their cash funds with the Company's in-kind staff and equipment contributions) in order to make on-farm improvements using the NRCS EQIP program. The additional water saved by the proposed telemetry and automation project will further promote efforts by PCCRC users to seek assistance from the NRCS (and other funding sources) for on-farm improvements. In addition, the proposed telemetry work—once implemented—will free PCCRC resources that could instead be used in partnership with local producers to help implement EQIP (and other) projects.

- *Will the project help address drought conditions at the sub-basin or basin scale? Please explain.*

Yes. North Central Montana is currently in *extreme* drought as characterized by <https://droughtmonitor.unl.edu/> (Attachment A) which has significantly affected the availability of water to deliver to shareholders in the PCCRC. This project will significantly improve the ability of PCCRC to effectively deliver water to shareholders under drought conditions.

Evaluation Criterion (B) Planning Efforts Supporting the Project: *Up to 30 points may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant's existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the Category A applicant. This criterion prioritizes projects that are identified through local planning efforts and meet local needs.*

Plan Development: *Describe how your project is supported by an existing planning effort. Identify the planning effort and who developed it. If the planning effort was not developed by the Category A applicant, describe the Category A applicant's involvement in developing the planning effort.*

Yes, The PCCRC Board considers measuring water as accurately as possible to be a priority consistent with and furthers the goals of the **PCCRC Water Conservation Plan (WCP)**. The PCCRC recently completed an update (2021) of their Water Conservation Plan (WCP), an excerpt of which is included appended to this grant submittal. Each year, and as part of the WCP capital planning update, the PCCRC conducts a system review, which provides them with a planning and prioritization process for economically feasible projects. The goal of the WCP is to better plan for capital investments that will improve the overall efficiency, conservation efforts, and water delivery of the PCCRC's systems. The PCCRC's WCP is a living document that is constantly evolving for the best application of limited funds throughout PCCRC's extensive systems.

The PCCRC has taken a proactive approach to addressing problems and implementing improvements within their irrigation system that are consistent with their ongoing water management, conservation, and drought resilience planning. Within the past 10 years, the PCCRC has successfully completed the following planning, design, and construction projects, which have been completed to conserve water and benefit Montana's renewable resources. Please refer to the Water Conservation Plan (WCP) excerpt included with the grant application for further details:

Swift Dam Automation Project. The PCCRC partnered with the PCCRC partnered with the Pondera County Conservation District (PCCD) and applied for funds from the DNRC's Renewable Resource Grant and Loan (RRGL) Program for the design and construction of the Swift Dam Gate Automation Project located on Birch Creek. Completed Spring 2021, the project involved the automation of the Swift Dam outlet in order to provide the capability of remote monitoring and control of outflows and water levels for Birch Creek Reservoir. The project benefits Montana by improving the conservation, management, development and preservation of Montana's renewable resources. It also protects life by providing remote operation of the gates in times when the dam house is inaccessible due to snowfall, fire, or other emergency events. An RRGL Grant was awarded to the PCCD and the PCCRC in the amount of \$125,000 for this important work. The PCCRC will contributed approximately \$30,000 in matching cash funds for the project resulting in an estimated total implementation cost of \$155,000. The SCADA controls were successfully utilized during the 2021 Water Year.

Kingsbury Diversion Automation Project. The PCCRC partnered with the PCCD and applied for funds from the DNRC's RRGL Program for rehabilitation of the Kingsbury Turnout at the head of the Kingsbury Canal in Pondera County, MT. An old, deteriorating headgate system was replaced, and the Water Company implemented an electronic supervisory control and data acquisition (SCADA) system that allowed the PCCRC to precisely remotely control and monitor the new structure during the 2021 Water Season. The completed project provides conservation, preservation, development, and management benefits. An RRGL Grant in the amount of \$125,000 was utilized to implement this important work. The PCCRC contributed roughly \$15,000 in matching cash funds for the project, which resulted in an estimated total implementation cost of \$140,000.

E Canal Re-Regulating Reservoir. This new 49-acre-foot in-line storage project was completed in the fall of 2021 utilizing PCCRC's skilled staff and equipment. The new re-regulating reservoir includes an earthen embankment dam with integral rock-lined earthen spillway and precast concrete outlet works. The E-Reservoir will be employed for the first time during the 2022 Season to help regulate canal flows, reduce seepage loss, and improve delivery efficiency and timing. A US Bureau of Reclamation WaterSMART grant of \$170,000 was awarded to PCCRC in 2019 for this work. The Water Company provided the balance of project match in-kind contributions and project cash.

East Dam Pipe Gallery Reinforcement. In 2007 and 2008, the PCCRC performed a full-scale reconstruction of the East Dam and outlet works. The original outlet barrels were left in place for constructability and drainage. A new gatehouse was constructed and a steel liner was inserted into the existing lower barrel of the outlet structure and then grouted. These improvements are generally in good condition. During the design of the 2008 rehabilitation, the original (uppermost) pipe gallery was left in place. While it is no longer operable, the upper pipe gallery is still flooded when the lower discharge is utilized. Previously, annual dam inspections documented continued deterioration of the concrete walls of the uppermost abandoned pipe. In April 2021, PCCRC contracted with Shotcrete MT to structurally reinforce the concrete walls of the upper gallery utilizing shot concrete. The completed work was funded with the PCCRC's Watershed Improvement Fund.

L9 Concrete Chute Rehabilitation. The existing L9 chute is a mile-long rectangular concrete chute that is roughly 60 years old. Cracking and settlement of the inlet and outlet structures for the chute allowed canal water to wash below the structure. This damage resulted in appreciable irrigation water loss and threatened to compromise the integrity of the structure. PCCRC crews, equipment, and finances were used to successfully repair the structure in February of 2021.

Big Flat Coulee Wasteway Pipeline. Historic drifting, snowmelt, and runoff in the spring of 2018 and 2019 severely damaged the existing Big Flat Coulee Wasteway Chute at the S-Siphon. PCCRC submitted a DNRC Irrigation Development Grant (IDG) application and was successfully awarded funds to offset the capital cost of designing and constructing a new Wasteway Pipeline in the approximate location of the failed chute. The double-barreled, broken-backed pipeline, including new concrete inlet structure and a new energy dissipation structure was finalized in April 2020. This structure provides critical off-season and flood protection for the PCCRC's 6-foot diameter siphon across Big Flat Coulee.

Phase I – Swift Dam Primary Spillway Repairs. Concrete Floor Patch. During the 2018 annual inspection of Swift Dam, several sections of the primary concrete spillway floor were observed to be structurally damaged. The spillway repairs are currently being evaluated in coordination with the BOR's dam structure specialists and the PCCRC's technical consultants in order to plan for (and budget) a permanent floor repair for a long-lasting solution (Future, Phase II).

Emergency Operating Gate Repairs: East Dam Lake Frances. Repeated cycling and bolt fatigue caused the operating gate frame pedestal to shear completely off of the gate house wall. This failure occurred at the peak of the 2018 irrigation season and rendered the gate completely inoperable during a time of heavy water demand. The PCCRC Engineer and Construction Foreman designed and fast-tracked a robust solution to permanently repair the gate operating structure.

C-5 Canal Lateral-To-Pipeline Conversion. Working together, the Pondera County Conservation District (PCCD) and the PCCRC received a grant through the Montana DNRC, Renewable Resource Grant and Loan Application (RRGL) program for this project. This section of elevated canal caused appreciable seepage, which diminished crop productivity and decreased accessibility for the adjacent landowners. In 2017, the PCCRC utilized in-kind crews and equipment leveraged against RRGL grant income in order to convert this problem ditch into an efficient, water conserving pipeline.

Swift Dam Outlet Gate Rehabilitation. In 2015, the PCCRC worked with a BOR-recommended contracting specialist to rehabilitate Swift Dam's primary operating gates, frames, and seals. This work was performed to remediate significant and increasing leakage that had been observed beginning in 2010. During the 2020 Engineer's inspection of the operating gates, the repairs were found to be in excellent condition with very tight seals. This project was successful in measurably conserving water and improving storage within Birch Creek Reservoir behind Swift Dam.

Seepage Abatement Projects. Smaller scale projects have also been performed by the PCCRC to reduce seepage issues throughout the irrigation system. Small projects involve the annual application of CANAL SEAL™ within observed seepage locations along mainline conveyances. Permanent seepage abatement projects have also been completed.

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 in the planning effort? Explain whether the proposed project implement a goal or address a need or problem identified in the existing planning effort.

Yes. The upgrading of the mechanical propeller meters for SCADA compatibility is considered to be the next phase of the SCADA and automation improvements that were completed after the *Dupuyer Creek Diversion Automation Project* that was funded under an FY'21 Small-Scale Water and Energy Efficiency Grant Project.

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

To best prioritize and select capital investment projects, the PCCRC utilizes its WCP to conduct thorough reviews of all project proposals. This helps ensure that selected project(s) are in keeping PCCRC's primary goals, which include water conservation and improved drought resiliency. The improved frequency of water measurement would allow more water to be evenly distributed to irrigated lands, thereby increasing crop yields. After each irrigation season, and before the beginning of the next irrigation season, PCCRC personnel take inventory of potential projects for the next year. This project is the PCCRC's highest priority due to its water inefficiency and potential to impact nearly the entire project.

Following the successful completion of this *Flowmeter Upgrades for SCADA Project*, the PCCRC will pursue the full-scale automation of its Birch Creek Diversion and C-Canal Headworks. The preliminary engineering work for *The BC Diversion and C-Canal Headworks Automation Project* is currently being funded by a planning grant awarded through the Montana DNRC's Renewable Resource Grant & Loan Program.

The PCCRC Board of Directors resolved at its **April 7, 2022** Board Meeting to commit matching and in-kind funds and to initiate meter upgrades through this *Flowmeter Upgrades for SCADA Project*. The WCP adopted by PCCRC in 2021 has placed a priority on metering to deliver water with accuracy and efficiency throughout the project during times of drought or water shortage. The meters are in need of being upgraded at this time.

Evaluation Criterion (C) Implementation and Results: *Up to 20 points may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.*

- *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.*

April, 2022: Submit proposal to Bureau

June, 2022: Successful notification of award from the Bureau

July, 2022: Sign contract with the Bureau

Oct, 2022: Initiate Environmental Compliance with local Bureau office. Determine adequate sizing of meters for Phase Two meter order.

Dec, 2022: Order flowmeters from Certified Service Provider

Jan/Feb, 2023: Upgrade up to 20 meters at PPCRC diversion points

Dec, 2023: Order flowmeters from Certified Service Provider

Jan/Feb, 2024: Upgrade up to 20 meters at PPCRC diversion points

May, 2025: Prepare Final Project Report for Bureau

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

No permits will be required for this project. There will be absolutely no disturbances to streambeds or to the environment as a result of the proposed work. All existing flowmeters are current installations. The meters are already mounted to existing turnouts. The proposed *Flowmeter Upgrades for SCADA* Project will simply retrofit the existing mechanical meters with digital registers at the current locations.

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

No engineering or design work is required for this project. PCCRC is consulting with a McCrometer Certified Service Provider on proper meter upgrade procedures, calibrations, sensors, and configurations.

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

The proposed project will not require new policies or administrative actions to be implemented.

- *Describe the timeline for completion of environmental and cultural resource compliance. Was the timeline for completion of environmental and cultural resource compliance discussed with the local Reclamation office?*

Jim Forseth from the local Reclamation office was contacted and indicated that since the project is only upgrading existing meters, the environmental and cultural resource compliance should be very straight forward and simple. The environmental compliance estimate was based on our collective experience with recent, similar efforts and projects. Since the project will be limited to existing irrigation that are commonly removed each year for regular maintenance, environmental permitting should not be required.

Evaluation Criterion (D) Nexus to Reclamation: *Up to 5 points may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity. 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?*

The PCCRC and BOR have worked together recently to implement and administer funds for the construction of the E-Canal Regulating Reservoir within the PCCRC system. This work was slated to be successfully completed Fall 2021. Although the PCCRC is neither a Reserved Works nor a Transferred Works facility, the Company has worked with the BOR since Reclamation rebuilt Swift Dam following the 1964 flood disaster. The PCCRC owns and operates Swift Dam, but Reclamation has provided remote stage-storage monitoring of Swift Dam and Lake Frances and technical consultations regarding concrete spillway repairs, gate operation and rehabilitation, and other issues on an as-needed basis.

- *Does the applicant receive Reclamation project water? Is the project on Reclamation project lands or involving Reclamation facilities?*

The PCCRC does not receive Reclamation project water. The project is not located on Reclamation lands, nor does it involve Reclamation facilities.

- *Is the project in the same basin as a Reclamation project or activity?*

Yes. The project is situated in the upper Marias River Watershed and upstream of Tiber Reservoir, which is associated with Reclamation.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

Yes. The proposed project is located within the Marias River watershed and Reclamation is associated with Tiber Dam, also within the Marias River watershed. The proposed project has the potential to conserve water in the Marias River. By eliminating the almost 5,000 acre-feet of water normally lost to inefficient water delivery, the PCCRC will be able to better manage storage. Improved water management by the PCCRC could result in water conservation for other users in the watershed.

Evaluation Criterion E—Presidential and Department of the Interior Priorities (10 points)

Up to **10 points** may be awarded based on the extent that the project demonstrates support for the Biden-Harris Administration’s priorities, including E.O. 14008: *Tackling the Climate Crisis at Home and Abroad*, E.O. 13985: *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, and the President’s memorandum, *Tribal Consultation and Strengthening Nation-to Nation Relationships*. Points will be allocated based on the degree to which the project supports the priorities listed, and whether the connection to the priority(ies) is well supported in the application. Without repeating benefits already described in previous criteria, describe in detail how the proposed project supports a priority(ies) below.

E.1.5.1. Sub-criterion No. E1. Climate Change

Points will be awarded based on the extent the project will reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity. Address the following as relevant to your project.

Combating the Climate Crisis

E.O. 14008: *Tackling the Climate Crisis at Home and Abroad*, focuses on increasing resilience to climate change and supporting climate- resilient development. For additional information on the impacts of climate change throughout the western United States, see:

<https://www.usbr.gov/climate/secure/docs/2021secure/2021SECUREReport.pdf>. 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.*

The proposed meter retrofits, equipped with digital registers will have telemetry capabilities. Once implemented, PCCRC staff will be able to plan for future projects and prioritize sites for telemetry and SCADA upgrades. This follow-on work will allow for remotely read meters from the Company Office, reducing overall vehicle use, and reducing greenhouse gas emissions. With the upgrades on the existing mechanical propeller meters, there will be a reduction in drive time between diversion points while performing routine maintenance and other duties.

- *Does this proposed project strengthen water supply sustainability to increase resilience to climate change? Does the proposed project contribute to climate change resiliency in other ways not described above?*

Yes, the proposed Project will strengthen water supply sustainability by increasing water measuring frequency and accuracy. The PCCRC Project is experiencing extended drought as climate changes are causing water shortages and lower than expected allocations for all project users. With reduced water supply during drought, accurate water accounting is critical to distribute the limited irrigation water resource properly.

E.1.5.2. Sub-criterion No. E2. Disadvantaged or Underserved Communities

Points will be awarded based on the extent to which the Project serves economically disadvantaged or underserved communities in rural or urban areas.

- *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. 2019 data from the U.S. Census Bureau reports that the annual median household income for the State of Montana is **\$54,970**. The median annual income for Pondera County in the PCCRC is **\$51,151** which is less than the statewide annual median household level as shown in the table below:

PCCRC County	2019 Median Household Income
Pondera	\$51,151.00

Section 1015 of the Cooperative Watershed Act defines a disadvantaged community as one with an annual median household income that is less than 100 percent of the statewide annual median household income for the State. Consequently, the project area meets the criteria for a disadvantaged community in PCCRC. (<https://data.census.gov>)

- *Please describe in detail how the community is disadvantaged based on a combination of variables that may include:*

As described above, Pondera County exhibits median household incomes at 93% of the State's median household income. In 2019, the county had a 19.3% poverty rate per DATA USA. The county relies heavily on the agricultural industry as a leading source of employment and revenue. During the current drought, the water shortage has increased the burden on one of the county's

main industries - agriculture. Lower agricultural production due to water shortage affects other industries, including retail, import/export, and energy.

- *If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.*

Agricultural operators in PCCRC and the Upper Missouri River Drainage of Montana have experienced narrow profit margins for several years for many of the commodities that they produce. Despite recent increases in agriculture commodity prices profit margins remain to be narrow because of increasing input prices for fuel, fertilizer, herbicides/pesticides, and seeds. An efficient water shortage/drought policy will better distribute water in times of shortage, leaving more water to be used by these farms to generate income.

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?*

The southern border of the Blackfeet Reservation is formed by Birch Creek. The Blackfeet Tribe possesses reserved Birch Creek Water Rights. Although the proposed project has no known direct benefit to the tribes, PCCRC also has significant valid water rights within Birch Creek. The B-Canal conveys much of PCCRC's Birch Creek Water into the Dupuyer Creek Channel immediately upstream of the Dupuyer Creek Diversion. Birch Creek Water is stored in both Swift Dam and Lake Frances and is utilized throughout many areas of the irrigation project. The Blackfeet Tribe would benefit indirectly from the meter upgrade project. The proposed meter upgrades would provide an avenue for conflict risk mitigation by way of improved, transparent, and more frequent measurement and record keeping. These changes would help increase operational transparency amongst all of the stakeholders involved the use of Birch Creek and Dupuyer Creek Waters.

- *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?*

While the proposed project has no known direct benefit to the tribes, the proposed project will support the water sustainability and drought resiliency of the watershed to benefit of public health and safety of all water users in the basin.

Environmental and Cultural Resources Compliance

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.

PCCRC plans to accomplish meter upgrades or improvements with this project. The meters will be in the same locations as previous meters and any environmental impacts will be negligible. No earthwork or channel disturbances are planned as part of this project.

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?

Results from the Montana Natural Heritage Program (MTNHP) and the USFWS indicate that the only threatened or endangered species with potential to frequent the proposed project areas are the grizzly bear and golden eagle. The existing flowmeters are installed every spring, used through irrigation, then removed for winter storage. Nothing about the proposed project will change the current installation practices, nor increase disturbances to wildlife. No disturbances are planned as part of this work. As such, endangered species will not be adversely affected.

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.

A search was conducted on the National Wetlands Inventory (NWI) website to determine if any of the freshwater emergent wetlands occurring within the PCCRC's service areas exist within proximity to the 38 existing flow monitoring sites. Because irrigation water delivered down PCCRC's ditches and canals is the only consistent source of water, these wetlands are considered by the PCCRC to be caused unintentionally as a byproduct of irrigation. Based upon the available information, no Waters of the United States are believed to be negatively impacted by the proposed project. No wetlands will be disturbed by proposed project-related activities. Regardless the proposed project will include all permits and environmental actions (as needed) in order to be fully compliant with all rules, regulations, and laws.

When was the water delivery system constructed?

Construction of PCCRC began in 1886 under the management of the Valier land and Water Company. After changing hands in the early 1900's, the project was incorporated in 1927 as the Pondera County Canal and Reservoir Company. Infrastructure was finally complete in 1948 and in 1953 ownership of the project was transferred to the individual shareholders.

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.

No changes will be made to canals, headgates, or flumes as a result of this project. Meters are normally removed every year in the off-season to protect from freezing and to perform maintenance. Upgrades for SCADA automation of meter reading will take place at that time.

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 PCCRC does not have structures or features eligible for listing. No site or infrastructure changes are planned as part of this work. No site disturbances or changes are planned. The retrofitted flowmeters will be secured for service using the existing mounts, structures, hardware and installations.

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

The PCCRC is not aware of any archeological sites in the proposed project area. If any archeological sites are discovered to be affected during implementation, work will be halted and the appropriate environmental process will be followed.

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

Replacement of the existing mechanical flowmeter registers is not anticipated to adversely affect 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?

Not applicable. No sacred sites, or tribal lands will be affected by the proposed project.

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

Care will be taken to prevent the spread of noxious weeds or non-native invasive species. No surface disturbances or reseeding are anticipated as a result of the proposed project

Project Budget

Funding Plan

Funding Sources	% of Total Study Cost	Total Cost by Source
Costs to be reimbursed with the requested federal funding	50.0%	\$24,675.00
In-Kind Labor Contributions and Costs paid by Applicant	50.0%	\$24,675.93
Totals	100%	\$49,350.93

Budget Item Description	Computation \$/unit	Quantity	Quantity Type (hours/days)	Total Cost
In-Kind Labor: PCCRC Staff Wage Rates				
Project Manager/Engineer*	\$69.51	19	hours	\$1,320.69
Construction Foreman*	\$40.37	10	hours	\$403.70
Maintenance Lead*	\$37.08	38	hours	\$1,409.04
Mechanic/Flowmeter Technician*	\$36.90	95	hours	\$3,505.50
			hours	\$0.00
				\$6,638.93
Fringe Benefits				
	No fringe benefits provided by this project			
Travel				
	No federal funds to be used for travel to install equipment			
Equipment				
Digital Register for M1700	\$690.00	38	ea	\$26,220
Register Protector	\$40.00	38	ea	\$1,520
Bearing Assembly for Digital Register	\$394.00	38	ea	\$14,972
			ea	\$0
Subtotal				\$42,712
Supplies and Materials				
				\$0
Subtotal				\$0
Contractual/Construction*				
Subtotal				\$0
Total Project Costs				\$49,350.93
* Potential In-Kind Funds				

Funding for our project will be provided by the WaterSMART grant and the PCCRC. No letters of commitment from outside sources will be needed.

Budget Narrative

The estimated project cost is **\$49,350.93** Upon delivery of the supplies, the grant funds from the BOR will help pay for the equipment purchased from the meter distributors. Prices for meter accessories for upgrades have been obtained from McCrometer Certified Service Providers to establish budgetary prices for this project

In-kind contributions of **\$24,675.93** will be a combination of cash required to purchase meters and staff time and services required for the administration and field work to upgrade and install the meters. PCCRC will be responsible for all the labor, equipment, and the materials needed for meter installation at the sites to accommodate the new equipment. Construction time in the amount of **\$6,638.93** in staff time is reflected in the budget as an in-kind project contribution.

In-kind contributions that do not cover PCCRC's budget share will be made up by the PCCRC Watershed Improvement Fund. The expenditures benefit the project by improving PCCRC's ability to monitor and deliver constant water flows to the producers and to our own canals and laterals.

Total Costs

The PCCRC requests **\$24,675.00** from the Bureau's Small-Scale Water Efficiency Grant. The remaining \$24,350.93 will come from the Pondera County Canal & Reservoir Company in cash and in-kind services.

Unique Entity Identifier and System for Award

Pondera County Canal & Reservoir Company is registered on the SYSTEM for Award Management (SAM). The SAMs unique entity identifier is **CKWDAWDKEJB3**. The Cage Code is **5PZC6**. The Pondera County Canal & Reservoir Company will maintain an active SAM registration throughout the project.

Pondera County Canal & Reservoir Company

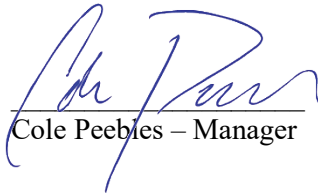
WATER CONSERVATION PLAN

(2022 UPDATE)

Letter of Intent

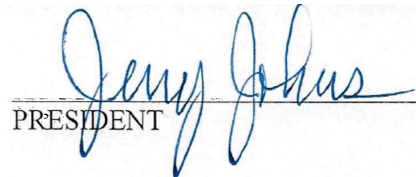
The Pondera County Canal & Reservoir Company (PCCRC) is planning for, and implementing, economically and technically feasible water conservation alternatives that have been identified as potentially beneficial to the Irrigation Project, the water users, and the environment. The PCCRC intends to utilize this plan and the program described herein to accomplish our long-term water conservation goals.

This Water Conservation Plan is a dynamic document and will be updated and modified as needed to meet our long term water conservation and irrigation delivery goals.



Cole Peebles – Manager

2/2/2022
Date



PRESIDENT

2/2/2022
Date