



Quincy-Columbia Basin Irrigation District

Automation of W38 Lateral Headgate of the West Canal

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Executive Summary

Application Date: *April 28, 2022*

Applicant Name: *Quincy-Columbia Basin Irrigation District (QCBID)*

City: *City of Quincy*

County: *Grant County*

State: *Washington State*

- QCBID is a Category A applicant (water district).
- Construction start date is estimated to be February 12, 2024.
- Construction end date is estimated to be February 16, 2024.
- The length of construction time is estimated to be 1 week.
- This project is located on a Federal facility.

QCBID, located in the Columbia Basin Project in central Washington, in partnership with Rubicon Water, will install an automated precision flow meter (SlipMeter) at the headgate of the W38 lateral on the West Canal. Rubicon's automated gate technology allows for near-instantaneous reactions to changes in flow rate, is able to be operated in the field and remotely, and boasts a 90%+ water distribution efficiency. The SlipMeter's ability to accurately measure high and low flow rates and to automatically adjust itself to maximize efficiency will conserve 279 acre-feet of water annually. This project meets the goals of the Columbia Basin Project Coordinated Conservation Plan of 2010.

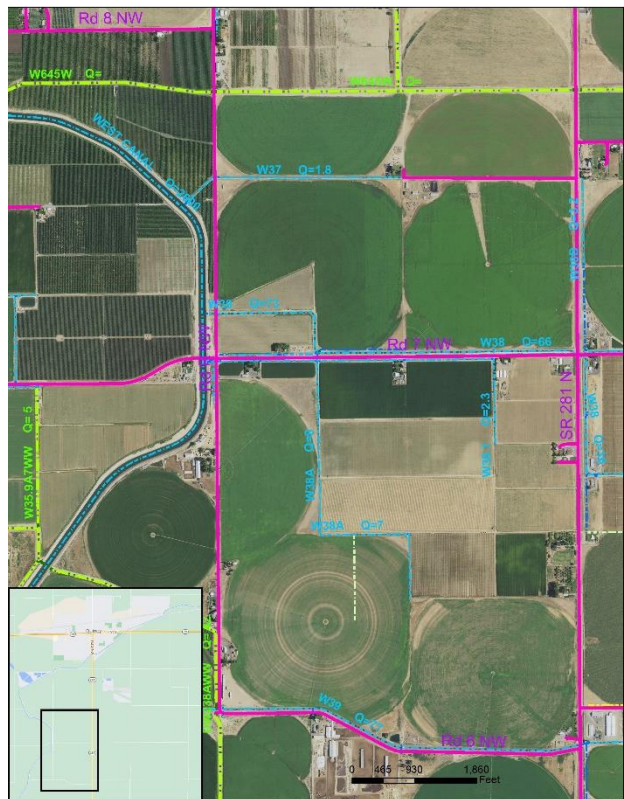
Project Location

The Quincy-Columbia Basin Irrigation District is located in central Washington, within the Bureau of Reclamation's Pacific Northwest Region and is part of Reclamation's Columbia Basin Project. QCBID's headquarters are located on the southern edge of the city of Quincy, WA. The District operates and maintains a portion of the Columbia Basin Project, under contract with the Bureau of Reclamation's Ephrata Field Office.

The W38 lateral headgate is located at near the 38-mile marker on QCBID's main canal, known as the West Canal. This headgate is approximately 3 miles south of QCBID's headquarters in Quincy, WA. The coordinates for the W38 headgate are 47.1922° N and -119.8758° W.



Location of Columbia Basin Project



Location of W38 lateral turnout in relation to Quincy

Technical Project Description

The section of canal upstream of the W38 lateral sees significant changes in water flow each day, which results in unpredictable changes of the water elevation at the W38 headgate. As a result, the W38 lateral system must be run with more water than is necessary to account for these fluctuations. The excess water exits the system through a wasteway and is ultimately unused. This operational waste contributes to a higher total flow that must be run throughout QCBID's water season, and especially during peak water deliveries excess wasted water can result in dangerously high water levels.

To overcome these challenges, QCBID will replace the existing underflow gate at the W38 headgate with a Rubicon SlipMeter. The SlipMeter is a precision flow meter that measures fully submerged flows and mounts directly to the headwall. The SlipMeter is equipped with a separate standalone control pedestal and includes a display and control keypad. As part of its automated control setup, the SlipMeter is able to calculate the flow of water at the W38 headgate in real-time and adjust itself to provide accurate, near-instantaneous flow control. Installing a SlipMeter will give the W38 lateral more than 90% efficiency in water deliveries, and will save 279 acre-feet annually by reducing wasted water

Evaluation Criteria

Criterion A: Project Benefits (35 points)

- *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.*
 - *Explain the significance of the anticipated water management benefits for the Category A applicant's water delivery system and customers. Consider:*
 - *Are customers not currently getting their full water right at certain times of year?*
 - *Does this project have the potential to prevent lawsuits or water calls?*
 - *What are the consequences of not making the improvement?*
 - *Are customer water restrictions currently required?*
 - *Other significant concerns that support the need for the project.*

ANSWER: Automatic regulation of flow will reduce excess spill caused by elevation changes in QCBID's main West Canal. This improved flow management will have many benefits including water conservation (279 acre feet per year), more reliable water deliveries to farms, reductions in the use of aquatic weed chemicals and their spill to natural waterbodies, and operational cost savings by eliminating the need for manual adjustments. This water conservation will also reduce the need for water rationing during peak water delivery in the summer, which takes away from farmers receiving their full water allotment when they need it the most.

This project will help meet the goals of the Columbia Basin Project Coordinated Water Conservation Plan which identifies canal automation as means to conserve water. The District through its development of system improvement planning has identified automation of the W38 lateral turnout as a key water savings opportunity.

- **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?

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

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

ANSWER: Rubicon Water automation technology is slowly being integrated into more and more water districts within the Pacific Northwest Region, and several of QCBID's neighboring districts have made use of Rubicon's water efficiency systems as well. There has already been collaboration with various districts in regards to implementing and operating Rubicon technology (namely the East Columbia Basin Irrigation District and Naches-Selah Irrigation District), and continuing to implement Rubicon systems will bring more experience and technical knowledge of cutting-edge irrigation technologies to the Pacific Northwest.

Automating the W38 headgate will help alleviate the need for rationing water during drought conditions. At peak water delivery levels in the summer, QCBID has had to ration water almost every year for the last 10 years. These conditions that necessitate rationing usually occur during the hottest, driest, parts of summer when landowners need the most water. Saving water deliveries on the W38 lateral would lower the total amount to water required to operate QCBID's canal system by 279 acre-feet each year, reducing the need for rationing district-wide.

Criterion B: Planning Efforts Supporting the Project (30 points)

- **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.*

ANSWER: Automating the W38 headgate is supported and is in line with the Columbia Basin Project Coordinated Water Conservation Plan of 2010. The main goal of the Coordinated Water Conservation Plan is to identify water conservation projects that will allow additional acreage to be served without disrupting existing water supply and while remaining water budget neutral. This plan was developed and agreed upon in coordination by the three water districts in the Columbia Basin Project (The Quincy-Columbia Basin Irrigation District, the east Columbia Basin Irrigation District, and the South Columbia Basin Irrigation District), as well as the Washington State Department of Ecology.

- **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 will implement a goal or address a need or problem identified in the existing planning effort?*

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

ANSWER: The Coordinated Water Conservation Plan includes a list of long-term projects that QCBID has identified that could be implemented to achieve greater water conservation. In order to further this, QCBID maintains a rolling list of system improvement items that are influenced by these water conservation plans. Automation of the W38 headgate was proposed in 2010 and added to the system improvement list as means to improve flow control and improve operation efficiency. The automation of the W38 headgate will save 279 acre-feet per year, and has been determined as a priority for QCBID because of the immediacy of realized water savings and success of installation of Rubicon gates in the past.

Criterion C: Implementation and Results (20 points)

- *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.*

ANSWER: The District plans a to implement this project in February of 2024.

- Two days for removal of the existing slide gate.
- Three days to install the SlipMeter frame and pedestal, lifting of the meter into the frame, and wiring the control pedestal.
- One day for commissioning and training by Rubicon in the operation and maintenance of the meter.
- *Describe any permits that will be required, along with the process for obtaining such permits.*

ANSWER: No permits are required.

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

ANSWER: QCBID staff has performed the design work needed to remove the existing gates, determined modifications needed to be made to the existing concrete structure, and evaluated the SlipMeter sizing and requirements. Rubicon Water staff has provided dimensions and specifications for the SlipMeter.

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

ANSWER: There are no new policies or administrative actions required.

- *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?*

ANSWER: QCBID has installed similar SlipMeters in the past and environmental compliance was completed in collaboration with the local Reclamation office for each previous instance. The costs and timelines for these projects were used as an estimate. These costs and time estimates have been discussed with the local Reclamation office.

Criterion D: Nexus to Reclamation (10 points).

Is the proposed project connected to a Reclamation project or activity? If so, how? Please consider the following:

- *Does the applicant receive Reclamation project water?*
- *Is the project on Reclamation project lands or involving Reclamation facilities?*
- *Is the project in the same basin as a Reclamation project or activity?*
- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

ANSWER: The Quincy-Columbia Basin Irrigation District is located within Reclamation’s Pacific Northwest Region’s Columbia Basin Project. The District operates and maintains the West Canal and its associated facilities for Reclamation under contract no. 14-16-100-6418. The water received is Reclamation project water. The project is on Reclamation project lands and involves Reclamation facilities. The project will contribute water to a basin where a Reclamation project is located.

Criterion E: Presidential and Department of Interior Priorities (10 points)

- **Sub-criterion No. E1 Climate Change:**
 - *Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.*

ANSWER: This project does not directly contribute to addressing the impacts of climate change.

- *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?*

ANSWER: Automating the W38 headgate will increase the sustainability of water supply and delivery by having more accurate water deliveries with less waste and having a

near instantaneous reaction time to reduce the total amount of water required to operate QCBID's canal system.

- **Sub-criterion No. E2 Disadvantaged or Underserved Communities**

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

ANSWER: The CBP Coordinated Water Conservation Plan of 2010, aims to use water conservation as a tool to allow additional acreage to be farmed while remaining water budget neutral. As a part of the Coordinated Water Conservation Plan, the automation of the W38 lateral will contribute to bringing economic growth to the area by opening more opportunities for irrigable farmland.

- *Please describe in detail how the community is disadvantaged based on a combination of variables that may include:*
 - *Low income, high and/or persistent poverty*
 - *High unemployment and underemployment*
 - *Racial and ethnic residential segregation, particularly where the segregation stems from discrimination by government entities*
 - *Linguistic isolation*
 - *High housing cost burden and substandard housing*
 - *Distressed neighborhoods*
 - *High transportation cost burden and/or low transportation access*
 - *Disproportionate environmental stressor burden and high cumulative impacts*
 - *Limited water and sanitation access and affordability*
 - *Disproportionate impacts from climate change*
 - *High energy cost burden and low energy access*
 - *Jobs lost through energy transition*
 - *Access to healthcare*

ANSWER: The geographic area that QCBID encompasses is home to a large Hispanic population. According to the 2010 census, 74% of individuals living in the city of Quincy identify as Hispanic or Latino, as do 75% of individuals in the city of George and 89% of individuals in Royal City. In all of these cities there are a significant number of individuals and families living below the poverty line. As irrigation and farming is one of the largest sectors of employment in the area, providing more opportunities for irrigable acreage within QCBID will bring more jobs to the area and benefit the local population.

- *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 population 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.

ANSWER: Under the definition of “underserved communities” in E.O. 13895 Sec. 2(b), The population of the city of Quincy, city of George, and the surrounding area within QCBID qualify as an underserved community as the majority of individuals identify as Hispanic or Latino and live in rural areas.

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

- *Does the proposed project directly serve and/or benefit a Tribe? Will the project improve water management for a Tribe?*
- *Does the proposed project support Tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety by addressing water quality, new water supplies, or economic growth opportunities?*

ANSWER: Water that is conserved is left in the Columbia River where it is available to meet tribal interests such as providing more water for endangered Salmon.

Overlap or Duplication of Effort Statement

There is no overlap between the proposed project and other active or anticipated proposals or projects, nor is there expected to be any overlap from the submission of this application to the proposed completion of the project.

This proposal does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source – whether it be Federal or non-Federal.

Project Budget

Funding Plan and Letters of Funding Commitment

The District's contribution to the cost share requirement will be approximately 89.2% monetary and 9.8% in-kind. Source funds will come from 2022 assessments. The District will not seek to include in-kind costs incurred before the anticipated project start date. Project expenses that have already occurred, but which will not be included in the project include administrative and engineering work to provide existing facility designs and review of initial proposal information regarding design concepts for the project.

Budget Proposal

The District's contribution to the cost share requirement will be \$30,758. This project will be budgeted on the District's annual operating budget which is funded by landowner assessments. There are no funding time constraints for this project or other contingencies associated with the funding commitment. The District's contribution to the cost-share requirement will be both monetary and in-kind. No expenditures will occur prior to receiving funding.

Table 1

FUNDING SOURCES	AMOUNT
Non Federal (QCBID)	\$30,758
Requested Reclamation Funding	\$30,758
Total Project Funding	\$61,516

Table 2

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$30,758
Costs to be paid by the applicant	\$30,758
Value of third-party contributions	\$0
Total Project Cost	\$61,516

Table 3

Budget Item & Description	\$/Unit		Quantity	Total Cost
Salaries & Wages				
Technical Services Assistant Manager	\$ 60	hr	1	\$60
O&M Assistant Manager	\$ 52	hr	2	\$104
Quincy Watermaster	\$ 35	hr	16	\$560
Quincy Assistant Watermaster	\$ 31	hr	40	\$1,240
Canal Maintenance Staff	\$ 26	hr	40	\$1,040
Fringe Benefits				
Full-time Employees	\$ 18	hr	99	\$1,782
Contractual				
Rubicon Water with tax				\$36,430
Other				
Cultural Resources & NEPA				\$20,300
Total				\$61,516

Budget Narrative

Salaries and Wages

The District will provide construction assistance from the Quincy Watermaster office. A two-man crew consisting of the Quincy Assistant Watermaster and one Canal Maintenance Staff will be used to remove the existing gate equipment. The same crew will provide assistance to Rubicon Water for supply of equipment or crane services. Construction oversight will be conducted by the Quincy Watermaster. Project oversight and system operating criteria will be provided by the Technical Services Assistant Manager (John Mele), and Operation and Maintenance Assistant Manager (Troy Freeman). Salaries and wages for all positions, as well as estimated hours worked on the project, can be found in Table 3 above.

Fringe Benefits

Fringe benefits are estimated to be approximately \$18 per hour. Costs were reported by the District's Human Resource Program Manager and are based on a 2014 survey of all employees.

Travel

Travel expense is not expected for the proposed project.

Equipment

Equipment expense is not expected for the proposed project.

Materials and Supplies

The District will enter into an agreement with Rubicon Water for the purchase of one new SlipMeter and corresponding SCADA hardware.

Contractual

The District will enter into an agreement with Rubicon Water to perform installation, start-up and commissioning of the new equipment.

The District will contract with concrete cutting company to cut 16' of 12" thick concrete.

Third-Party In-Kind Contributions

There are no third-party in-kind contributions expected for this project outside of the above-mentioned contractual work.

Environmental and Regulatory Compliance Costs

There are no expected permits required for the completion of the proposed project. A line item has been included in the budget to cover cost incurred to determine the level of environmental review required for the project.

Reporting

Reporting expenses have been included in the budget to cover costs associated with reporting requirements. All reporting will be performed by District staff

Other Expenses

There are no other expected expenses for the proposed project.

Indirect Costs

No indirect costs are expected for the proposed project.

Environmental and Cultural Resources Compliance

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

There are no known impacts to air and water quality or animal habitat.

- 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?

There are no known listed or proposed to be listed Federal threatened or endangered species, or designated critical habitat in the project area. This was verified by Reclamation's Ephrata Field Office.

- 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 project may have.

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

- 4) When was the water delivery system constructed?

The water delivery system was constructed in 1959.

- 5) Will the 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.

There are no known prior alterations or modifications to proposed project features.

- 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.

There are no buildings, structures, or features listed or eligible for listing on the National Register of Historic Places. This was verified by Reclamation's Ephrata Field Office.

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

There are no known archaeological sites in the proposed project area.

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

The project will not have a disproportionately high and adverse effect on low income or minority populations.

9) Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The project will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

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

The 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.