



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Nora Flynn, Program Manager
Technical Assistance for Federal Cost-Share (TAFC), Water Supply
Planning Section

DATE: November 16th and 17th, 2022

AGENDA ITEM: Consent Agenda **##**. Technical Assistance for Federal Cost-Share,
Boulder Valley Conservation District, Pre-development work for the
Leggett Ditch

Staff Recommendation: Staff recommends approval of up to \$55,292 from the Technical Assistance for Federal Cost-Share Grant to help fund the "Pre-development work: Leggett Ditch" project.

Background:

The Technical Assistance for Federal Cost-Share Program provides financial assistance to eligible organizations to expand water resource stakeholders' capacity through project development and funding assistance. Primarily, all grant applications must include tasks that will develop applications for federal funding programs that may leverage state and local resources.

The Leggett Ditch runs across southern Boulder County and diverts water from Boulder Creek, irrigating 5,145 acres. For years, there have increasingly been significant seepage losses from a two-mile section of the ditch (between N 95th St and Highway 287) near the beginning of the ditch system. The seepage in this section is so severe that adjacent farmland is constantly inundated with water throughout the irrigation season. There are pools of standing water and accumulated alkaline salts on the surface of the soils throughout the area. This has impacted agricultural production, resulting in poor quality of hay and lower yields. The wet conditions often prevent producers from even bringing equipment onto the fields to conduct haying operations. Along this same section of the ditch, there are residential properties and a local school that have had to install sump pumps and divert seepage water.

The Leggett Ditch needs funding in order to contract with local engineers to understand where exactly the seepage losses are occurring on this 2-mile stretch and an analysis of the alternatives and costs to address those losses. This analysis will provide the necessary information for the Leggett Ditch to pursue federal funding.

Staff concludes this TAFC Grant application is complete. The proposed activity meets the eligibility requirements in the C&G. The TAFC Grant Application, Statement of Work, and Budget and Schedule are below.

Scope of Work
Boulder Valley Conservation District
Technical Assistance for Federal Cost Share (TAFC) Program
Pre-development work: Leggett Ditch

Grant Amount: \$55,292

Contractor: Boulder Valley Conservation District
9595 Nelson Road, Suite D, Longmont, CO 80501
Vanessa McCracken, District Manager
720-378-5521
Vanessa.Mccracken@bvlcd.com
Federal Tax Identification Number: 84-0706538

Project Purpose:

The Leggett Ditch runs across southern Boulder County and diverts water from Boulder Creek, irrigating 5,145 acres. For years, there have increasingly been significant seepage losses from a two-mile section of the ditch (between N 95th St and Highway 287) near the beginning of the ditch system. From the ditch rider's estimates, losses are at least 30% in this area. Losses from the ditch cause several problems. 90% of the water is used in the last 3 miles of the ditch to irrigate high value crops. The ditch company must purchase Colorado Big Thompson water to supplement the ditch losses and ensure enough water makes it to shareholders at the end of the ditch. Even though the ditch is decreed for 85 cubic feet per second (cfs), the ditch company only runs 65 cfs to prevent overtopping or collapse of the ditch in the two-mile stretch. The greater the rate of flow the ditch runs, the more leakage/loss that occurs.

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The Leggett Ditch needs funding in order to contract with local engineers to understand where exactly the seepage losses are occurring on this 2-mile stretch and an analysis of the alternatives and costs to address those losses. This analysis will provide the necessary information for the Leggett Ditch to pursue federal funding. Summit Engineering has already toured the section of the ditch, and their work would involve a hydrological analysis, alternatives analysis, and cost estimates. With that information, the Leggett Ditch will be able to associate a cost to the alternatives and pursue different options for federal funding.

Potential federal funding sources:

National Resource Conservation Service (NRCS)
Watershed and Flood Prevention Operations (PL-566)

The Leggett ditch falls under the category of Agricultural Water Management, which consists of “measures to increase or conserve water supplies and improve water quality. Water conservation practices may include sediment control and land stabilization measures, diversion dams, flumes, canals, water supply reservoirs, pumping plants, and any other measures that would improve water management for improved agricultural efficiency.” The NRCS determines eligibility of the project if it meets or exceeds a one-to-one cost benefit ration. The cost of addressing seepage from the ditch, will likely be outweighed by the benefit of reduced reliance on Colorado Big Thompson water, improved forage production in lands inundated with seepage, and potential damage to residential and other properties along the ditch.

Under the PL-566 program, a potential project sponsor first submits a letter requesting assistance through the program to NRCS Colorado. NRCS Colorado then completes a Preliminary Investigation Feasibility Report (PIFR) to identify if project and the program align. If they do align, NRCS Colorado and the sponsor complete a Watershed Plan - Environmental Assessment that, when authorized, satisfies NEPA requirements and allows the project sponsor to receive up to \$25 million in federal funding through PL-566. Ideally, we will help the project sponsor submit this letter before the end of 2022. However, they may submit this as late as late as October 1, 2023, to ensure that the associated project will be ready to successfully complete the PL-566 process.

\$500 million available in the program

The Boulder Valley Conservation has neither submitted a project for assistance through the PL-566 program nor assisted a ditch company in navigating the PL-566 process with NRCS. To support this effort, WRCD is partnering with Farmers Conservation Alliance (FCA), an Oregon-based 501(c)3 organization focused on irrigation infrastructure modernization, and the Colorado Ag Water Alliance (CAWA) to help ensure project is successful. FCA has successfully developed and implemented their Irrigation Modernization Program to support over 40 irrigation districts, ditch companies, and agricultural water providers across five western states in modernizing their infrastructure. FCA has assisted these communities in pre-development and subsequent project strategy, design, funding, permitting and construction. FCA has successfully managed the PL-566 process as a contractor for NRCS and for irrigation communities helping these communities to both navigate the PL-566 process and secure nearly \$200 million of funding for on-the-ground projects. FCA’s experience in working with irrigation communities from pre-development through project construction will help to mitigate for potential project failure.

Task Descriptions:

1. Survey
 - a. A survey would be initiated with CWCB grant approval. The survey would be carried out between now and the irrigation season of 2023. It would include an incremental cross-sectional survey including at crossings and structures
2. Hydraulic Analysis
 - a. Using surveyed cross sections, develop HEC-RAS model of subject reach to assist in alternatives analysis
 - b. Pipe/enclosure/lining hydraulic calculations (i.e., determine necessary pipe, box, or lining size necessary)
 - c. This would be conducted before the 2023 irrigation season
3. Ditch Loss Analysis

- a. Conduct ditch loss study to confirm current understanding and assist in developing magnitude of water loss and calibrate the hydraulic analysis
 - b. Evaluation soils and geological hazards
 - c. This would be completed during the fourth quarter of 2023
4. Alternatives analysis
 - a. Research various options to mitigate seepage from the ditch
 - b. Complete Rough Order of Magnitude (ROM) costs for each alternative
 - c. This would be completed during the fourth quarter of 2023
5. Technical Summary
 - a. Preparation of technical summary memo/report documenting findings of tasks Nos. 1-4.
 - b. This would be completed during the fourth quarter of 2023
6. Project and Grant Administration
 - a. Coordinate engineer's tasks with ditch company, organize site visits, review deliverables, and provide feedback.
 - b. Manage grant expenditures and reporting
 - c. This would be completed during the fourth quarter of 2023

Deliverables:

1. A copy of all federal grant applications prepared or submitted associated with this TAFC application (required).
2. Status reports documenting all task activities with each invoice (required).
3. Technical Summary

Task Schedule: January 2023 - December 2023

Payment Schedule:

Activity and Staff Time	Hours	Rate per Hour	Cost
Task 1: Survey	N/A	N/A	\$15,000
Task 2: Hydraulic Analysis	20 58 16	170/hr 160/hr 105/hr	\$14,360
Task 3: Ditch Loss Analysis	16 32	170/hr 160/hr	\$8,840
Task 4: Alternatives Analysis	8 32	170/hr 160/hr	\$6,480
Task 5: Technical Summary	8 24 4	170/hr 160/hr 105/hr	\$5,620
Task 6: Project & Grant Management	78	\$64	\$4,992

Total Cost	\$55,292
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