



**STATE OF COLORADO**  
Department of Natural Resources

<b>ORDER</b>		<b>*****IMPORTANT*****</b>				
<b>Number:</b>	POGG1,PDAA,202400003269	The order number and line number must appear on all invoices, packing slips, cartons, and correspondence.				
<b>Date:</b>	3/18/24	<b>BILL TO</b>				
<b>Description:</b>	WPG -Student-Led Drought Resiliency Crop Trials	COLORADO WATER BOARD CONSERVATION 1313 SHERMAN STREET, ROOM 718 DENVER, CO 80203				
<b>Effective Date:</b>	04/01/24	<b>SHIP TO</b>				
<b>Expiration Date:</b>	04/01/29	COLORADO WATER BOARD CONSERVATION 1313 SHERMAN STREET, ROOM 718 DENVER, CO 80203				
<b>BUYER</b>		<b>SHIPPING INSTRUCTIONS</b>				
<b>Buyer:</b>		<b>Delivery/Install Date:</b> -				
<b>Email:</b>		<b>FOB:</b> FOB Dest, Freight Allowed				
<b>VENDOR</b>						
RIO GRANDE CONSERVATION DISTRICT 48 W COUNTY ROAD 10 N CENTER, CO 81125-9617						
<b>Contact:</b>	Mattea Freel					
<b>Phone:</b>	719-754-3400					
<b>VENDOR INSTRUCTIONS</b>						
<b>EXTENDED DESCRIPTION</b>						
Attachments: Budget, Exhibit A (SOW), Board Approval, HR Waiver						
<b>Line Item</b>	<b>Commodity/Item Code</b>	<b>UOM</b>	<b>QTY</b>	<b>Unit Cost</b>	<b>Total Cost</b>	<b>MSDS Req.</b>
1	G1000		0	0.00	\$52,606.80	<input type="checkbox"/>
<b>Description:</b> WPG -Student-Led Drought Resiliency Crop Trials						
The Rio Grande Conservation District will coordinate and participate in a research partnership with the Center Conservation District, Adams State University faculty and students, and the Colorado State University San Luis Valley Research Center. Adams State University students, with guidance from faculty, will design and implement drought trials for three years to find sustainable avenues for reducing total field water usage. They will experiment with a cover crop, a drought-resilient test crop, and a traditional cash crop. Students will track data such as water usage, weather, soil health, crop quality, and yield, then present their findings to local producers and other stakeholders.						
As a part of this agreement, please refer to Exhibit A (dated 3/14/2024) for a complete Statement of Work and Budget.						



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Service From: 04/01/24

Service To: 04/01/29

**TERMS AND CONDITIONS**

<https://www.colorado.gov/osc/purchase-order-terms-conditions>

**DOCUMENT TOTAL = \$52,606.80**

## Exhibit A

Statement of Work	
<b>Prepared Date:</b>	03/14/2024
<b>Name of Grantee:</b>	Rio Grande Conservation District
<b>Name of Water Project:</b>	Student-Led San Luis Valley Drought Resiliency Crop Trials
<b>Water Project Overview:</b>	
<p>The Rio Grande Conservation District (RGCD) will coordinate and participate in a research effort with Center Conservation District (CCD), Adams State University (ASU) students, and the Colorado State University (CSU) San Luis Valley (SLV) Research Center to conduct drought resiliency crop trials to determine potential agricultural water management plans to alleviate stress on the water supply in the Rio Grande Basin without sacrificing soil health and producer economic well being.</p> <p>RGCD will coordinate with ASU students as they design and implement drought trials over the course of three years to find sustainable avenues for reducing total field water usage which will include a cover crop, drought-resilient test crop, and a traditional cash crop. RGCD will support students as they track data such as water usage, weather, soil health, crop quality and yield, etc. as needed to determine the effectiveness of the drought resiliency trial and explain its relevance for local water concerns and agricultural production.</p>	
<b>Project Objectives:</b>	
<ul style="list-style-type: none"> <li>● Develop environmentally and financially sustainable/feasible crop rotations that can be utilized by local producers in response to the Colorado and Rio Grande Basin Water Plans</li> <li>● Form long-standing partnerships/working relationships among RGCD, CCD, ASU students &amp; staff, CSU Research Farm, and related entities</li> <li>● Provide hands-on, applicable research and project methods that can be utilized alongside the ASU agribusiness coursework</li> </ul>	

Task 1	
<b>Task 1 - Project Plan Development</b>	
Description of Task:	
With support from the RGCD and CCD Manager and CSU Research Farm staff, ASU students will develop a three-year project plan.	
Method/Procedure:	
<ol style="list-style-type: none"> <li>1. Conduct a joint meeting between the RGCD and CCD Manager, ASU students, and CSU Research Farm staff to develop and design a three-year project plan</li> <li>2. Develop specific tasks/outcomes: project management, operations, planting, harvest, variables, measurement schedules, etc.</li> <li>3. Determine roles for ASU students, District Manager, and CSU Research Farm staff</li> <li>4. Task ASU students with developing a deliverable for RGCD and CCD board supervisors to showcase the project plan design</li> </ol>	
Deliverable:	
RGCD will provide CWCB with: <ul style="list-style-type: none"> <li>● Documentation of the joint meeting with partners, including attendees, date, and a brief meeting summary;</li> <li>● Student deliverable presented to RGCD and CCD boards to showcase project plan design;</li> </ul>	

- The final project plan design; and
- An invitation to (or copy of) a formal presentation of the project plan design for RGCD and CCD board supervisors

## Task 2

### Task 2 – Launch Trial with Cover Crop

**Description of Task:**

Year 1 Cover Crop operations will be conducted from Spring – Fall in 2024 and will include any related project management and operations tasks. This year will focus on a cover crop to rejuvenate soil health and start drought resiliency trials.

**Method/Procedure:**

\*Task 2 methods are estimated based on a meeting with ASU students on 11/15/23

1. Begin with a spring soil test to determine the initial (controlled) soil health status following 2 years of fallow
2. Install soil moisture sensor probes
3. Install weather station
4. Plant a cover crop based on soil health test. The estimated combination will be a drought-tolerant mix of legume (30%)/cereal or forage (70%)
5. Maintain and harvest cover crop
6. Follow cover crop with a winter planting of rye as appropriate
7. Variable measurements will be tracked throughout the season
8. Conduct a winter meeting between ASU students, RGCD and CCD Manager, and CSU Research Farm staff as needed to follow-up on Year 1 and determine Year 2 method continuation

**Deliverable:**

RGCD will provide CWCB with:

- Variable data formally presented in a digital collection including soil health test results, total water usage, soil moisture, weather patterns, and crop yield and quality;
- Student deliverable presented to RGCD and CCD boards to showcase variable data and provide a project year-end update;
- Copies of any relevant student coursework directly related to the project, and;
- An invitation to (or copy of) a formal presentation of the variable data and year-end project update for the Rio Grande Basin Roundtable

## Task 3

### Task 3 – Drought-Tolerant Alternative Crop

**Description of Task:**

Year 2 Drought-Tolerant Alternative Crop operations will be conducted from Spring – Fall in 2025 and will include any related project management and operations tasks. This year will focus on the drought-tolerant alternative crop and determining necessary soil health practices.

**Method/Procedure:**

1. Maintain drought-tolerant alternative crop throughout 2025 (if not planted in the previous winter, plant spring crop)
2. Partner with the Rye Resurgence Project (if rye is chosen as the drought-tolerant alternative crop)
3. Maintain and harvest drought-tolerant alternative crop in late Summer/Fall 2025
4. Conduct a fall soil test as needed
5. Determine if further soil health practices are needed in fall/winter 2025 to prepare for 2026 cash crop
6. Variable measurements will be tracked throughout the season
7. Conduct a winter meeting between ASU students, District Manager, and CSU Research Farm staff as needed to follow-up on Year 2 and determine Year 3 method continuation

Deliverables:
<p>RGCD will provide CWCB with:</p> <ul style="list-style-type: none"> <li>• Variable data formally presented in a digital collection including soil health test results, total water usage, soil moisture, weather patterns, and crop yield and quality;</li> <li>• Student deliverable presented to RGCD and CCD boards to showcase variable data and provide a project year-end update;</li> <li>• Copies of any relevant student coursework directly related to the project, and;</li> <li>• An invitation to (or copy of) a formal presentation of the variable data and year-end project update for the Rio Grande Basin Roundtable</li> </ul>

### Task 4

#### **Task 4 – Cash Crop**

Description of Task:

Year 3 Cash Crop operations will be conducted from Spring – Fall in 2026 and will include any related project management and operations tasks. This year will focus on the success of a cash crop using less water after focusing on drought resiliency and soil health as well as producer outreach based on project results.

Method/Procedure:

1. Conduct a spring soil test if needed
2. Plant desired cash crop in spring 2026 (ASU students have shown interest in potatoes)
3. Maintain and harvest cash crop in Fall 2026
4. Conduct a fall soil test for project completion
5. Follow cash crop with a winter cover crop if desired by ASU students
6. Variable measurements will be tracked throughout the season
7. Conduct final meeting between ASU students, District Manager, and CSU Research Farm staff to discuss project outcomes
8. Determine potential project continuation beyond the three-year period with ASU students, the District Manager, and CSU Research Farm staff

Deliverables:

- RGCD will provide CWCB with:
- Variable data formally presented in a digital collection including soil health test results, total water usage, soil moisture, weather patterns, and crop yield and quality;
  - Cumulative data formally presented in a digital collection including soil health test results, total water usage, soil moisture, weather patterns, and crop yield and quality;
  - Student deliverable presented to RGCD and CCD boards to showcase variable data and provide project year-end update and project completion results and feedback;
  - Copies of any relevant student coursework directly related to the project, and;
  - An invitation to (or copy of) a formal presentation of the cumulative variable data and project completion update for the Rio Grande Basin Roundtable

### Task 5

#### **Task 5 – Producer Outreach and Education**

Description of Task:

In coordination with the RGCD and CCD Manager, ASU students will present and showcase project results including cumulative variable data and producer recommendations at a workshop developed by the RGCD and CCD Manager. This workshop will encourage producers to consider and adopt any recommendations made by ASU students based on research findings.

Method/Procedure:

<ol style="list-style-type: none"> <li>1. The Manager will schedule, promote, and conduct a workshop to showcase project findings of the Student-Led San Luis Valley Drought Resiliency Crop Trials in Spring 2027</li> <li>2. Students will formally present to producers on the project, cumulative data, research findings, and recommendations</li> <li>3. Attendee surveys will be conducted following the workshop to gauge producer interest in student recommendations; potential partnerships with RGCD, CCD, and/or ASU students; useful information acquired during the workshop; and producer-recommended projects and trials</li> </ol>
Deliverables:
RGCD will provide CWCB with: <ul style="list-style-type: none"> <li>• An invitation to (or copy of) a formal presentation provided by ASU students at the workshop(s), and</li> <li>• A cumulation of producer survey data provided in a digital spreadsheet format</li> </ul>

Task 6
<b>Task 6 – Project Administration and Reporting</b>
Description of Task:
Complete project oversight, management, and partner coordination. Complete all necessary contracts, status reports, and internal and external documents. Ensure tasks are completed within the approved costs and timelines.
Method/Procedure:
The RGCD will manage and administer the Student-Led SLV Drought Resiliency Crop Trials project. The RGCD will complete any contracts with the CWCB and other project partners as needed, manage project budgets, submit reimbursement requests, and complete semi-annual and final reports. The RGCD will perform project oversight and monitoring and coordinate with CSU and ASU, along with other partners.
Deliverables:
RGCD will provide CWCB with all appropriate contracts, external and internal reports, and on-site project activities completed within the planned period and anticipated costs.

Budget and Schedule						
This Budget and Schedule reflects the tasks identified in the Statement of Work.						
Task No.	Task Description	Estimated Task Start Date	Estimated Task End Date	Grant Funding	Match Funding	Total
1	Project Plan Development	2/1/2024	3/4/2024	\$ -	\$ 2,521.60	\$ 2,521.60
2	Launch Trial with Cover Crop	4/1/2024	12/13/2024	\$ 15,155.40	\$ 19,777.60	\$ 34,933.00
3	Drought-Tolerant Alternative Crop	3/3/2025	12/12/2025	\$ 13,290.00	\$ 19,777.60	\$ 33,067.60
4	Cash Crop	3/2/2026	12/11/2026	\$ 13,815.00	\$ 19,277.60	\$ 33,092.60
5	Producer Outreach and Education	2/1/2027	4/1/2027	\$ 1,961.60	\$ 4,548.40	\$ 6,510.00
6	Project Administration and Reporting	2/5/2024	4/1/2027	\$ 8,384.80	\$ -	\$ 8,384.80
<b>Total</b>				<b>\$ 52,606.80</b>	<b>\$ 65,902.80</b>	<b>\$ 118,509.60</b>

Reporting Requirements
<p><b>Progress Reports:</b> The grantee shall provide the CWCB a progress report every six months, beginning from the date of issuance of the grant agreement. The progress report shall describe the status 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.</p>

**Final Report:** At completion of the project, the applicant shall provide the CWCB a final report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will pay out the last 10% of the budget when the final report is completed to the satisfaction of CWCB staff. Once the final report has been accepted, and final payment has been issued, the grant agreement will be closed without any further payment.

### Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this grant agreement are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of the grant agreement must be provided to the CWCB as part of the project documentation.

### Performance Measures

Performance measures for the grant agreement shall include the following:

(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget. Per grant guidelines, the CWCB will pay out the last 10% of the budget when the final report is completed to the satisfaction of CWCB staff. Once the final report has been accepted, and final payment has been issued, the grant agreement will be closed without any further payment.

(b) Accountability: Per grant guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Grant Guidelines, progress reports must be submitted at least once every 6 months. A final report must be submitted and approved before final project payment.

(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each progress report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.

(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the grant agreement.