COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Handy Ditch Company	
Name of Water Project	Welch Expansion Feasibility Study	
Grant Request Amount		**$210,525.00**
Primary Category		$210,525.00
Water Storage & Supply		
Total Applicant Match		**$70,175.00**
Applicant Cash Match		$59,375.00
Applicant In-Kind Match		$10,800.00
Total Other Sources of Funding		**$0.00**
Total Project Cost		**$280,700.00**

Applicant & Grantee Information

Name of Grantee: Handy Ditch Company
Mailing Address: PO Box 569 Berthoud Colorado 80513
FEIN: 840,221,145

Organization Contact: Steve Anderson
Position/Title:
Email: handyditch@gmail.com
Phone: 970-222-2334

Grant Management Contact: Steve Anderson
Position/Title:
Email: handyditch@gmail.com
Phone: 970-222-2334

Grant Management Contact - Alternate: Walt Niccoli
Position/Title: Principal Engineer
Email: wniccoli@telesto-inc.com
Phone: 9704847704

Description of Grantee/Applicant

Company - Water company, public or private

Type of Eligible Entity

- ☐ Public (Government)
- ☐ Public (District)
- ☐ Public (Municipality)
- ■ Ditch Company
- ☐ Private Incorporated
- ☐ Private Individual, Partnership, or Sole Proprietor
- ☐ Non-governmental Organization
- ☐

☐ Covered Entity
☐ Other

Category of Water Project

☐ Agricultural Projects
Developing communications materials that specifically work with and educate the agricultural community on headwater restoration, identifying the state of the science of this type of work to assist agricultural users among others.

☐ Conservation & Land Use Planning
Activities and projects that implement long-term strategies for conservation, land use, and drought planning.

☐ Engagement & Innovation Activities
Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website.

☐ Watershed Restoration & Recreation
Projects that promote watershed health, environmental health, and recreation.

■ Water Storage & Supply
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.

Location of Water Project

Latitude	40.322101
Longitude	105.115974
Lat Long Flag	Reservoir location: Coordinates based on location of reservoir
Water Source	The point of diversion (headgate) is located on the right bank of the Big Thompson River immediately downstream from the mouth of the Big Thompson Canyon in the SW ¼ of Section 3, Township 5 North, Range 70 West, 6th P.M., in Larimer County.
Basins	South Platte
Counties	Larimer
Districts	4-Big Thompson River

Water Project Overview

Major Water Use Type	Agricultural
Type of Water Project	Design / Engineering
Scheduled Start Date - Design	6/1/2023
Scheduled Start Date - Construction	

Description

The project involves completing a feasibility study and engineering to evaluate raising the dam crest and spillway of Welch Reservoir to increase the safe storage capacity of the reservoir.

Measurable Results

3,065	New Storage Created (acre-feet)
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
7,363	Existing Storage Preserved or Enhanced (acre-feet)
3,065	New Storage Created (acre-feet)
	Length of Stream Restored or Protected (linear feet)

Efficiency Savings (dollars/year)
Efficiency Savings (acre-feet/year)
Area of Restored or Preserved Habitat (acres)
Quantity of Water Shared through Alternative Transfer Mechanisms or water sharing agreement (acre-feet)
Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
Number of Coloradans Impacted by Engagement Activity

Other

At the current allowed gauge (west gauge) height 29.3 feet, Welch Reservoir holds 7,363 acre-feet. During the Comprehensive Dam Safety Evaluation (CDSE), the technical team identified the possibility of an addition 1-foot of storage with some minor improvements. An increase to gauge height 30.3 feet equates to a total storage of 7,816 acre-feet, an increase of 453 acre-feet. Increasing to gauge height 35.3 feet (as contemplated in the Feasibility Study) would result in roughly 10,428 acre-feet of storage.

Water Project Justification

The proposed project would support Colorado's 2016 Water Plan (Section 9, pp 9-43 to 9-44) because:
1. The pre-permitting work has identified that the project does the following:
a. Meets the goals and measurable outcomes identified in the BIPs: The project increases storage in the South Platte Basin, and is high in the watershed so that its storage can be put to multiple beneficial uses
b. Identifies the project proponent: Handy Ditch Company, with shareholders from the agriculture, municipal, commercial and industrial sectors
c. Meets an identified need: Storage is a primary goal of the Water Plan. Locally, Berthoud and the Little Thompson Water District need storage and increased/improved/more consistent supplies
d. Has the ability to be built within the next 15 years, assuming a more efficient and effective permitting process: The project is entirely privately owned by the Handy Ditch Company and the primary use is agricultural. This eliminates some of the permitting encountered on publicly held lands. Also, the Colorado State Engineer is highly knowledgeable about the project and is working with Handy to make sure that Welch Expansion is done effectively and efficiently, smoothing that permitting process
2. The proposed project aligns with Colorado's water values:
a. The proposed feasibility study will formalize the proponent's commitment to collaboration: Additional storage at Welch Reservoir would benefit multiple sectors including agriculture, municipal and industrial users. Handy believes there is a broad set of interested stakeholders that could assist with the proposed construction work.
b. The proposed project addresses identified water gaps: The proposed work would increase water storage and supply, one of the issues identified in the South Platte Basin Implementation Plan.
c. The proposed project demonstrates sustainability: Part of the proposed work involves improving aging infrastructure at Welch Reservoir.
d. The proposed feasibility study will formalize the technical and fiscal feasibility of the project: Initial evaluation has determined that a dam raise at Welch Reservoir has high benefit for the estimated construction cost. Additionally, the feasibility study will identify stakeholders that could assist with funding the proposed construction work.

The proposed project would support Colorado's 2023 Draft Water Plan by:
1. Meeting the Partner Action Category of Meeting Future Water Needs by providing supply and lowering risk for multiple sectors
2. Meeting the Partner Action Category of Thoughtful Storage:
a. Developing partnerships for multi-purpose storage projects
b. Innovating surface storage: Welch Reservoir can be expanded to store more water with less environmental impact than a new reservoir

c. Repairing or installing infrastructure needed to maintain existing and expand storage levels
3. Addressing South Platte Basin gaps, including agricultural and municipal uses

Related Studies

1. Telesto completed a geotechnical investigation on the south dam area in May 2021 to investigate unknown seepage issues
2. A CDSE Risk Assessment Report was completed by Colorado Division of Water Resources, Colorado Dam Safety Branch, and AECOM in August 2022:
a. This study considered available information about Welch Reservoir within a Potential Failure Modes Analysis (PFMA) and risk framework to determine the Safe Storage Level in accordance with Colorado Revise Statue 37-87-107.
b. The six evaluated PFM's were judged to be in the Green Dam Safety Risk category (lowest risk category).
c. As part of the 2022 CDSE, AECOM also considered the potential to increase water storage at Welch Reservoir. AECOM concluded that it appears feasible (from a dam safety risk perspective) to add at least 1 vertical foot of new reservoir storage above the principal spillway (El. 5136.0). Preliminary hydrologic and hydraulic modeling indicates that greater than 1 foot of residual freeboard would be maintained during the probable maximum flood (PMF) event with an initial reservoir stage El. 5137.0. Modeling also indicates that the reservoir could reach the emergency spillway (El. 5139.0) at the 1,000,000 Annual Exceedance Probability event (48-hour storm duration). It was recommended that the hydraulic and hydrologic modeling be formally updated to confirm the maximum potential increase in reservoir storage.

Taxpayer Bill of Rights

No Tax Bill of Rights provided