



COLUMBIA
IRRIGATION DISTRICT



Columbia Irrigation District

Mid System Canal Automation

Applicant Contact:

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Technical Proposal and Evaluation Criteria

Executive Summary

Applicant Information

Application Date: April 6th, 2022

Applicant Name: Columbia Irrigation District (CID)

City, County, State: Kennewick, Benton County, Washington

Project Manager:

Curt Strifert, District Manager

Columbia Irrigation District

(509) 586-6118

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Requested Reclamation Funding: \$75,000; **Total Project Cost:** \$161,912.70

Project Summary

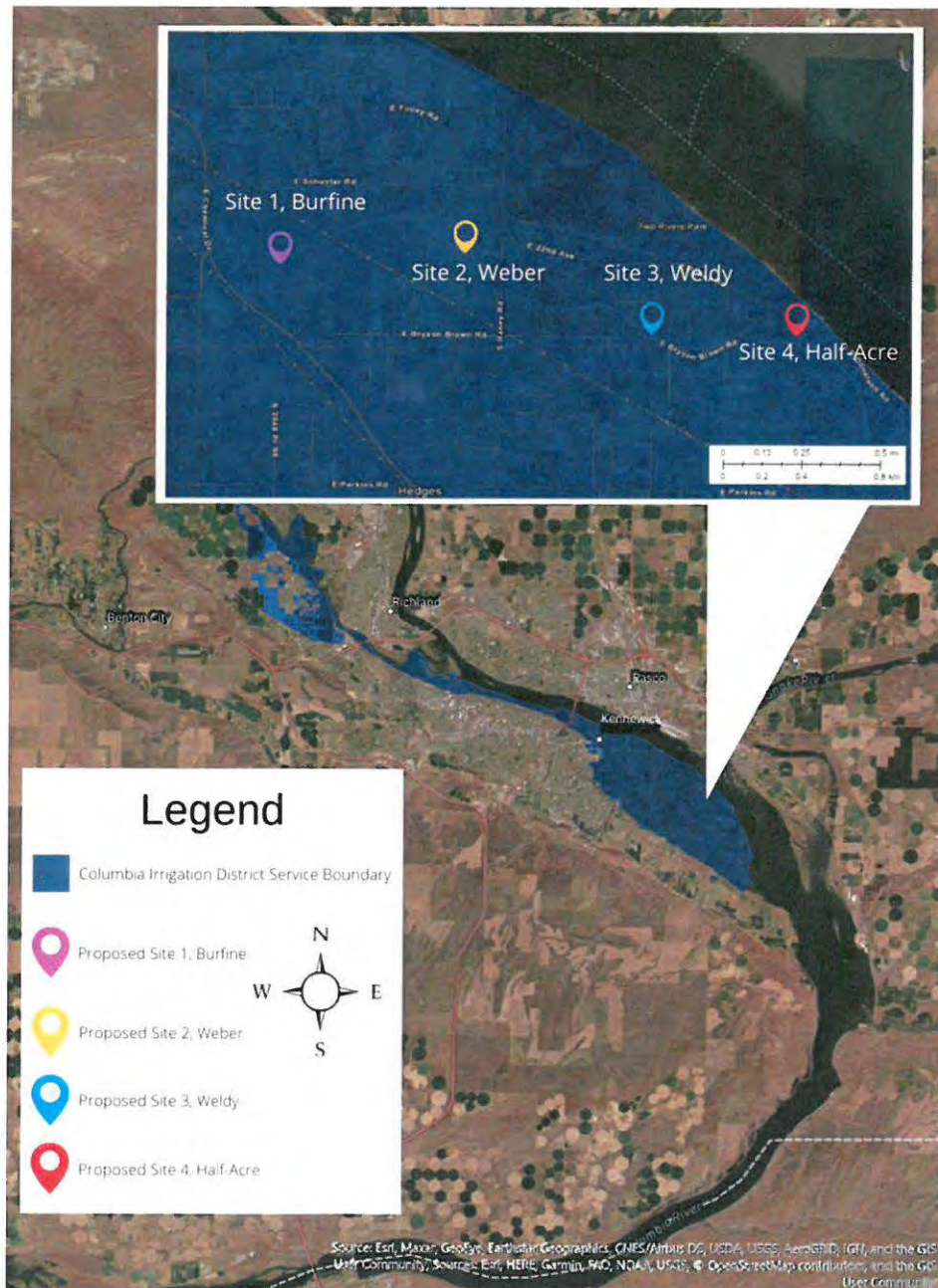
Provide a one paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits and how those benefits relate to the water management issues you plan to address.

Columbia Irrigation District (CID) is a Category A applicant. None of the District's facilities are federally owned, operated or connected to a federal reclamation project. The Columbia Irrigation District, located in south central Washington, proposes to install four Rubicon Water automated precision gates (FlumeGates) for the second lateral. The FlumeGates's ability to accurately measure high and low flow rates and automatically adjust will increase water use efficiency from 5-10%. The work at each of the four sites will involve reconfiguring the current canal structures, typically cutting old concrete and/or adding concrete to the existing structure to accommodate retrofitting of the new gates and relative controls/power units. The addition of these gates will automate the canal operations and provide valuable flow data. The automation of the canals will lead to greater safety, water savings, and improved service. Flow data that is collected from these features will add to the district's understanding of water usage patterns, water losing reaches and provides information to further district water saving efforts while allowing the tracking of water savings amounts realized. The total cost to implement the proposed project is \$160,912.70 Of this amount, \$85,912.70 has been committed by the district. Reclamation's investment of \$75,000 would complete the funding necessary to execute this project. The project is slated to be completed in March 2024 meets the goals of CID's Comprehensive Water Conservation Plan.

Project Location

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

CID's Mid System Canal Automation project is located in Benton County, Washington within the incorporated portions of Kennewick. Project locations are approximately 6.5 miles southeast of downtown Kennewick. The project coordinates are as follows: Site 1 Burfine (46°11'12.6"N 119°04'12.4"W). Site 2, Weber (46°11'14.6"N 119°03'25.7"W), Site 3, Weldy (46°11'00.5"N 119°02'38.7"W), and Site 4, Half-Acre (46°11'00.3"N 119°02'02.1"W).



Technical Project Description

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



Figure 1: Site 1, Burflin



Figure 2: Site 2, Weber



Figure 3: Site 3, Weldy



Figure 4: Site 4, Half-Acre

Each of the above sites will require the same general work but to varying extents for each step. The first objective at each site will be to cut the concrete of the existing board-slot check structure. This will be accomplished using the district's gas-powered concrete saw. The concrete will then be removed and disposed by District's crew using prybars, mini excavator, and dump truck. The site will be prepped with any fill and compaction thereof needed for the placement of the concrete structure to house the new gate. District crews will fabricate concrete forms out of plywood, 2x4's and snap ties for the placement of the concrete. The frame of the new automated check gate will then be affixed to the concrete using concrete anchor bolts drilled

into the new structure and secured with adhesive. Any gaps between the frame and the structure will be filled with speed plug concrete mortar. The solar panel will be set into the concrete pad and the gate will be installed in the frame. Lastly, with the help of a technician from the gate manufacturer the gate will be wired and calibrated. The gates to be used will likely be provided by Rubicon to match all the district's existing gates and make the SCADA system integration seamless.

Evaluation Criteria

Evaluation Criteria A – Project Benefits

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

- *Clearly explain the anticipated water management benefits to the Category A applicant's water supply delivery system and water customers.*
 - ❖ *The middle of the district canal system flows unknown quantities of water during the irrigation season. The quantification of these flows is a critical need of the district's water savings goals. If the quantity and timing of canal flows and wastes are not known, it is difficult to plan and prioritize water savings projects. Also, as the district continues to convert from rural to urban, timing water through the system is increasingly difficult with unknown quantities. The addition of these flow measuring, and water control devices will give the district flow information that is currently unavailable. With this information the district can better time the diversion and delivery of system water to minimize waste and plan future projects to improve service to patrons and save water.*
- *Explain the significance of the anticipated water management benefits for the Category A applicant's water delivery system and customers.*
 - o Are customers not currently getting their full water right at certain times of year?*
 - o Does this project have the potential to prevent lawsuits or water calls?*
 - o What are the consequences of not making the improvement?*
 - o Are customer water restrictions currently required?*
 - o Other significant concerns that support the need for the project.*
 - ❖ *Much of Benton County, Washington is under a level D3 drought as classified by the U.S. Drought Monitor. The consequence of not making the improvement of this automation and monitoring project is that agricultural water throughout the district will continue to be lost through inefficiencies created from lack of data and precise flow metering.*

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

- *Will the project improve broader water supply reliability at sub-basin or basin scale?*
 - ❖ The benefits are expected to be geographically localized to the district and its patrons.

- *Will the proposed project increase collaboration and information sharing among water managers in the region? Please explain.*
 - ❖ The project is expected to improve the district's data and thereby provide more data available for request for other stake holders in the region.

- *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 will allow for more available water to stay in the canal by reducing water delivery inefficiencies that arise from spillage and flow measurement errors. Increasing the amount of water that is kept in the canal positively impacts agricultural producers, and positively impacts riparian ecosystems by allowing excess saved water to be released into the Yakima River.

- *Will the project complement work being done in coordination with NRCS in the area (e.g., the area with a direct connection to the districts water supply)? Please explain.*
 - ❖ None are presently known to the district.

- *Will the project help address drought conditions at the sub-basin or basin scale? Please explain.*
 - ❖ No.

Evaluation Criteria B – Planning Efforts Supporting the Project

Plan Development: Describe how your project is supported by an existing planning effort. Identify the planning effort and who developed it.

- ❖ Yes, see Appendix A
 - The automation of Laterals 1, 2, and 3 were explicitly planned for within the district's conservation plan. Thus far the automation has only been partially implemented.

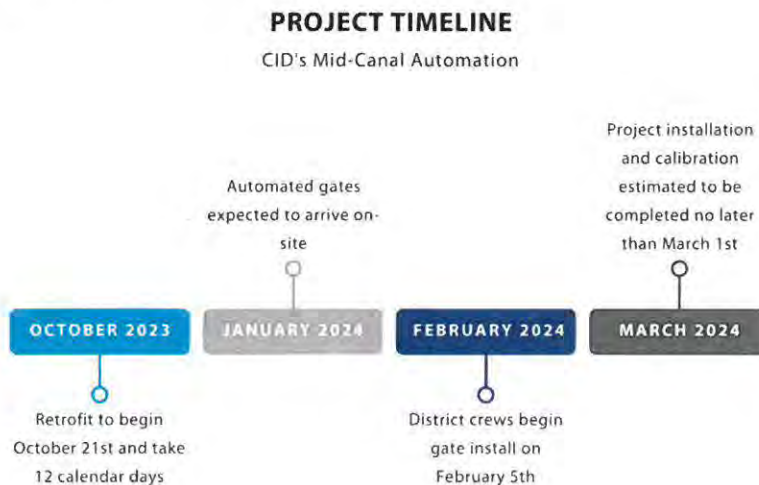
Support for the Project: Describe to what extend the proposed project is supported by the identified plan. Address the following:

- *Is the project identified specifically in the planning effort?*
 - ❖ Yes, long-term automation is identified within the district's conservation plan.

- Explain whether the proposed project implement a goal or address a need or problem identified in the existing planning effort?
 - ❖ Yes, implementation of this project meets the long-term goal outlined within the district’s Comprehensive Water Conservation Plan which outlines automated control structures as a priority. This priority addresses the need for flow automation and control during the irrigation season with the added benefit of data monitoring and recording to guide future planning efforts.
- Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.
 - ❖ This project has been identified as a priority due to the information that can be collected for future planning and conservation efforts. It also provides increased operational capabilities that will provide better service and protection against canal failure.

Evaluation Criteria C – Implementation and Results

- Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.
 - ❖ Implementation of this project will be done in three phases. The district will begin all necessary site prep and retrofitting October 21st 2023. This is estimated to take 8 workdays spread over 12 calendar days. The gates are anticipated to arrive approximately January 2024. District crews will begin install of the gates on February 5th 2024 with technical assistance provided by the manufacturer and the district engineer, if needed. This will take 8 workdays spread over 12 calendar days. Also, we are allowing an additional 10 calendar days after install for any final fine-tuning calibration that might be needed. The gates will all retrofit to existing structure.



- *Describe any permits that will be required, along with the process for obtaining such permits*
 - ❖ No permits are required for this project.
- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*
 - ❖ The gates are fabricated off site and then installed in the retrofitted district facilities.
- *Describe any new policies or administrative actions required to implement the project.*
 - ❖ After the installation, the timing, measurement, and movement of water will be refined for operational efficiency.
- *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?*
 - ❖ The cultural review for the project by the district contractor will be performed and completed by August 2024. The USBR cultural review process usually completes just prior to the notice to proceed. In the District's experience this portion is usually communicated to the district after the announcement of award.

Evaluation Criteria D – Nexus to Reclamation

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

- *Does the applicant receive Reclamation project water?*
 - ❖ No.
- *Is the project on Reclamation project lands or involving Reclamation facilities?*
 - ❖ No.
- *Is the project in the same basin as a Reclamation project or activity?*
 - ❖ Yes.
- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

- ❖ Yes, saved water will potentially increase flows in the Yakima River. However, the District is the last major diverter on the Yakima rendering any saved water useless to other diverters. Saved water is anticipated to only benefit in-stream uses.

Evaluation Criteria E – Presidential and DoI Priorities

Sub-criterion No. E1. Climate Change

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

- *Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.*
 - ❖ Automation of the district’s mid-canal will address the impacts of climate change through the responsible usage of available water. The use of automated FlumeGates increases water conservation between 5-10% of total annual flow. Additionally, the automation of the canal negates the need for individual employees to travel to the site and manage the canal. The elimination of routine vehicle travel reduces the overall carbon emissions associated with manual operations of gates.
- *Does this proposed project strengthen water supply sustainability to increase resilience to climate change?*
 - ❖ Yes, the project will increase the efficiency and sustainability of the delivery of water to agricultural providers by minimizing spillage through automation. Correctly timed releases aid in application efficiency that increase sustainability and resiliency during times of drought brought on by climate change.
- *Does the proposed project contribute to climate change resiliency in other ways not described above?*
 - ❖ Data generated by the automated FlumeGates will quantify fluctuations of water in the canal which will lead to improved long-term resource management and drought planning.

Sub-criterion No. E2. Disadvantaged or Underserved Communities

- *Will the proposed project serve or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety by addressing water quality, new water supplies, or economic growth opportunities.*
 - ❖ Yes, the project will positively impact agricultural producers in the district’s service area that stand to be disproportionately impacted by the effects of climate change.
- *Please 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*
 - ❖ **Growers in the district's service area that are dependent upon consistent flows from the district during the irrigation season are disproportionately affected by climate change as well as disproportionate environmental stressors. Shortages in water due to climate change induced long-term drought create an economic burden on regional growers through reduced crop yield.**
- *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.*
 - ❖ **N/A**

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?*
 - ❖ **Yes. Water that has been conserved through automation provides a minor benefit to the Yakama Nation's fisheries.**
- *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?*

- ❖ Yes. An increase in available water in the Yakima River increases stability of the Yakama Nation’s fish populations in years of drought and lowered flows throughout the river.

Project Budget

Funding Plan and Letters of Commitment

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

- *Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)*
 - ❖ The monetary portion of the project costs will be covered out of the district’s operating budget (may be augmented by reserve funds depending upon timing of award relative to the district budget cycle).
- *Any costs that will be contributed by the applicant*
 - ❖ The remaining portion of the district’s contributions will be in-kind in the form of using District personnel and equipment, as identified in the budget proposal.
- *Any third-party in-kind costs (i.e., goods and services provided by a third party)*
 - ❖ No other contributions toward the non-Federal portion of project costs are anticipated.
- *Any cash requested or received from other non-Federal entities*
 - ❖ None.
- *Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied*
 - ❖ No other funding requests are pending for the proposed project.

Budget Proposal

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

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Columbia Irrigation District	\$85,912.70
Non-Federal Subtotal	\$85,912.70

REQUESTED RECLAMATION FUNDING	\$75,000.00
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Table 2. — Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$75,000.00
Costs to be paid by the applicant	\$85,912.70
Value of third-party contributions	\$0.00
TOTAL PROJECT COST	\$160,912.70

Table 3. — Budget Proposal Mid Canal Automation

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity	TOTAL COST
	\$/Unit	Quantity	Type	
Salaries and Wages				
Project Manager	\$73.27	40	Hours	\$2,930.80
Operations Lead	\$53.42	27	Hours	\$1,442.34
Technical Lead	N/A	0	Hours	\$0.00
Operator	\$48.18	52	Hours	\$2,505.36
Crew Member	\$46.24	20	Hours	\$924.80
Crew Member	\$36.30	16	Hours	\$580.80
Crew Member	\$41.72	12	Hours	\$500.64
Crew Member	\$29.92	20	Hours	\$598.40
Fringe Benefits				
Included in rates shown	Labor Costs	187		\$9,483.14
Contractors				
Environmental Compliance	\$5,500.00	1	Invoice	\$5,500.00
CID EQUIPMENT				
318 Excavator	\$74.68	11	Hours	\$821.48
Mini Excavator	\$22.40	19	Hours	\$425.60
1-Ton Truck	\$53.40	43	Hours	\$2,296.20
½-Ton Truck	\$34.95	36	Hours	\$1,258.20
Truck Chassis & Dump Bed	\$72.89	10	Hours	\$728.90
Concrete saw	\$3.19	8	Hours	\$25.52
Supplies and Materials				
Gate Burfine Line Check	\$28,165	1	Units	\$28,165

Gate Webber Check	\$28,165	1	Units	\$28,165
Gate Weldy Check	\$28,165	1	Units	\$28,165
Gate Half Acre Check	\$28,165	1	Units	\$28,165
Gate Installation, Supervision, and Commissioning	\$1,500	4	Units	\$6,000
Pool Level Tuning	\$1,500	4	Units	\$6,000
SCADA Service Agreement	\$1,000	4	Units	\$4,000
TOTAL DIRECT COSTS				\$149,199.04
Indirect Costs				
Sales Tax	8.60%	\$11,236.76		\$11,236.76
Office Manager	\$47.69	10	Hours	\$476.90
TOTAL INDIRECT COSTS				\$11,713.66
TOTAL PROJECT COSTS				\$160,912.70

Budget Narrative

Salaries and Wages

The Project Manager will be Curt Strifert and the Supervisors will be Bob Ingraham and Jeremy Percifield. The certified current rates of pay for these individuals and for the crew are the rates listed in the budget proposal. These salaries are applied consistently to all Federal and Non-Federal activities of CID and are contractually set to increase 3% effective January 2023. The compliance hours for reporting are estimated at 8 for Admin/Clerical staff and 20 for the Project Manager that are included in the total hours for the Project Manager.

Fringe Benefits

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

Travel

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

Equipment

All equipment to be used on this project is owned by CID or will be purchased by CID. The equipment budget is therefore shown as in-kind contribution by CID as if it is owned by CID. The rates in the budget proposal are in accordance with the USACE equipment rates for region 8. The time estimate for each piece of equipment was determined from the average usage on similar past District projects.

Materials and Supplies

The materials and supplies listed in the budget proposal are all for construction efforts related to the gate site prep and installation. The costs for materials were estimated from budgetary quotes obtained from distributors and past District projects.

Other Expenses

The \$1,500.00 listed as miscellaneous is for unforeseen expenses that might arise such as small electrical components, wire, freight, or small tools that might break.

Indirect Costs

Indirect Costs

The indirect cost represents WA state and local sales taxes and clerical staff time to prepare reports and track project expenses. The clerical staff hourly rate shown in the budget proposal include the fringe benefits.

Environmental and Regulatory Compliance Costs

The amount shown in these line items include an estimated cost for cultural review by a consultant and an amount anticipated to be expended by the USBR during its environmental review process.

Contractual

The only contractual expenditure that is anticipated will be for the consulting need for the cultural and environmental survey of the project area.

Third-Party In-Kind Contributions

The district does not anticipate any contributions matching this description.

Environmental & Cultural Resource Compliance

Please answer the questions from Section H.1. Environmental and Cultural Resource

Considerations in this section.

- *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*
 - ❖ *No, the project will not have any of these effects. There will be limited dust from concrete cutting in the initial phase and it is only projected to last for up to three hours per site for one day.*

- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*
 - ❖ *The District is not aware of any such species in the project area.*
- *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed project may have.*
 - ❖ *No.*

- *When was the water delivery system constructed?*
 - ❖ *1892-1893 with a major update in 1917.*

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*
 - ❖ *The project will add automation apparatus to existing structures. The construction dates vary between 1917-1998.*

- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*
 - ❖ *Yes, the canal system itself is listed.*

- *Are there any known archeological sites in the proposed project area?*
 - ❖ *No.*

- *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*
 - ❖ No.
- *Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?*
 - ❖ No.
- *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*
 - ❖ No.

Required Permits and Approvals

N/A, there are no required permits because the work will be done within current District facilities and rights-of-way.

Official Resolution



COLUMBIA IRRIGATION DISTRICT

Mid-Canal Automation Resolution 2022-1

WHEREAS, the Columbia Irrigation District has begun implementation of a 10- year capital improvements plan; and

WHEREAS, the District recognizes the benefits that canal automation brings to operations including safety and water savings; and

WHEREAS, by adding automated gates the District will protect the integrity of the canal and help conserve water to ensure reliable service to these acres; and

WHEREAS, the Bureau of Reclamation has available WaterSmart grants to help with financing small-scale water efficiency projects.

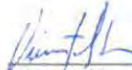
NOW THEREFORE, BE IT RESOLVED that the Columbia Irrigation District authorizes a project to install automated gates throughout the middle section of Lateral 2.

BE IT FURTHER RESOLVED that the Columbia Irrigation District authorizes the pursuit of Reclamation WaterSmart, Small-Scale Water Efficiency monies to help cover the cost of said project.

BE IT FURTHER RESOLVED that Columbia Irrigation District is capable of and commits itself to providing the funds/in-kind contributions outlined in the grant application and to work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

Dated this 15th day of April 2022.

COLUMBIA IRRIGATION ISTRICT


Vincent Shawver, President