COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

April 13, 2017

Colorado Water Protection & Development Association
Attn: Kent Ricken, CWPDA General Manager
1220 E. 3rd Street
La Junta, CO 81050

RE: Notice to Proceed – WSRF Grant – **POGG1 2017-871 – Catlin Recharge Pond Demonstration Project in the Arkansas River Basin**

Dear Kent,

This letter is to inform you that purchase order to assist in the above WSRF grant project has been approved. The original contract documents in the email serve as your copy.

With the executed agreement, you are now able to proceed with the project and invoice the State of Colorado for costs incurred through May 31, 2018. Please provide the project name, contract/PO number, and basin when corresponding with or invoicing for your project along with back-up documentation of cost incurred for the WSRF portion of the grant according to the original scope of work. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 30 days after review and signed approval of the project manager.

Please refer to the WSRF Criteria & Guidelines for reporting requirements for the six month progress reports and final deliverable requirements in order to avoid a delay in payment. A 30-day advance notice is required in the event you are seeking an amendment to the term of the contract and will require an official letter of request to the CWCB project manager briefly describing the need for the extension, updated insurance certificates and updated schedule.

If you have any questions or concerns regarding this project, please contact Ben Wade, Project Manager at 303-866-3441 x3238 or at ben.wade@state.co.us. When submitting invoices and progress reports, send to the PM and cc me at dori.vigil@state.co.us. You can contact me at 303-866-3441 ext. 3250 for additional invoicing and payment disbursement questions.

Thank you.

Sincerely,

//s//

Doriann Vigil
Program Assistant II
O 303-866-3441 ext. 3250
1313 Sherman Street, Rm. 719, Denver, CO 80203
Dori.vigil@state.co.us / cwcb.state.co.com

Attachments

STATE OF COLORADO
Department of Natural Resources

ORDER
Number: POGG1 PDAA 201700000871
Date: 04/13/17
Description:
pdaa 2500 WSRF grant CWPDA to fund Catlin Recharge Project
Effective Date: 04/13/17 Expiration Date: 05/31/18

BUYER
Buyer:
Email:

VENDOR
COLORADO WATER PRTCTV & DEV ASSN
1220 E 3RD ST
LA JUNTA, CO 81050-1907

Contact: .
Phone: .

**** 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: FOB Dest, Freight Allowed
VENDOR INSTRUCTIONS:

Line Item	Commodity/Item Code	UOM	QTY	Unit Cost	Total Cost	MSDS Req.
1	G1000		0	0.00	$5,000.00	☐
Description: pdaa 2500 WSRF grant CWPDA to fund Catlin Recharge Project						
Service From: 04/13/17 Service To: 05/31/18						

Line Item	Commodity/Item Code	UOM	QTY	Unit Cost	Total Cost	MSDS Req.
2	G1000		0	0.00	$30,500.00	☐
Description: pdaa 2500 WSRF grant CWPDA to fund Catlin Recharge Project						
Service From: 04/13/17 Service To: 05/31/18						

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

DOCUMENT TOTAL = $35,500.00

Exhibit A

Statement of Work

Date: January 11, 2017 **REVISED 4/2017**

SUBMITTED BY: COLORADO WATER PROTECTIVE AND DEVELOPMENT ASSOCIATION AND CATLIN AUGMENTATION ASSOCIATION IN SUPPORT OF WATER SUPPLY RESERVE ACCOUNT GRANT APPLICATION 2016-2017

I. Background

There is an identified and pressing need to investigate the use of recharge ponds in the Arkansas River Basin. While recharge ponds have been used extensively in other parts of Colorado, they are a relatively new water management tool in the Lower Arkansas River Valley. This funding request is for the demonstration project that would investigate and ultimately demonstrate the use of recharge in the Arkansas River Basin. This project would involve the site selection, design, engineering, pre-constructive approvals, construction, and application of the recharge pond as demonstration facilities on the Catlin Canal. The Catlin Canal is used as it targets a water long ditch (ability to carry water all irrigation season) and the high pumping replacement demand required by Colorado Water Protective and Development Association (CWPDA) and Catlin Augmentation Association (CAA).

The development of a recharge facility will help CWPDA and CAA better manage the water that is stored in reservoirs as well as have a dependable, firm supply of replacement and augmentation water accruing to the Arkansas River. A recharge facility will allow for net recharge water (deliveries to the facility minus evaporation loss) to be infiltrated to the Arkansas River alluvial aquifer and then flow through the aquifer and accrue to the river. The river accretions will then offset CWPDA's out-of-priority well depletions and to meet CAA's return flow obligations. The recharge facility will be beneficial when constructed over permeable soil profiles to allow for fast and efficient infiltration, and over soil that is low in nutrients to allow for water quality effects.

Meeting the Objectives of the Arkansas BIP and the Colorado Water Plan

In addition to the use for meeting Colorado's compact compliance obligations, the proposed recharge pond demonstration project will be broadly beneficial throughout the Arkansas River Basin. The use of recharge facilities is critical to the future operation of Rule 14 Plans, Rule 10 Plans, decreed plans of augmentation, Substitute Water Supply Plans (SWSP) and protection and improvement of Arkansas River water quality. The viability of groundwater pumping depends in large part on the ability to successfully replace historical lagged return flows of augmentation water rights used for replacement and augmentation. Recharge is the most viable and reliable means to provide for assured maintenance of those lagged historic return flows.

Objectives

The recharge facility will meet four primary objectives.

1. Demonstrate the physical and legal viability of locating and constructing recharge within the Arkansas River Basin.
2. Demonstrate through actual operations, how recharge ponds can be used to protect Arkansas River basin water rights, by timely replacement of out-of-priority well

depletions and return flow obligation of water rights used for augmentation and replacement.
3. Meet Colorado's Arkansas River Compact obligations
4. Provide a proof-of-concept for the construction and use of recharge at other locations and for other purposes within the Arkansas River Basin.

Project Description

Task One – Site Identification.

Description: Task One of the demonstration project will involve the identification of three or four potential recharge sites by CWPDA and CAA. These sites will be identified in consultation with the Division Engineer's Office, the Catlin Canal Company, land owners, and other participants in the CWPDA Rule 14 plan. CWPDA and CAA's current preference is to investigate two possible sites, each of which will be located on land currently owned by CAA members. One will be on land east of Manzanola with the other site in the vicinity of either Rocky Ford or Swink.

Method: The applicant will develop a map using the Colorado State University's (CSU) established maps and previous work from CAA engineer, Ivan Walter, under Court Case No. 12CW94 to identify the most effective locations for recharge. Included in this map will be unit response functions from the H-I model to identify the return replacement timing of such ponds. Ideally, the pond will be constructed over a permeable soil profile with no shale interference that will create lagged returned flows of three years or more. Considerations in the identification process will include capability of the site to provide timely amounts of recharge accretions to the River or tributaries to the River, locations along the canal, land ownership, ability of the Catlin Canal and a lateral to deliver water to the site, hydro-geology of the site, and the land lying between the site and the Arkansas River/tributary drain.

Deliverable: Consultant will provide mapping and all geological/technical data collected for the identified sites and a brief report describing the sites' recharge capabilities and outlining the basis for site identification.

Task Two – Site Selection & Authorizations.

Description: Of the identified sites, one will be selected for design and (in Task Four of this proposed demonstration project) construction.

Method: Selection will be based on detailed analysis and testing. Testing may include shallow well pump-in tests or double ring infiltrometer tests. Also, other hydrogeological, legal, financial, and administrative factors that are likely to lead to successful recharge facilities will be considered. CWPDA and CAA will then develop a general operating plan for the ponds so that the plan can be submitted for approval by the Division Engineer's Office and the Catlin Canal Company. Development of the operation plan will involve working with interested parties including land owners to obtain necessary permissions and ensure that appropriate easements and/or agreements are in place to allow for operation of the recharge ponds.

Deliverable: Consultant will provide final mapping of the selected sites, a copy of the operating plan for the recharge pond, and any authorizations obtained necessary for construction of the facility.

Task Three – Recharge Pond Design.
Description: Task Three of the demonstration project will be preparing a design of sufficient detail for construction of the recharge facility at the selected site. The final scope of the design will depend on the site selected.

Method: Using survey points across the selected site, a design of the pond will be constructed using AutoCad. The demonstration pond is anticipated to be approximately 5 to 10 surface acres depending on hydrologic conditions at the selected site. The design will likely include a device to control and measure inflows, an unlined pond, and an overflow/outlet structure and measuring device. In the event that there are remaining funds in the budget, this task may also include contractor selection and limited pre-construction activities to prepare the selected site for construction.

Deliverable: Consultant will provide the pond design and construction documents.

Task Four – Recharge Pond Construction.
Description: Task Four of the demonstration project will be to construct the recharge facility.

Method: The construction will be built per the design specifications developed in Task Three. The constructed components will include a device to control and measure inflows, an unlined pond, and an overflow/outlet structure and measuring device. If there are any permits to be obtained for construction they will be performed in Task Four.

Deliverable: Consultant will provide 'before and after' photos of the construction along with a final report of the actual construction that took place.

Reporting and Final Deliverable: CWPDA shall provide CWCB with a progress report every 6 months that includes all completed tasks, partial tasks, and major issues as identified in this Statement of Work. Following the completion of the project, a final report will be developed summarizing the project and documentation of how the project was completed. Included in this final report will be the deliverables from tasks One, Two, Three, Four, Five, and Six. The final report will be delivered to CWCB within four weeks of completion.

Budget & Schedule

The estimated level of effort required to complete the tasks identified above is provided in the following tables:

Table I: Project Time Table Contingent on the notice to proceed

Task	3 Months from the Notice to Proceed	6 Months from the Notice to Proceed	9 Months from the Notice to Proceed	10 Months from the Notice to Proceed
1 – Site Identification	8/1/17			
2 – Site Selection and Authorizations		11/1/17		
3 – Recharge Pond Design			2/1/18	
4 – Recharge Pond Construction				05/31/18

Table II: Estimated Total Costs

Item:	Labor	Other Direct Costs	Total
Task 1 – Site Identification	$15,800.00	$0.00	$15,800
Task 2 – Site Selection & Authorizations	$12,500.00	$2,550.00	$15,050
Task 3 – Recharge Pond Design	$11,000.00	$0.00	$11,000
Task 4 – Recharge Pond Construction	$25,500.00	$12,550.00	$38,050
Total Cost			$79,900

Table III: Estimated Labor Costs

	Project Hydrogeologist/ GIS Specialist	Project Engineer	Staff Engineer	Legal	Construction Manager	Total
Billing Rate	$140	$140	$100	$240	$120	
Task 1 – Site Identification	30	20	40	20	-	$15,800
Task 2 – Site Selection & Authorizations	10	20	35	20	-	$12,500
Task 3 – Recharge Pond Design	20	30	40	-	-	$11,000
Task 4 – Recharge Pond Construction	-	10	25	-	180	$25,500
Total Cost	$8,400	$11,200	$14,000	$9,600	$21,600	$64,800

Table IV: Estimated Other Costs Outside of Labor

Item:	Materials	Equipment/Supplies	Mileage ($0.55/mile)	Total
Task 1 – Site Identification	$0.00	$0.00	0	$0
Task 2 – Site Selection & Authorizations	$0.00	$2,000.00	1000	$2,550
Task 3 – Recharge Pond Design	$0.00	$0.00	0	$0
Task 4 – Recharge Pond Construction	$10,000.00	$2,000.00	1000	$12,550
Total Cost				$15,100

Table V: Estimated Funding Sources

Task	Total Cost	Funding Source
Task 1 – Site Identification	$4,450 $11,350 **$15,800**	Statewide Account CWPDA Membership
Task 2 – Site Selection & Authorizations	**$15,050**	Statewide Account
Task 3 – Recharge Pond Design	**$11,000**	Statewide Account
Task 4 – Recharge Pond Construction	$5,000 $33,050 **$38,050**	Basin Account CWPDA/CAA Membership
Total Cost	**$79,900**	

The in-kind contributions will be provided by CWPDA and CAA which will be paid for through the yearly membership dues of the organizations. Much of the research in task 1 will be completed by the CAA engineer that will be supported through Court Case No. 12CW94.

Table VI: Total Project Contributions

Item	Contribution
Statewide Account	$30,500
Basin Account	$5,000
CWPDA and CAA Membership	$44,400
Total	**$79,900**

Following the construction of the project, there will be yearly maintenance that must occur, including sedimentation mediation. CWPDA and CAA will cover the expenses of operating and maintaining the facility using membership dues from year to year.