



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street, Room 721
Denver, CO 80203

August 7, 2014

Colorado River Water Conservation District
c/o Dave "DK" Kanzer, P.E. Sr. Water Resource Engineer
P.O. Box 1120
Glenwood Springs, CO 81602-1120

**RE: Notice to Proceed – WSRA Grant – No Chico Brush Agricultural Water Research
Project in the Gunnison River Basin**

Dear Dave:

This letter is to inform you that the purchase order request for the WSRA grant to assist in the No Chico Brush Agricultural Water Research Project in the Gunnison River Basin was approved on August 6, 2014.

With the executed purchase order, you are now able to proceed with the project and begin invoicing the State of Colorado for costs incurred through January 31, 2017. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 45 days. I wish you much success in your project.

Sincerely,

/s/

Craig Godbout
Program Manager
Colorado Water Conservation Board
Water Supply Planning Section
1313 Sherman St, Rm. 721
Denver CO 80203
(303) 866-3441, ext 3210 (office)
(303) 547-8061 (cell)
craig.godbout@state.co.us

Attachments





PURCHASE ORDER GRANTS GIVEN
STATE OF COLORADO
Department of Natural Resources

Page 1 of 1

ORDER		** IMPORTANT **				
Number: POGG1 PDAA 20150000000000000124		The order number and line number must appear on all invoices, packing slips, cartons and correspondence				
Date: 08/07/14						
Description: PDAA 2500 WSRA NO CHICO BRUSH AG WATER RESEARCH GUNNISON BAS		BILL TO COLORADO WATER BOARD CONSERVATION 1313 SHERMAN STREET, ROOM 718				
BUYER		DENVER, CO 80203				
Buyer: Vigil Dori		SHIP TO				
Email: dori.vigil@state.co.us		COLORADO WATER BOARD CONSERVATION 1313 SHERMAN STREET, ROOM 718				
VENDOR		DENVER, CO 80203				
COLORADO RIVER WATER CONSERVE DIST PO BOX 1120 GLENWOOD SPRINGS, CO 81602-1120		SHIPPING INSTRUCTIONS				
Contact: .		Delivery/Install Date:				
Phone: .		F.O.B:				
		VENDOR INSTRUCTIONS:				
Line Item	Commodity/Item Code	UOM	QTY	Unit Cost	Total Cost	MSDS Req.
1	G1000		0	\$0.00	\$35,000.00	<input type="checkbox"/>
Description: PDAA 2500 WSRA NO CHICO BRUSH AG WATER RESEARCH						
Start Date: 08/06/14 End Date: 01/31/17						
TERMS AND CONDITIONS						
https://www.colorado.gov/osc/purchase-order-terms-conditions						
REASONS FOR MODIFICATION						
Change Order No: 1						
Change Buyer						
DOCUMENT TOTAL = \$35,000.00						

Exhibit A
Statement of Work

WATER ACTIVITY NAME – NoChicoBrush Agricultural Water Research Project

GRANT RECIPIENT – Colorado River Water Conservation District

FUNDING SOURCE – Gunnison Basin Roundtable Basin Account, Water Supply Reserve Account

INTRODUCTION AND BACKGROUND

Provide a brief description of the project. (Please limit to **no more than 200 words**; this will be used to inform reviewers and the public about your proposal)

NoChicoBrush is a farmer led group focused on creating solutions to water management and water quality issues in the Gunnison River Basin. The group recognizes the severity of the issues related to water supply locally and downstream on the Colorado River and realizes that without taking action to improve water use, the future of agriculture in the Gunnison Basin is in jeopardy. That is why local farmers have partnered with municipal water providers, energy providers, conservation organizations, and others to improve agricultural water use through tools and management practices designed and tested by producers.

The purpose of this project is to compare different irrigation and agricultural management practices over a three year period in order to estimate the amount of water that can be saved by converting from furrow irrigation to overhead sprinkler, drip, or big gun irrigation systems and what the impacts are on farmers. Since this is a farmer-led, participatory research project, we will install tools that will allow producers to monitor field inputs (water applied, fertilizer, soil moisture, soil carbon, etc.) and outputs (surface runoff quantity and quality, sediment, crop yield, etc.) and adjust their management practices accordingly. This data will help improve agricultural operations at the farm level and help address Basin-wide water issues.

OBJECTIVES

List the objectives of the project

The project objectives will be to address the following water supply and water quality questions:

- How much water do furrow, overhead sprinkler, drip and big gun irrigation systems currently “use” for the same crop type?
- What is the actual water need for these crops?
- What is the application efficiency of these different irrigation systems? How much water is applied to the crop at what times compared to actual crop demands throughout the growing season?
- How much water returns to the system from the farm as either surface run-off or deep percolation?

- How much irrigation water can be saved by converting on-farm irrigation from open furrow or flood irrigation methods to systemized irrigation with advanced irrigation scheduling?
- What are the crop yield differences between the four irrigation methods?
- What is the quality of water returning to the system or to the rivers in terms of salinity, selenium, nutrients and sediment?

TASKS

TASK 1 – Project Design and engineering

Description of Task

NoChicoBrush and project partners including Colorado State University will finalize the details, methods, and schedule of the three year research project to ensure that we will gather usable data for both agricultural producers and water planners and managers. Secure additional funding likely from other CWCB sources.

Method/Procedure

- Work with partners at the Colorado Water Institute to finalize study site needs, research variables, management practices, and measurement tools for scientifically sound data collection.
- Work with interested producers to enroll a minimum of four sites and a maximum of eight sites in the research project.
- Document existing irrigation, farming, and land management practices.
- Hire program assistant or agricultural related graduate student.

Deliverables

Final research project document that outlines the three-year study with a schedule of tasks, a lead person/organization for each task, and a description of the data to be collected, including how and where it will be collected.

Documents detailing best management practices and producer expectations for research study.

TASK 2 – Instrumentation purchase and installation

Description of Task

No Chico Brush and its partners will purchase and install on farm and on ditch crop water monitoring and related equipment.

Method/Procedure

- Install water quality monitoring sites, soil moisture sensors, and flow monitors and other necessary hardware at each study site.

Deliverables

Lists of types of instruments purchased and locations of installed instruments

TASK 3 – Project management

Description of Task

No Chico Brush executive committee with hire and manage necessary personnel to direct and manage the project.

Method/Procedure

- Advertise positions, interview candidates, and hire coordinators and managers as needed

Deliverables

Description of management staff hired and roles related to project.

TASK 4 – Field Assistant and or Interns

Description of Task

Hire and manage field season assistant and or interns.

Method/Procedure

- Advertise positions, interview candidates, and hire assistant and interns as needed

Deliverables

Description of intern or assistant hired and roles related to project.

TASK 5 – Implementation On-farm research

Description of Task

CSU with assistance from No Chico Brush Staff will work with farmers and partners on gathering data and continuing necessary instrumentation and related tasks

Method/Procedure

- Address needs of project related to goals of research project and grant deliverables.

Deliverable

Reporting, data gathering, and on-going project management

TASK 6 – Project data analysis

Description of Task

Data from on farm instrumentation and feedback from producers will be analyzed.

Method/Procedure

- Analyze data from producers and field equipment, compare irrigation systems for similar crops and soil types.

Deliverable

Report including project data, analysis, conclusions, and summary findings

TASK 7 – Outreach & Education

Description of Task

This is an ongoing task that will involve community presentations, field visits, and other farmer-to-farmer outreach describing the project, its purpose, and findings to date.

Method/Procedure

- Make regular community presentations
- Hold annual field visits to the study sites

Deliverable

Presentation materials

Summary report of producer opinions on the study and interest, concerns, and/or questions about improving their own irrigation system.

TASK 8 – Final Reporting

Description of Task

The final project report will also include strategies for how to apply improved water use tools and techniques to significant acreage in the Basin. It will address the question of how we can take what is learned on a few farms and apply it Basin-wide to make a larger impact on water quality and quantity issues. This report will also use the data collected to illustrate potential effects of large scale irrigation improvements on water quality and water supplies.

Method/Procedure

NoChicoBrush members, and other interested parties will brainstorm ideas for creating a program for wide scale adoption of improved water use practices specific to the findings of the research.

Deliverable

Program outline.

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

Provide a detailed budget by task including number of hours and rates for labor and unit costs for other direct costs (i.e. mileage, \$/unit of material for construction, etc.). A detailed and perfectly balanced budget that shows all costs is required for the State's contracting and purchase order processes. Sample budget tables are provided below. Please note that these budget tables are examples and will need to be adapted to fit each individual application. Tasks should correspond to the tasks described above.

Budgets

NoChicoBrush WSRA and ATM grants combined budget					
	In-Kind Contribution	Matching Funds	ATM Grant incl. fiscal agent cost	WSRA Grant Total Request	Total Project Cost
Task 1- Project design and engineering		\$1,000	\$49,449	0	\$50,449
Task 2- Instrumentation purchase and installation		\$12,000	\$40,000	\$10,000	\$62,000
Task 3- Project Management (3 yrs)	\$10,000	\$30,000	\$10,080	\$7,500	\$47,580
Task 4- Field Assistant/Interns (3yrs)		\$7,000	\$4,354	\$6,500	\$17,854
Task 5- Implementation on-farm		0	\$6,600	0	6600
Task 6- Project Data Analysis (3yrs)	\$3,000	\$9,000	\$3,850	\$6,500	\$19,350
Task 7- Outreach (3yrs)	\$3,000		\$33,853	\$4,500	\$41,353
Task 8- Project Reporting	(CRD Fiscal Agent)\$1021.24	0	\$19,853	0	\$19,853
Total:	\$16,000	\$59,000	\$173,080.17	\$35,000	\$265,039.00

NoChicoBrush WSRA Grant Request Dispersal by Year			
Year	2014	2015	2016
Project design and engineering	\$10,000		
Instrumentation purchase and installation		\$10,000	\$10,000
Project Management (3 yrs)		\$10,000	\$10,000
Field Assistant (3yrs)		\$13,000	\$12,000

Project Data Analysis (3yrs)		\$5,000	\$7,000
Outreach (3yrs)			\$3,000
Total= \$90,000	\$10,000	\$38,000	\$42,000

Project Schedule

<u>Tasks</u>	<u>2014</u>			
	Spring	Summer	Fall	Winter
1. Project Design and Engineering				
2. Instrumentation				
3. Project Management				
4. Field Assistant/interns				
5. Implementation on farm				
6. Project Data analysis				
7. Outreach				
8. Project Reporting				
<u>Tasks</u>	<u>2015</u>			
	Spring	Summer	Fall	Winter
1. Project Design and Engineering				
2. Instrumentation				
3. Project Management				
4. Field Assistant/interns				
5. Implementation on farm				
6. Project Data analysis				
7. Outreach				
8. Project Reporting				
<u>Tasks</u>	<u>2016</u>			
	Spring	Summer	Fall	Winter
1. Project Design and Engineering				
2. Instrumentation				
3. Project Management				
4. Field Assistant/interns				
5. Implementation on farm				
6. Project Data analysis				
7. Outreach				
8. Project Reporting				