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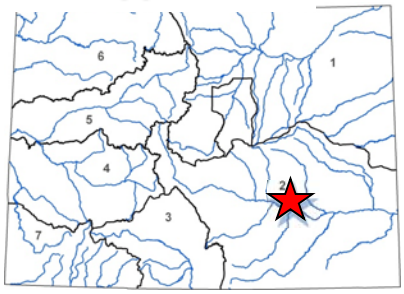
Colorado Water Conservation Board
Department of Natural Resources

Head Stabilization Pond Seepage Measurement Project

Lower Arkansas Valley Water Conservancy District

Water Plan Grant Application

November 2018 Board Meeting



LOCATION	
County/Counties:	Pueblo, Otero, Bent, Prowers
Drainage Basin:	Arkansas

DETAILS	
Total Project Cost:	$60,250
Water Plan Grant Request:	$120,500
Other CWCB Funding:	$0
Other Funding Amount:	$0
Applicant Match:	$60,250
Project Type(s): IPP, Study	
Project Category(Categories): Agricultural	
Measurable Result: Agricultural water efficiency savings of 1,850 AF/Year	

The Arkansas River Compact allows future water development in the Arkansas Basin in Colorado and Kansas provided that development does not "…materially deplet[e] in usable quantity or availability," the waters of the Arkansas River. These developments include certain improvements to surface water irrigation systems that existed at the time of the Compact because these changes can affect historical seepage and return flows. In 2009, the State Engineer filed the *Compact Rules Governing the Improvement to Surface Water Irrigation Systems in the Arkansas Basin in Colorado* (Rules) to allow for continued improvements of irrigation system efficiency while ensuring compliance with the Compact. The rules require the owner of a sprinkler, drip system, or other surface irrigation improvement to replace the historical return flows that their improvement depletes from the Arkansas River in matching amount, time and place. This can be done through an individual plan or Rule 10 Compact Compliance Plans. Rule 10 Plans provide an opportunity for growers to apply for surface water improvements as a group, thus providing financial and administrative benefits for the irrigators.

The Lower Arkansas Valley Water Conservancy District (LAVWCD) manages two Rule 10 Plans. The LAVWCD is requesting $60,250, 50% of the total project cost, through Colorado's Water Plan Grant to conduct water balance accounting measurements of sprinkler head stabilization pond seepage in compliance with their Rule 10 Plan covering the Fort Lyon Canal. Matching funds will be provided by the applicant. The Division 3 Engineer supports this application.

The Fort Lyon Rule 10 Plan will facilitate the implementation of surface water irrigation systems on 115 farms while maintaining historical return flows within Division 2 pursuant to the Rules governing such improvements. The vast majority of center pivot sprinklers in this Rule 10 Plan have head stabilization ponds installed to supply irrigation water to the sprinkler. As water is temporarily stored in these ponds, seepage percolates into the groundwater table and is considered return flow. The approved Rule 10 Plan requires pond seepage measurement to confirm the median pond seepage rate and other assumptions derived from the 2013-15 Pond Study, which removed daily limits on seepage and temporarily increased seepage rates from 0.167 acre foot/day to 0.35 acre foot/day pending additional measurements. The impact of allowing the Rule 10 plan to account for these accretions is significant because seepage losses are accounted as direct credits toward return flow changes at a farm, reducing operation and administrative costs and encouraging producers to participate in the plan.

This project furthers several of Colorado's Water Plan critical action goals relating to agriculture including encouraging agriculture efficiency and resiliency while promoting better water management. Installation of surface water improvements will provide multiple benefits including reducing labor costs, increasing crop yields and overall agricultural productivity, water quality improvements, enhancing resiliency to drought and water shortages, and maintaining compact compliance.

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Water Plan Grant Application

Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as "project") funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Water Storage Projects	Anna.Mauss@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Ben.Wade@state.co.us
Agricultural Projects	Alexander.Funk@state.co.us
Environmental & Recreation Projects	Chris.Sturm@state.co.us

FINAL SUBMISSION: Submit all application materials in one email to *waterplan.grants@state.co.us*
in the original file formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.

Water Project Summary

Name of Applicant	**Lower Arkansas Valley Water conservancy District**
Name of Water Project	**Head Stabilization Pond Seepage Measurement Project**

CWP Grant Request Amount	**$60,250**
Other Funding Sources **Lower Ark District**	**$60,250**
Other Funding Sources _____	**$**
Other Funding Sources _____	**$**
Applicant Funding Contribution	**$**
Total Project Cost	**$120,500**

"

Applicant & Grantee Information

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Name of Grantee(s) **Lower Arkansas Valley Water Conservancy District**
Mailing Address **801 Swink Avenue, Rocky Ford, CO 81067**
FEIN **48-1298144**
Organization Contact **Jay Winner**
Position/Title **General Manager**
Email **jwinner@lowerark.com**
Phone **719-254-5115**
Grant Management Contact
Position/Title
Email
Phone
Name of Applicant (if different than grantee)
Mailing Address
Position/Title
Email
Phone

Description of Grantee/Applicant

Provide a brief description of the grantee's organization (100 words or less).

The Lower Arkansas Valley Water Conservancy District ("Lower Ark District") is a water conservancy district established in 2002 pursuant to Colorado law, C.R.S.§ 37-45-101 et seq. The Lower Ark District's mission is to acquire, retain and conserve water resources within the Lower Arkansas River; to encourage the use of such water for the socio-economic benefit of the District citizens; and to participate in water-related projects that will embody thoughtful conservation, responsible growth, and beneficial water usage within the Lower Arkansas Valley.

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	Type of Eligible Entity (check one)
	Public (Government): Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
X	**Public (Districts):** Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes.

	Type of Water Project (check all that apply)
X	Study
	Construction
	Identified Projects and Processes (IPP)
	Other

	Category of Water Project (check the primary category that applies and include relevant tasks)	
	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.. *Applicable Exhibit A Task(s):*	
	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. *Applicable Exhibit A Task(s):*	
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. *Applicable Exhibit A Task(s):*	
X	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit A Task(s):*	
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*	
	Other	Explain:

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Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	**Pueblo, Otero, Bent, and Prowers Counties**
Latitude	
Longitude	

Water Project Overview
Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.
The project is to measure seepage from sprinkler head stabilization ponds in the Lower Arkansas River Valley that are owned/operated by members in one of the Lower Ark District's two Rule 10 Plans. Rule 10 Plans are required to maintain historical return flows for certain surface irrigation improvement within Division 2 pursuant to the Compact Rules Governing Improvements to Surface Water Irrigation Systems in the Arkansas River Bain in Colorado that were implemented in 2011. Pond seepage is considered a direct credit against water owed to the river due to the possible increased water consumption caused by a sprinkler. This work is required by Condition 8(a) of the Colorado State Engineer's May 8, 2018 Rule 10 Plan Approval, which states, *"In lieu of the requirement to maintain metering/measuring devices on the pond study ponds for two additional years, the Plan Member must cooperate to allow the Division Engineer to either: (i) Conduct pond fill tests, or (ii) Conduct water balance accounting on multiple deliveries of runs of water."* Water balance accounting measurements will be conducted instead of pond fill tests. This work will consist of pond inflow and outflow measurements and associated accounting to determine actual pond seepage.

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Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
	New Storage Created (acre-feet)	
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
	Existing Storage Preserved or Enhanced (acre-feet)	
	Length of Stream Restored or Protected (linear feet)	
1,850 ac-ft/year (average)	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms	
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
	Number of Coloradans Impacted by Engagement Activity	
	Other	Explain:

Water Project Justification
Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, and the applicable Roundtable Basin Implementation Plan and Education Action Plan. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers). The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)
BIP – This project supports the Master Needs List of the Arkansas Basin Implementation Plan item #2015-0536 and supports better water management, which state it will "quantify all return flows from all Rule 10 Plan ponds" (Arkansas Basin Roundtable, 2015). This project will determine pond seepage and help farmers maximize their water rights. The project will also help meet the State Engineer's Condition 8(a) of the 2018 Rule 10 Plan Approval. **Statewide Water Supply Initiative** – This project fits into the Final SWSI 2010 Key Findings and Recommendations (2011), that states, "help meet Colorado's agricultural water supply needs" (p.8) by encouraging farmers to implement and continue utilizing surface irrigation improvements. These improvements help make their existing water go further and helps meet the agricultural water supply gap. **Colorado's Water Plan** – "The Arkansas Basin has the third-highest acreage of irrigated land in Colorado and the highest percentage of shortages in comparison to other basins" (p.6-33). This project helps meet the agricultural water supply and demand gap and CWCB's developed long-term theme of "meeting Colorado's agricultural water needs" (p.6-15) which, for the Arkansas Valley, focuses on "agricultural economy and efficiencies" (p.6-17). **References**

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Arkansas Basin Roundtable. (2015, April). *Arkansas Basin Implementation Plan: Master Needs List.* Retrieved from: https://www.colorado.gov/pacific/sites/default/files/Ark%20BIP%20Exec%20Summay%20Master%20Needs%20List%20FINAL%2020150416.pdf

Colorado Water Conservation Board. (2011, January 26). *Final SWSI 2010 key findings and recommendations.* Retrieved from: http://cwcb.state.co.us/water-management/water-supply-planning/Documents/SWSI2010/SWSI2010FactSheet.pdf

Colorado's Water Plan Leadership Team. (2015). *Colorado's water plan* (Chapter 6.2). Retrieved from: http://cwcbweblink.state.co.us/weblink/0/doc/199501/Electronic.aspx?searchid=80d50cb3-95bf-405c-bfa5-587c633c7136

Related Studies

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

Lower Arkansas Basin Pond Seepage Study (conducted from 2013 to 2015) – Prepared for the Lower Ark District by Agritech Consulting

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Previous CWCB Grants, Loans or Other Funding

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

Description of Grant		Type	Effective Date	Grant/PO Amount
Agricultural Emergency Drought Response Grant (2015)		Sev Tax Grant	4/9/2015	220,245.19
Agricultural Emergency Drought Response Grant (2014)		Sev Tax Grant	4/9/2015	224,348.96
Rotational Fallowing-Leasing Catlin Canal Pilot Project in the Arkansas River Basins	CTGG1 2015-3447	WSRA Grant	6/19/2015	173,781.50
Repurposing of Water Supply for Mutual Beneficial Use	CTGG1-2015-3400	WSRA Grant	6/19/2015	300,000.00
Arkansas Basin Watershed Collaborative Project in the Arkansas River Basin	CTGG1 2015-3443	WSRA Grant	6/22/2015	265,000.00
Fort Lyon Recharge Pond	POGG1 PDAA 2016000000000000317	Sev Tax PO	8/21/2015	39,725.00
North La Junta Streamlined Flooding Mitigation & Flow Management Project	POGG1 PDAA 2016000000000000771	WRSA PO	3/30/2016	25,000.00
North La Junta Hydraulic Modeling	POGG1 PDAA 201700000279	WRSA PO	7/28/2016	20,000.00
Pueblo Channel Debris Removal & Habitat Restoration Project	POGG1 PDAA 201800000237	WRSA PO	9/28/2016	5,000.00
Irrigation Well Data Enhancements on Arkansas River	POGG1 PDAA 201700000508	Sev Tax PO	10/20/2016	30,000.00
John Martin Reservoir New Storage Study	POGG1 PDAA 201700000986	Sev Tax PO	10/20/2016	48,708.00
Junkins Fire Flood Mitigation	POGG1 PDAA 201700000506	Watershed Grant	5/22/2017	100,000.00
Water Rights Purchase Project	CT2015-175	Loan	7/10/2015	2,560,350.00
Phase Two of Tailwater Return Flow Study on Fort Lyon Canal	CTGG1 2017-1656	WSRA Grant	4/4/2017	174,796.00
Hayden Pass Fire Flood Mitigation	POGG1 PDAA 201700000985	Watershed Grant	5/22/2017	100,000.00
Beulah Hill Fire Flood Mitigation	POGG1 PDAA 201700000985	Watershed Grant	6/1/2017	50,000.00
North La Junta Streamlined Flooding Mitigation & Flow Management Continuation Project	POGG1 PDAA 201700000439	WRSA PO	8/10/2017	80,000.00
John Martin Reservoir New Storage Account Study Ph 2	POGG1 PDAA 201800000672		1/12/2018	25,000.00
Arkansas BIP Coordinator in the Arkansas River Basin	POGG1 PDAA 2016000000000000402	WSRA PO	9/28/2015	97,880.00

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Taxpayer Bill of Rights
The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.
The Lower Ark District's 1.5 mill property tax levy is exempt from TABOR pursuant to the election that formed the district in 2002.

Submittal Checklist	
X	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
X	Statement of Work(1)
X	Budget & Schedule(1)
	Engineer's statement of probable cost (projects over $100,000)
	Letters of Matching and/or Pending 3rd Party Commitments(1)
Exhibit C	
	Map (if applicable)(1)
	Photos/Drawings/Reports
	Letters of Support (Optional)
	Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
	Certificate of Good Standing with Colorado Secretary of State(2)
	W-9(2)
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
	Engagement & Innovation Supplemental Application(1)

(1) Required with application.
(2) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

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Water Plan Grant - Exhibit A

Statement Of Work	
Date:	**July 25, 2018**
Name of Grantee:	**Lower Arkansas Valley Water Conservancy District**
Name of Water Project:	**Head Stabilization Pond Seepage Measurement Project**
Funding Source:	**Colorado Water Plan - Agriculture**

Water Project Overview:

The project is to measure seepage from sprinkler head stabilization ponds in the Lower Arkansas River Valley that are owned/operated by members in one of the Lower Ark District's two Rule 10 Plans. Rule 10 Plans are required to maintain historical return flows for certain surface irrigation improvement within Division 2 pursuant to the Compact Rules Governing Improvements to Surface Water Irrigation Systems in the Arkansas River Bain in Colorado that were implemented in 2011. Pond seepage is considered a direct credit against water owed to the river due to the possible increased water consumption caused by a sprinkler.

This work is required by Condition 8(a) of the Colorado State Engineer's May 8, 2018 Rule 10 Plan Approval, which states, *"In lieu of the requirement to maintain metering/measuring devices on the pond study ponds for two additional years, the Plan Member must cooperate to allow the Division Engineer to either: (i) Conduct pond fill tests, or (ii) Conduct water balance accounting on multiple deliveries of runs of water."*

Water balance accounting measurements will be conducted instead of pond fill tests. This work will consist of pond inflow and outflow measurements and associated accounting to determine actual pond seepage. This is consistent with the method used in the original Pond Seepage Study conducted during 2013, 2014 and 2015 and will be compared to those results.

Project Objectives:

1. Determine water seepage rates from up to twenty four sprinkler head stabilization ponds (up to eight ponds each year for three years) that are with the Lower Ark District's Rule 10 Plans.
2. Compare these seepage rates to those measured in the original Pond Seepage Study that was conducted during 2013, 2014 and 2015.
3. Meet Condition 8(a) requirements as proposed by the Colorado State Engineer.

Last Updated: Jan 16, 2018

Tasks
Task 1 – Selection of Ponds for Measurement
Description of Task:
In cooperation with the Division 2 Engineer, the Lower Ark District will select up to eight sprinkler head stabilization ponds each year over a three year study period to measure pond seepage. Each pond is anticipated to only be measured for one year.
Method/Procedure:
The Lower Ark District will evaluate the results from the original Pond Seepage Study to aid in the selection of the ponds to be measured during this project. Ponds will be selected in a manner that tries to represent the range of results and pond characteristics observed in the original Pond Seepage Study (conducted in 2013-2015) and the characteristics of the existing sprinkler ponds within the Lower Ark District's Rule 10 Plans.
Deliverable:
A map and brief description of all ponds selected from each of the three years.

Last Updated: Jan 16, 2018

Tasks
Task 2 – Purchase and Installation of Equipment
Description of Task:
Purchase and install flow measurement and recording equipment suitable for each pond selected to properly measure and record pond inflows.
Method/Procedure:
Flow meters will be used when feasible and Parshall flumes with stage discharge recorders will be used as an alternative. Only measurement equipment that are approved by the Division 2 Engineer will be used. Pond outflows are typically already measured and recorded by existing flow meters that come standard on center pivot sprinklers and are not anticipated to be purchased for this project. Each meter will be verified using DWR methods at least once per year to ensure accurate measurements.
Deliverable:
Photos of all installed measurement equipment.

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Tasks
Task 3 – Data Collection and Comparison
Description of Task:
Consistent with the original Pond Seepage Study, measure and record pond inflow and outflow volumes and the number of days the pond is full for each head stabilization pond selected. Use this data to calculate pond seepage rates for each pond and compare these results to those measured in the original Pond Seepage Study.
Method/Procedure:
Pond inflows will be measured using the equipment described in Task 2 and outflows will be measured using the flow meter that is typically installed as part of a center pivot sprinkler installation. These devices will be used to collect data during the irrigation season (March 15th through November 15th) and stored over the winter months and reused where feasible the following year.
Deliverable:
Report summarizing seepage rates measured for each pond and a general comparison to those measured in the original Pond Seepage Study.

Last Updated: Jan 16, 2018

Tasks
Task 4 – Project Management
Description of Task:
The Lower Ark District will serve as the fiscal agent and project manager for the project. This will include managing the grant and matching funds to implement the tasks described herein, as well as ensuring all tasks are completed in a satisfactory manner and deliverables are provided. Write reports and meet grant deadlines while coordinating results with the Division of Water Resources. Coordinating flume verification and ensure payments and grant reimbursements with all invested parties.
Method/Procedure:
The Lower Ark District will engage and coordinate with sprinkler owners/operators, the Division 2 Engineer and consultants to ensure tasks and invoicing are completed in a timely and efficient manner.
Deliverable:
Summary report of study findings.

Last Updated: Jan 16, 2018

Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements

Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. 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.

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 purchase order or grant 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.

Project costs not covered by those or other grants, and are therefore the responsibility of the grantee, will be eligible for CWCB funds at the following percentages of project costs:

	Percent of Project Costs		
Type of Activity	Recommended Grant Funding Request	Max Grant Funding Request (All CWCB Sources)	Minimum Funding Match (Non-CWCB Sources)
Engineering & Construction	20%	50%	50%
Feasibility Study	50%	50%	50%
Reducing Agricultural Dry Up	50%	80%	20%
Conservation/Efficiency Methods	50%	80%	20%
Educational Efforts	50%	80%	20%
Environmental Conservation	50%	80%	20%
Watershed Improvements	50%	80%	20%
Stream Improvements	50%	80%	20%
Land Use Planning	20%	50%	50%
Recreational Projects	20%	80%	20%

Costs incurred prior to the effective date of this contract 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 this contract must be provided to CWCB in hard copy and electronic format as part of the project documentation.

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Performance Measures

Performance measures for this contract 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 in Exhibit B. Per Water Plan 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 purchase order or grant will be closed without any further payment.
(b) Accountability: Per Water Plan 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 Water Plan 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.

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Water Plan Grant - Detailed Budget Estimate
Fair and Reasonable Estimate

7/25/2018
Lower Arkansas Valley Water Conservancy District
Head Stabilization Pong Seepage Measurement Project

Labor Costs

	Staff Engineer	Field Technician	Admin	Subtotal
	$ 75	$ 25	$ 25	
Sorted by Tasks	Estimated Hours			
Task 1 - Selection of Ponds for Measurement	30		30	$ 3,000
Task 2 - Purchase & Installation of Equipment	60	240	30	$ 11,250
Task 3 - Data Collection & Comparison	150	1050	60	$ 39,000
Task 4 - Project Management	40		80	$ 5,000
Subtotal Hours	240	1290	200	1,730
Subtotal Labor/ Subcontractor cost				$58,250
Milage				$9,208
Direct Costs (see below)				$53,042
TOTAL				

Mileage Costs

	Mileage MI.	Mileage Rate	Mileage Costs
Sorted by Tasks			
Task 1 - Selection of Ponds for Measurement			
Task 2 - Purchase & Installation of Equipment	1200	$ 0.59	$708
Task 3 - Data Collection & Comparison	14407	$ 0.59	$8,500
Task 4 - Project Management			

CWCB Funds	Other Matching Funds
$ 60,250	$ 60,250

$120,500

Direct Costs - Task 2

Item:	Unit Cost	Unit	Year 1	Year 2	Year3	Total Units	Total Costs
Flume with SDR (2 setups)							
Parshal Flume - 12" throat x 18" deep	$1,800	No.	2	1	1	4	$7,200
Stilling Well	$500	No.	2	1	1	4	$2,000

Note: This estimate assumes that eight ponds will be measured for the first year and that two will require flume measurement and six will allow for flowmeter measurement. It also assume that for the second and third year, half of the equipment will be able to be reused and half will need to be

Miscellaneous Supplies	$500	No.	2	1	1	4	$2,000	purchased new
Stage Discharge Recorder	$1,350	No.	2	1	1	4	$5,400	
Stage Discharge Recorder Supplies	$500	No.	2	1	1	4	$2,000	
Solar Panel	$400	No.	2	1	1	4	$1,600	
Flowmeter (6 setups)								
Flowmeter 12" McCrometer	$2,200	No.	6	3	3	12	$26,400	
Miscellaneous Supplies	$537	No.	6	3	3	12	$6,442	
Total						48	$53,042	