



# Quincy-Columbia Basin Irrigation District

## Automation of W32.9 Lateral Turnout of the West Canal



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## Executive Summary

Application Date: July 31, 2018

Applicant Name: Quincy-Columbia Basin Irrigation District

City: Quincy

County: Grant County

State: Washington State

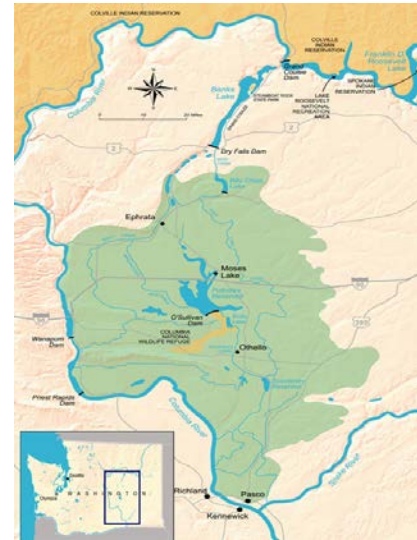
Estimated Project Timeframe: September 2018 through April 2019

Project Location: United States Bureau of Reclamation's Columbia Basin Project; a Federal Facility

The District proposes to install a Rubicon Water automated precision flow meter (SlipMeter) for the W32.9 lateral. The SlipMeter's ability to accurately measure high and low flow rates and to automatically adjust will conserve 208 acre-feet of water annually. The total cost to implement the proposed project is \$51,053. Of this amount, \$25,526.50 has been committed by the District. Reclamation's investment of \$25,526.50 would complete the funding that is needed to complete the project.

# Background Data

The Quincy-Columbia Basin Irrigation District is located in east central Washington, within Reclamation's Pacific Northwest Region and is part of the Bureau of Reclamation's Columbia Basin Project. The Columbia Basin Project serves approximately 671,000 acres of farmland. Water is pumped uphill from Lake Roosevelt behind Grand Coulee Dam into Banks Lake Reservoir where it is diverted onward through over 300 miles of project main canals and 5,500 miles of laterals, drains, and wasteways. Water is primarily used for irrigation, but in limited circumstances is used for municipal and industrial purposes. Over 90 different crops are grown with apples, wheat, and corn being the largest value crops. Other benefits of the Columbia Basin Project include recreation, habitat creation, flood control, and power generation.



District Headquarters are located in Quincy, Washington approximately 17 miles west of Ephrata, Washington. The District operates and maintains a portion of the Columbia Basin Project, under contract with the Bureau of Reclamation's Ephrata Field Office. The District's main canal is 89 miles long in addition to several thousand miles of laterals, wasteways, and drains. The Quincy-District serves approximately 250,000 acres of farmland.

In an effort to conserve water, the District consulted with Montgomery Water Group in 2002 to develop a Water Conservation Plan. Additionally, the District has entered into a coordinated water conservation plan with the East and South Columbia Basin Irrigation Districts and the Washington State Department of Ecology to allow additional irrigation acreage to be served, while remaining water budget neutral on the Columbia River. Long-term planning is essential to solving future water resource problems such as project water shortages. Since 2006, the District has conserved over 546 acre-feet of water by completing over 65 miles of piping and canal lining projects.

The coordinated water conservation plans identified canal automation as means to conserve water. The District through its development of system improvement planning has identified automation of the W32.9 lateral turnout as a key water savings opportunity.

## Technical Project Description

The section of canal upstream of the W32.9 lateral sees significant flow changes each day which result in changes of elevation in water level. This results in significant changes of flow through the lateral turnout and resultant surplus delivery which is lost as operational spill. Automation of

the turnout gate will account for these elevation changes and maintain a constant flow set point, and would save 208 AF annually by reducing spill.

The District has considered various options to automate this site over the years, but it has been complicated by lack of power.

To overcome these challenges, the District is proposing to replace the one existing slide gates with Rubicon SlipMeters. 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. The SlipMeter is supplied complete with an integrated power supply comprising an 85W solar panel, a solar regulator, and a 48Amp hour 12-volt deep cycling battery pack.

## Evaluation Criteria

### Criterion A: Project Benefits

- *Describe the expected benefits and outcomes of implementing the proposed project.*
  - *What are the benefits to the applicant's water supply delivery system?*
  - *If other benefits are expected explain those as well. Consider the following:*
    - *Extent to which the proposed project improves overall water supply reliability.*
    - *The expected geographic scope benefits from the proposed project.*
    - *Extent to which the proposed project will increase collaboration and information sharing among water managers in the region.*
    - *Any anticipated positive impacts/benefits to local sectors and economies.*
    - *Extent to which the project will complement work done in coordination with NRCS in the area.*

ANSWER: Automatic regulation of flow will reduce excess spill caused by elevation changes in the District's main West Canal. This improved flow management will have many benefits including water conservation (208 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 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 W32.9 lateral turnout as a key water savings opportunity.

The use of automated infrastructure is limited on Columbia Basin Project and other local irrigation districts, yet the technology offers extensive benefits as described above. Utilization of new technology will likely promote increased area interest and use.

### **Criterion B: Planning Efforts Supporting the Project**

*Describe how your project is supported by an existing planning effort.*

- *Does the proposed project 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 Quincy-Columbia Basin Irrigation District developed a Water Conservation Plan in March 2002, which was prepared by Montgomery Water Group. One goal of the plan is canal automation to improve conservation. Additionally, the District has entered into a coordinated water conservation plan with the East and South Columbia Basin Irrigation Districts and the Washington State Department of Ecology. The District maintains a rolling list of system improvement items that are influenced by these water conservation plans. Automation of the W32.9 Lateral was proposed in 2010 and added to the system improvement list as means to improve flow control and improve operation efficiency.

### **Criterion C: Project Implementation**

- *Describe the implementation plan for the proposed project.*

ANSWER: The District plans to implement this project in March 2019.

- 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.*

ANSWER: No permits are required.

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

ANSWER: The District 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.

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

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

- *Described how the environmental compliance estimate was developed. Have compliance costs been discussed with the local Reclamation office?*

ANSWER: The District installed a similar SlipMeter and environmental compliance was completed in collaboration with the local Reclamation office. The costs for this project were used as an estimate. These costs were discussed with the local Reclamation office.

#### **Criterion D: Nexus to Reclamation (10 points).**

*Is the proposed project connected to a Reclamation project or activity?*

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

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.

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.

#### **Criterion E: Department of Interior Priorities**

ANSWER: This project supports the Department of Interior Priority of "Modernizing our Infrastructure".

## **Project Budget Funding Plan**

The District's contribution to the cost share requirement will be approximate 91% monetary and 9% in-kind. Source funds will come from 2018 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 \$26,876.50. 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. There will be no funding from other federal partners. There are no pending funding requests that have not yet been approved.

Non Federal (QCBID)	\$25,526.50
Other Federal Entities	\$0
Requested Reclamation Funding	\$25,526.50
Total Project Funding	\$51,053

Budget Item & Description	\$/Unit		Quantity	Total Cost
<b>Salaries &amp; Wages</b>				
Technical Services Assistant Manager	\$ 56	hr	1	\$56
O&M Assistant Manager	\$ 48	hr	2	\$96
Watermaster	\$ 31	hr	16	\$496
Assistant Watermaster	\$ 29	hr	40	\$1,160
Canal Maintenance	\$ 23	hr	40	\$920
<b>Fringe Benefits</b>	\$ 15	hr	99	\$1,485
<b>Contractual</b>				
Rubicon Water with tax				\$29,340
<b>Other</b>				
Cultural Resources & NEPA				\$17,057
<b>Total</b>				<b>\$51,053</b>

### *Salaries and Wages*

The District will provide construction assistance from the Watermaster office. A two-man crew will be used to remove the existing gate equipment. The same crew will provide assistance to ProCut and Rubicon Water for supply of equipment or crane services. Construction oversight will be conducted by the Watermaster. Project oversight and system operating criteria will be provided by the Technical Service Assistant Manager (Roger Sonnichsen), and Operation and Maintenance Assistant Manager (Troy Freeman).

### *Fringe Benefits*

Fringe benefits are estimated to be approximately \$15 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*

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

### *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

### *Indirect Costs*

No indirect costs are included.

### *Total Costs*

Total project total cost is expected to be \$51,053.

## **Environmental and Cultural Resources Compliance**

Cultural resources and historic preservation act compliance have already been completed for this project.

- 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., head gates, 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?

There 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.

# Official Resolution

## QUINCY-COLUMBIA BASIN IRRIGATION DISTRICT

### RESOLUTION 2018 - 16

#### WaterSMART Grant: Small-Scale Efficiency Projects

**WHEREAS**, the Quincy-Columbia Basin Irrigation District is in receipt of the U.S. Bureau of Reclamation Funding Opportunity Announcement BOR-DO-18-F009, *WaterSMART Grant: Small-Scale Efficiency Project for FY 2018*; and

**WHEREAS**, the Quincy-Columbia Basin Irrigation District has legal authority to enter into a grant agreement with the U.S. Bureau of Reclamation; and

**WHEREAS**, the Board of Directors of the Quincy-Columbia Basin Irrigation District supports the application submitted; and

**WHEREAS**, the Quincy-Columbia Basin Irrigation District is capable of providing the amount of funding and/or in-kind contributions specified in the funding plan; and

**WHEREAS**, the Quincy-Columbia Basin Irrigation District will work with the U.S. Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement; and

**WHEREAS**, receiving financial assistance through a WaterSMART Grant does not subject the Quincy-Columbia Basin Irrigation District to the discretionary provisions of the Reclamation Reform Act of 1982;

**NOW, THEREFORE, BE IT HEREBY RESOLVED** by the Board of Directors that the Quincy-Columbia Basin Irrigation District is committed to the financial and legal obligations associated with receipt of WaterSMART Grant financial assistance.

**DULY ADOPTED** during the regular meeting of the Board of Directors this 3<sup>rd</sup> day of July 2018.



ATTEST:

Secretary

BOARD OF DIRECTORS

The block contains five horizontal lines, each with a handwritten signature in blue ink. The signatures are: 1. A large, stylized signature. 2. A signature that appears to be "R. G. G.". 3. A signature that appears to be "W. Morgan". 4. A signature that appears to be "B. Stem". 5. A signature that appears to be "M. L. L.". Each signature is written over a horizontal line.