COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

February 29, 2016

Heather Alvarez, Town Clerk/Treasurer
Town of Mancos
P.O. Box 487
Mancos, CO 81328

RE: Notice to Proceed – WSRA Grant –POGG1 2016-746 Mancos Raw Water Improvements in the Southwest River Basin

Dear Heather,

This letter is to inform you that the purchase order to assist in the above WSRA grant project was approved on February 29, 2016. The original documentation has been emailed to you and should serve as your grant documentation.

With the executed purchase order, you are now able to proceed with the project and invoice the State of Colorado for costs incurred through May 31, 2017 according to the schedule in Exhibit A. Please provide the project name, contract number, and basin when corresponding with or invoicing the State of Colorado for your project. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 30 days after review and signed approval by the project manager. I wish you much success in your project.

If you have any questions or concerns regarding the project, please contact me. You can contact Dori Vigil at 303-866-3441 ext. 3250 for invoicing and payment disbursement questions.

Sincerely,

//s//

Craig Godbout
Program Manager
Colorado Water Conservation Board
Water Supply Planning Section
1313 Sherman Street, Suite 718
Denver CO 80203
(303) 866-3441, ext 3210 (office)
(303) 547-8061 (cell)
craig.godbout@state.co.us

Attachments

STATE OF COLORADO
Department of Natural Resources

ORDER
Number: POGG1 PDAA 20160000000000000746
Date: 02/29/16
Description:
PDAA 2500 WSRA Mancos Raw Water Improvement
Effective Date: 02/25/16 Expiration Date: 05/31/17

BUYER
Buyer:
Email:

VENDOR
TOWN OF MANCOS
PO BOX 487
MANCOS, CO 81328-0487

Contact: HEATHER ALVAREZ
Phone: 970-533-7725

**** IMPORTANT ****
The order number and line number must appear on all invoices, packing slips, cartons and correspondence

BILL TO
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203

SHIP TO
COLORADO WATER BOARD CONSERVATION
1313 SHERMAN STREET, ROOM 718
DENVER, CO 80203

SHIPPING INSTRUCTIONS
Delivery/Install Date:
F.O.B:
VENDOR INSTRUCTIONS:

Line Item	Commodity/Item Code	UOM	QTY	Unit Cost	Total Cost	MSDS Req.
1	G1000		0	0.00	$81,765.00	☐

Description: PDAA 2500 Mancos Raw Water Improvement

Service From: 02/25/16 Service To: 05/31/17

TERMS AND CONDITIONS
https://www.colorado.gov/osc/purchase-order-terms-conditions

DOCUMENT TOTAL = $81,765.00

Exhibit A

Statement of Work
Date: November 30, 2015

WATER ACTIVITY NAME – "Mancos Water Projects" – Raw Water Intake Improvements

GRANT RECIPIENT – Town of Mancos

FUNDING SOURCE – Water Supply Reserve Account (Basin Funds Only)

INTRODUCTION AND BACKGROUND

Introduction:

The proposed project is the "**Mancos Water Projects**" with three components located in or near the Town of Mancos (see Exhibit B for more information on locations). **The improvements that have been identified specifically for this grant request is are identified as Raw Water Intake System Improvements**. For information purposes, the other components of the Mancos Water Projects are replacement of the Town's Main pressure reducing valve (PRV) and vault, and replacement of an older section of the Town's water distribution system.

The Raw Water Intake System Improvements is the focus of this grant application from the Colorado Water Conservation Board. The Town has been dealing with extensive water leakage at the raw water intake system on the West Mancos River that feeds the town's water treatment plant. The current system has limited means to measure and control water from the River, into the settling ponds, then into the raw water transmission going to the water treatment plant (WTP).

Additionally, the pipes conveying water to and from the ponds are subject to debris blockage. The result is that water is spilling and being wasted onto the ground. This is an ongoing problem as the water treatment plant operator has very limited means to monitor and adjust flows. The Operator has to make multiple trips to modulate water flows as a result of the configuration of the existing system.

Scope of work:

The proposed plan is to continue to utilize the head gate and water line from the West Mancos River in to Pond 1, and replace the remaining water lines in the raw water system. This included the water line from Pond 1 into Pond 2, the water line from Pond 2 to the Parshall Flume/Control Box Structure, and the water line from the Parshall Flume/Control Box Structure to the manhole that conveys raw water to the water treatment plant (WTP). The current system has very limited means to measure and control water flow from the river and the Water Treatment Plant Operator has to continually monitor the system to ensure that water is flowing to the WTP. Because the flow cannot be accurately metered, water at multiple locations ends up overflowing onto the ground. Additionally, the pipes conveying water to and from the ponds are subject to debris blockage causing more water to be wasted onto the ground. When the pipe plugs up there is concern with interruption of flow to the treatment plant.

There are very limited records on the town water system including the raw water intake system. Based upon what was found, the raw water intake system was last worked on in 1960. The proposed

improvements will renovate the existing system in a very cost effective manner. Components of the intake system improvements include:

1. Replace water lines between Pond 1 and Pond 2, and Pond 2 to the Parshall Flume and Control Box.
2. Provide decanter devices at the outlet of Pond 1 and Pond 2 to prevent debris from plugging pipes and causing ponds to overflow.
3. Provide a baffle (curtain) across each of the ponds to reduce short circuiting and improve settling of suspended solids.
4. Provide new Parshall Flume and Control Box and relocate them closer to the raw water pond to allow the Operator to dial in proper flow rates at the river head gate using the new 3" Parshall Flume.
5. Relocation of the Parshall Flume and Control Box further upstream will also provide additional pressure head of the raw water entering the water treatment plant. This will help treatment plant operations.
6. Provide return pipes back to the river to keep water off the ground. Return pipes will be from Pond 1, Pond 2, the control box, and the raw water manhole. These return pipes will provide the operator with assurance that any excess water flowing through the raw water intake system will quickly be routed back into the River without any of the water spilling onto the ground.

The CWCB WSRA funding in addition to Southwest Water Conservation District (SWCD) Funds will be used for design and construction of these Raw Water Intake System Improvements. The PRV/Vault and Distribution Line replacements items are proposed to be funded with a matching DOLA grant and Town water funds. Town will provide these funds through water rate increases implemented based upon a "Recommended Water Rate Structure Study" conducted in 2014 (see appendices).

OBJECTIVES

Raw Water Intake System Improvements objectives are to:

1. Provide accurate metering and control of water entering the pond system.
2. Eliminating extensive water spilling onto the ground and providing return pipes back to the river.
3. Provide a better quality raw water going to the water treatment plant by reducing the short circuiting that is happening in the ponds.

DESCRIPTION OF TASKS - FOR THE RAW WATER INTAKE SYSTEM IMPROVEMENS

TASK 1 – Replace Raw Water Lines, Install Return Lines, Install Decant Devices.

Description of Task

The existing water line that connects Pond 1 and Pond 2 is poorly located resulting in a reduction of detention time in the ponds. Blockage of this line is frequent and causes pond 1 to over flow wasting water onto the ground. The water line from Pond 2 to the existing Parshall Flume/Control Box can plug and the water surface elevation in both Pond 1 and Pond 2 increases causing Pond 1 to overflow. The water line between the Parshall Flume/Control Box to the raw water intake manhole should be replaced with the rest of the pipes when the system is offline, as it is at least 55 years old.

Install new water return lines from Pond 1 to River, Pond 2 to River, Control Box to River, and Raw Water manhole to River. These return lines will ensure there is not water being wasted on the ground.

Install decant device on Pond 1 outlet and Pond 2 outlet. The decant device will ensure that debris (sticks, grass, etc.) will not block the water lines.

Method/Procedure
Selected contractor will replace the raw water lines to the design invert elevations.

Deliverable
New raw water lines, return lines, and decant devices.

TASK 2 – Install Baffles (curtains) across Pond 1 and Pond 2

Description of Task
Placement of a baffle or curtain across each of the raw ponds will improve the detention time of the ponds and allow more suspended solids to settle out of the water. This will improve the raw water quality going into the Town's water treatment plant (WTP).

Method/Procedure
Selected contractor will install the baffles per design requirements. Each baffle will have flaps cut into the baffle at specific locations to allow water to flow through the baffle to the other side.

Deliverable
Installation of the improvements described above.

TASK 3 – Replace Parshall Flume/Control Box and Raw Water Manhole

Description of Task
The existing 9" Parshall flume is too large and does not allow the Operator to accurately measure water flow and thereby properly adjust the river head gate appropriately. The Flume has also settled adding to inaccuracies. The Control Box valves are rusty and do not work properly. As a result water flows onto the ground at this location. The raw water manhole is where the water feeds into the raw water line to the water treatment plant (WTP). Currently, there is no means to prevent water from overflowing onto the ground. A goal of this project is to replace the Flume with a new 3" Parshall Flume which will give the Operator the ability to adjust the river head gate with confidence. Replace the Control Box with new valves and a return line back to the river, thereby keeping water contained and not spilling onto the ground. Replace the raw water manhole with one that has a return line back to the river. The proposed Parshall Flume/Control Box and raw water manhole will be located further upstream, closer to the Pond 2 outlet. This will shorten the distance the operator has to walk back to the River head gate to make adjustments. This new location will also provide additional pressure head to the water treatment plant.

Method/Procedure
While the raw water system is off line, replace the Parshall Flume/Control Box, raw water manhole and water lines to the elevations identified in the design plans.

Deliverable
Improvements described above.

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

BUDGET

A detailed budget for Raw Water Intake System Improvements is presented in Exhibit A.1.

SCHEDULE

Provide a project schedule including key milestones for each task and the completion dates or time period from the Notice to Proceed (NTP). This dating method allows flexibility in the event of potential delays from the procurement process. Sample schedules are provided below. Please note that these schedules are examples and will need to be adapted to fit each individual application.

Raw Water Intake Improvements – Schedule

1. The Design will commence as soon as funding has been approved and contracts are in place. A topographic survey will be needed to aid in determining necessary invert elevations for the system. The design phase is relatively straight forward.
2. The "Mancos Water Projects" will then be advertised for construction bids, and awarded to the lowest qualified bidder.
3. Construction will commence once the raw water system is taken off line. Because the Town has water rights from Jackson Reservoir, they can readily take the West Mancos River raw water intake system off line.

Raw Water Intake Improvements - **Schedule**

Task	**Start Date**	**Finish Date**
1	Design April-June 2016	Construction Finish December 2016
2	Design April-June 2016	Construction Finish December 2016
3	Design April-June 2016	Construction Finish December 2016
	FINAL REPORT & DELIVERABLE	MAY 31, 2017

NOTE: Actual completion may depend upon DOLA Contract Execution

PAYMENT

Payment will be made based on actual expenditures and invoicing by the applicant. Invoices from any other entity (i.e. subcontractors) cannot be processed by the State. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 5 percent of the entire water activity budget will be withheld until final project/water activity documentation is

completed. All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and help promote the development of a common technical platform.

Exhibit A.1 – Total Project Budget

"Mancos Water Projects"

Project	Projected Project Cost
PRV Replacement	$131,761
Raw Water System Improvements	$163,531
Waterline Replacement	$243,566
TOTAL Project Cost	$538,858

Requested funds from Department of Local Affairs (DOLA)	$269,429
Committed Funds from Southwestern Water Conservation District (SWCD)	$ 75,000
Funds Recommended from Southwest Basin Roundtable (SBRT) Water Supply Reserve Account (WSRA)	$ 81,765**

Committed Funds from Town of Mancos $ 112,664

**** See A.2 for Raw Water Intake Improvements Budget Breakdown**

Exhibit A.2 Cost Break Down and Detailed Budget

MANCOS - RAW WATER POND SYSTEM IMPROVEMENTS

Russell Planning & Engineering

9/15/2015

ITEM DESCRIPTION	UNIT	AMOUNT	PRICE	COST
Clearing and Grubbing	Lump Sum	1	$3,500.00	$3,500.00
Construction Surveying	Lump Sum	1	$2,000.00	$2,000.00
Potholing	Hrs	5	$150.00	$750.00
12-IN 200 C900 (Purple Pipe) River to Pond #1	LF	35	$55.00	$1,925.00
Clean Pond #1 & Pond #2	Lump Sum	1	$8,000.00	$8,000.00
Pond #1 Baffle Installed	LF	35	$75.00	$2,625.00
Pond #2 Baffle Installed	LF	45	$75.00	$3,375.00
Crosover pipe 12-IN 200 C900 (Purple Pipe)	LF	80	$55.00	$4,400.00
12-IN 200 C900 (Purple Pipe) Pond #1 to River	LF	40	$55.00	$2,200.00
12-IN 200 C900 (Purple Pipe) Pond #2 to Control Box	LF	20	$55.00	$1,100.00
12-IN 200 C900 (Purple Pipe) Control Box to River	LF	110	$55.00	$6,050.00
Floating Decanter	EA	3	$1,500.00	$4,500.00
12-IN 200 C900 (Purple Pipe) Control Box to 48-IN MH	LF	30	$55.00	$1,650.00
48-IN Pre-Cast Concrete Manhole, Installed	EA	1	$4,500.00	$4,500.00
12-IN 200 C900 (Purple Pipe) 48-IN MH to River	LF	110	$55.00	$6,050.00
12-IN 200 C900 (Purple Pipe) 48-IN MH to Old MH	LF	570	$55.00	$31,350.00
Control Box/Flume Structure Package Includes Purchase & Installation	EA	1	$27,000.00	$27,000.00
2 - 12-IN Sluce Gates, Installed				
1 - 3-IN Throat Parshall Flume				
Building over Control Box/Flume	LS	1	$5,000.00	$5,000.00
Raw Water Pipe Intake Structure, Installed	1	1	$1,000.00	$1,000.00
Remove Existing Pipe	LS	1	$500.00	$500.00
Abandon Existing Pipe	LS	1	$500.00	$500.00
Erosion Control	1	1	$500.00	$500.00
Revegetation	1	1	$500.00	$500.00
			TOTAL CONSTRUCTION COSTS	**$ 118,975.00**
OTHER COSTS				
Mobilization 5% of Construction Costs	Percentage	1	5%	$ 5,948.75
Bonds, Insurance, and Permits	Percentage	1	1%	$ 1,189.75
DESIGN/CONSTRUCTION MANAGEMENT				
Design and Record Drawings	Percentage	1	6%	$ 7,138.50
Survey for Design & Clearances	Lum Sum	1	$3,000.00	$ 3,000.00
Construction Management 5% of Construction Cost	Percentage	1	5%	$ 5,948.75
			TOTAL OTHER COSTS	**$ 23,225.75**

Sub-Total	**$142,200.75**
Contingency (15%)	**$21,330.11**
Total	**$163,530.86**