

Enterprize Canal Company LTD Headgate Automation Phase 1:  
Installing telemetry systems on eight existing headgates

APPLICANT:

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## **TECHNICAL PROPOSAL AND EVALUATION CRITERIA**

### **Executive Summary**

Date: March 18, 2021

Applicant: Enterprize Canal Company LTD.

Category: A

City: Ririe

County: Jefferson and Bonneville

State: Idaho

We are going to install automated telemetry systems to eight existing headgates located over 2.8 miles of the Enterprize Canal. Increased control of these headgates will allow us to monitor the usage and deliver water amounts more accurately to the patrons they serve. This greater water efficiency will allow us to turn down the headgate on the river which will conserve water, keep our reservoir levels healthier, and have greater groundwater stability and eliminate flooding at the end of property, near gates, or near dwellings. Additionally, once we are able to meter and deliver water accordingly, we will be able to lease extra water (which our contract with the Bureau of Reclamation allows). The funds from those rentals will go back to the canal for maintenance and further improvements. In short, this automation project will conserve water and allow us to operate more self-sufficiently.

The project will take approximately 90 days from start to finish. We anticipate starting construction February 1, 2022 and finishing on or before April 26, 2022. The Enterprize Canal is not located on a federal facility.

### **Project Location**

Project Enterprize Canal Headgate Automation Phase 1 will replace two headgates in Bonneville County, Idaho and the remaining six in Jefferson County, Idaho. The Enterprize Canal borders the city of Ririe, ID in some places, and otherwise is about 1 or 2 miles away from Ririe on the



north and west sides. The proposed headgates are noted below with markers as well as the longitude and latitude.



1. Campbell's Ditch: 43°37'16.1"N 111°47'07.9"W
2. Christensen's Ditch: 43°37'49.3"N 111°47'08.3"W
3. Jensen Ditch: 43°37'56.0"N 111°47'08.2"W
4. Olsen Ditch: 43°38'02"N 111°47'08"W
5. Ferguson Ditch: 43°38'02.9"N 111°47'06.2"W
6. Park Gate: 43°38'15.8"N 111°46'13.4"W
7. Summer's North Pump (headgates 9–12): 43°38'15.4"N 111°45'45.0"W
8. Kelly Ditch: 43°38'15.0"N 111°45'08.6"W

## Project Description and Milestones

Enterprize Canal Company already has existing headgates in place. Most of our headgates are in good repair and have a structure sufficient for the automated telemetry systems we have bids for. There are a few of our headgates that will need to have a wing wall poured first before our systems can be updated. In order to install our systems, we will first need to shore up the existing headgates where needed with gravel and concrete pieces. Once our headgates are prepared if needed, we will install the telemeters by attaching them to the top of the concrete walls and the headgate valves. The first picture shows an installed system with the main box being attached to the concrete structure of the headgate and the meter portion of the telemeter and the open/close feature attached to the gate itself.



Once installed, the telemeters will measure the flow of water and open or close according to the scheduled need of the individual patron based on their water rights. Inside each system we will also install a data recorder to document the water delivery and usage for each patron. Having this data will allow us to ensure that our patrons are getting their full share of water. We will also make this data available to our patrons. We anticipate that this data will help them determine patterns in their current watering practices, and help them see where they can make changes to be more efficient if they so choose. The second picture shows the inside of one of our anticipated telemeter systems. These systems, by local business Metcom Inc., have been successfully installed for some other local regions with great success.



We plan to work on one or two headgates and systems at a time. This way, if we run into any issues through the process, we will have only a couple of headgates out of order (in a worst case scenario) instead of all of them. As noted earlier, we anticipate beginning construction February

1, 2022 and working through our problem headgates one or two at a time until we finish on or before April 26, 2022.

## **Evaluation Criteria**

### **A. Project Benefits (35 points)**

This project will modify and modernize our existing infrastructure. Although our infrastructure is in sound and operable condition, we do have some conflicts that we have thus been unable to resolve.

We currently have some patrons that own 60 inches of water, but take 700 inches. We also have a couple patrons that never close their headgates and so are taking excess water during the entire watering season. The patrons are able to open the headgates when they want which has frustrated our watermaster's best efforts. We have attempted to reconcile these disagreements without success. Automated headgates will allow us to regulate water delivery which will increase water supply reliability for all patrons, especially those towards the end of the line. A regulated water supply will also encourage our patrons to work together to maximize their watering time while also minimizing the overall time that the headgates are open which conserves water and reduces strain on the Snake River and other reservoirs which we draw from on occasion.

### **B. Planning Efforts Supporting the Project (35 points)**

We do have other projects planned, but we feel that this project takes precedence. We have a pretty good idea of how much water we have and where it goes, but we feel that having the telemeter with the data recorders will give us solid numbers and hard data. This in turn will allow us to work with our patrons to solve the current water wasting issue and maintain a good relationship with them. Adding these telemeters will optimize our delivery and optimize our system delivery and reliability.

This project also addresses two objectives in our water conservation plan: Headgate replacement and maintenance and Greater water conservation. As mentioned before, our headgates are overall in good working order, but we inspect them regularly to make sure they are properly taken care of and working well. Although these systems are an addition to the headgates, they will improve the performance and decrease overall maintenance. These telemeters will also help us conserve water by delivering what is needed and not more.

### **C. Project Implementation (10 points)**

Beginning February 1, 2022, we will begin working on our first headgate at Campbell's ditch. We will assess the headgate's condition and make any repairs as necessary, then pour the wing wall. After the wing wall has set, we will have Metcom Inc. install our selected telemeter and

data recorder. We will continue on in this fashion with the remaining headgates. We estimate that each headgate will take about 10 days from start to finish. For eight headgates that gives us 80 days to finish; however, to be safe, we have added an additional 10 days into our schedule, giving us a total of 90 days to have our project completed and operational before we turn on water in the beginning of May 2022.

Because all of the work for this project will take place with existing infrastructure, we do not need to obtain any permits. Because we are modifying and upgrading our current headgate infrastructure, there will be minimal to no disturbance to the environment and culture. Metcom Inc. has already visited each of our headgates and given us quotes for each headgate along with recommendations for any alterations or repairs that need to be done in order to install the telemeters.

#### D. Nexus to Reclamation (10 points)

Like the Bureau of Reclamation, Enterprize Canal Company strives to conserve water and make the most efficient use of the resources we do have. Our region has been faced with drought for many years now and it has become clear that we need to be prepared for dry years every year. Our efforts to conserve and more efficiently use water from the Snake River, Palisades Reservoir, and Jackson Lake will all contribute to a healthier Snake River Basin.

#### E. Department of the Interior and Bureau of Reclamation Priorities (10 points)

Our main goal with this project is to conserve water immediately but to also help our patrons learn to conserve water and be better stewards of their land and their water. We have not been able to resolve our current conflict of water over-usage through any other methods and so we feel that telemeters are the next step in that process. The telemeters will solve the over-usage problem while also bringing awareness to our patrons of their actual usage. Being able to remotely control the headgates will also make our system more efficient as well as our patrons since the opening and closing of the gates can be done more quickly and with very little effort as opposed to the old hand-crank method.

Our water is drawn from the Snake River, Palisades Reservoir, and Jackson Lake. Delivering the water that is apportioned and not more will keep these bodies of water at healthier levels. That will benefit the surrounding water districts as well as the general public as it will allow them to enjoy the recreational benefits these bodies of water bring to our community. Though recent years have been better, this region has been in a long period of drought. There have been several years where water was so scarce that our reservoirs had been drained of most water with many

farmers still not able to get what they needed for their crops. The low levels also made the reservoirs almost unusable for the community. Being able to conserve water means that we will be doing our part to keep our part of the state beautiful and functional for all.

As our infrastructure is already in place, the telemeters will be an addition to the structure that will modernize them. One benefit to these systems is the appeal they hold for the younger farmers that are starting to take over the land around us. New technology and these telemeters will allow them to more easily farm and balance other family and work obligations.

## **PROJECT BUDGET**

### **Funding Plan and Letters of Commitment**

The Enterprize Canal Company LTD receives an annual assessment of \$60,000. We have the ability to lease water if we have the water to lease. With the funds from our assessment, from our savings account, as well as a few water lease agreements, we have the full non-Federal \$89,497 available to realize this project.

### **Budget Proposal**

#### Total Project Cost Table

<b>SOURCE</b>	<b>AMOUNT</b>
Costs to be reimbursed with requested Federal Funding	\$75,000
Costs to be paid by the applicant	\$89,497
<b>TOTAL PROJECT COST</b>	<b>\$164,497</b>



### Total Project Budget

Materials	Price/unit	#/Headgate	for # of Headgates	Cost	
Concrete	\$150/yard	4/HG	8	\$4800.00	
Delivery Fee (Concrete)	\$200/delivery	1/HG	8	\$1600.00	
Reebar	\$7/bar	6/HG	8	\$336.00	
Telemeters	~\$13812	1/HG	8	\$110496.00	
Data recorders	\$1400/recorder	1/HG	8	\$11200.00	
Activate/Install charge	\$100/telemeter	1/HG	8	\$800.00	
Tower	\$4500/tower	—	1	\$4500.00	
Tower Pad	\$800/pad	—	1	\$800.00	
			<i>Subtotal</i>		\$134532.00
Labor	Price/unit	#/Headgate	for # of Headgates	Cost	
Project Manager	\$56/hr	12 hr/HG	8	\$5376.00	
Laborer 1	\$22/hr	8 hr/HG	8	\$1408.00	
Laborer 2	\$22/hr	8 hr/HG	8	\$1408.00	
Concrete Guy 1	\$35/hr	3 hr/HG	9	\$945.00	
Concrete Guy 2	\$35/hr	3 hr/HG	9	\$945.00	
Concrete Guy 3	\$35/hr	3 hr/HG	9	\$945.00	
Fringe Benefits	10% of total wages for Laborer 1 and 2 and Project Manager			\$820.00	
			<i>Subtotal</i>		\$11847.00
Machinery	Price/unit	#/Headgate	for # of Headgates	Cost	
Cat 330 Excavator	\$85/hr	3 hr/HG	8	\$2040.00	
4 Axle Dump Truck	\$80/hr	1 hr/HG	8	\$640.00	
Backhoe	\$58/hr	4 hr/HG	8	\$1856.00	
			<i>Subtotal</i>		\$4536.00
Indirect Costs	9% of total project costs		<i>Subtotal</i>	\$13582.00	\$13582.00
<b>TOTAL COST</b>			<b>TOTAL</b>	\$164,497.00	\$164,497.00

### Budget Narrative

*Salaries and Wages.* The Project Manager, Darrel Ker, is a board member of the Enterprize Canal Company. He currently works as a project manager and general contractor, and he has years of

experience in roadwork and construction as he owned and operated a roadwork and construction company. He will be on site during all construction and installation. We have a small pool of laborers that we hire for projects when needed. Their wage in the proposed budget is the rate they are paid.

*Equipment.* We will need to use an excavator and backhoe to prepare the headgates and move gravel around where necessary. We will need the dump truck to get gravel to the headgates. The rates listed above are based on local rental rates.

*Materials and Supplies.* All materials and supplies listed above are needed for construction or for the telemeters or their installation. All costs are estimates based on current material costs, quotes from Metcom Inc., and recent past experience with construction.

*Contractual.* The two contractual items for are project are the telemeters and their installation, and the concrete to be delivered and poured. Both aspects are accounted for in our budget under materials and labor.

#### **Environmental and Cultural Resources Compliance**

We will not be altering anything environmental or cultural and so do not need any compliance documents.

#### **Required Permits or Approvals**

We do not need any permits or approvals for this project.