COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan

Water Project Summary

Name of Applicant	Big Stick Ditch Company
Name of Water Project	Soldiers Draw Reservoir No.1 Feasibility Study - Big Stick Ditch Company
Grant Request Amount	**$40,208.00**
Primary Category	$40,208.00
Water Storage & Supply	
Total Applicant Match	**$3,350.00**
Applicant Cash Match	$3,350.00
Applicant In-Kind Match	$0.00
Total Other Sources of Funding	**$10,053.00**
SWCB	$10,053.00
Total Project Cost	**$53,611.00**

Applicant & Grantee Information

Name of Grantee: Big Stick Ditch Company
Mailing Address: 789 County Road 121 Hesperus CO 81326

Organization Contact: Lance Meador
Position/Title:
Phone:
Email: lemeador@hotmail.com

Organization Contact - Alternate: Lance Meador
Position/Title:
Phone:
Email: lemeador@hotmail.com

Grant Management Contact: Lance Meador
Position/Title:
Phone:
Email: lemeador@hotmail.com

Grant Management Contact - Alternate: Lance Meador
Position/Title:
Phone:
Email: lemeador@hotmail.com

Description of Grantee/Applicant

The Big Stick Ditch Company is comprised of 60 Shareholders in an unincorporated ditch company with a total of 3,200 shares.

Type of Eligible Entity

- ☐ Public (Government)
- ☐ Public (District)

- [ ] Public (Municipality)
- [x] 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.
- [x] 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	37.192843
Longitude	-108.087949
Lat Long Flag	Reservoir location: Coordinates based on location of reservoir
Water Source	Animas River Basin and La Plata River Basin
Basins	Southwest
Counties	La Plata
Districts	30-Animas River Basin; 33-La Plata River Basin

Water Project Overview

Major Water Use Type	Agricultural
Type of Water Project	Study
Scheduled Start Date - Design	3/10/2025
Scheduled Start Date - Construction	

Description

The proposed water activity involves a feasibility study for a Water Storage and Supply Project for the Big Stick Ditch Company. The study will evaluate the potential to create water storage using a 1,000 AF conditional water right for the Soldiers Draw Reservoir No. 1. This project was identified in the Southwest Basin Roundtable Project List (Project-00065), and the water could be used for multiple purposes, including domestic supply, La Plata River Compact Compliance, fish and wildlife, augmentation, and irrigation uses. Grant money sought in this application will be used to complete a preliminary water supply and dam feasibility study for this decreed reservoir.

The feasibility study will culminate in a comprehensive report, which will include an Engineer's Opinion of Probable Cost (EOPC), providing a preliminary cost estimate for the project.

Project Objectives:
1. Evaluate Water Storage Potential: Assess the physical and legal and availability of water for diversion on Lightner Creek for importation from the under-appropriated Animas River Basin into the over-appropriated La Plata River Basin to deliver water for storage in the conditional Soldiers Draw Reservoir No. 1.
2. Evaluate Potential Permitting Needs: Identify all necessary local, state, and federal permits that will be required to construct a future reservoir, develop a permitting action plan, and identify any insurmountable permitting challenges that are perceived.
3. Site Evaluation and Dam Feasibility: Complete a geotechnical investigation and preliminary study to determine the suitability of the Soldiers Draw Reservoir No. 1 dam site, and to develop a preliminary conceptual engineering design and Engineers Opinion of Probable Cost (EOPC)for a future dam.
4. Develop Summary Report: Compile findings into a comprehensive report, including all pertinent project findings, preliminary conceptual design, and EOPC to evaluate the overall feasibility of construction Soldiers Draw Reservoir No. 1 and to determine the amount of project funding needed to complete the project in the future.

Measurable Results

1,000	New Storage Created (acre-feet)
1,000	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
1,000	Existing Storage Preserved or Enhanced (acre-feet)
1,000	New Storage Created (acre-feet)
	Length of Stream Restored or Protected (linear feet)
	Length of Pipe, Canal Built or Improved (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)
60	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
	Number of Coloradans Impacted by Engagement Activity

Other

The feasibility study will evaluate the potential amount of water storage that could be utilized within the La Plata River Basin. It will also consider the number of stakeholders that could benefit from additional storage.

Water Project Justification

Justification:
Colorado's largest "reservoir" of water is its snowpack. Stream flows created by melting snow in the La Plata Mountains provide water to agriculture in the La Plata Basin. The La Plata River produces very little runoff and demands on the river chronically experience shortages due to physical flow limitations and curtailment due to the La Plata Compact (Colorado Water Plan [CWP]:Section 4.9.7, page 171); hence, the commonly referred term for the La Plata River Basin as "the dry side". Per the CWP and Southwest Basin, simulated hydrographs with climate change indicate that snowmelt timing will occur earlier in the runoff season when demand for agriculture is not warranted (CWP:Section 4.9.7, page 171). The proposed water activity will support the goal of resiliency planning with climate change due to the potential of changing growing seasons and altered supply and demand patterns by the development of additional water supply during the uncertain seasonal variabilities such as

multi-year droughts, extensive wet periods, and meeting the challenge of stretching available water supplies to meet agricultural demands. It will support lessening future risk and development of resilient water storage planning in the La Plata River Basin through the evaluation of importing water from the under-appropriated Animas River Basin into the over-appropriated La Plata River Basin. The feasibility study will support local contingency planning for water security into 2050 as outlined in the CWP scenarios.
1) Per the CWP Analysis and Technical Update (p168), “agricultural diversion demand is projected to increase by 11 to 16 percent in Cooperative Growth and Hot Growth due to climate impacts. The increased demand in these scenarios is exacerbated by reduced water supply, resulting in an increased gap.” The feasibility study for developing Soldiers Draw Reservoir No. 1 supports the goals of the CWP in finding innovative solutions to water supply and climate change.
2) Although Adaptive Innovation planning scenario estimates reduced demand, the reduction in water supply due to climate change could result in an increased gap over baseline (CWP:p168). The La Plata River Basin is included in these gaps of water supply. Per the CWP Analysis and Technical Update (page 33-34), the proposed water activity will support the Adaptive Innovation scenario for the Total and Incremental Agricultural Gaps projected to 2050.

How this project meets the goals of the 2022 Colorado Water Plan Update:
The proposed water activity will support strategizing to mitigate future risks to water supply-demand (increase local water storage by 1,000 AF); impacts from hydraulic drought (aquifer, storage, and recovery); agricultural drought (reduce local agricultural dry-up and reduction of water transfers); socioeconomic drought (sustaining the local rural agricultural community within the La Plata River Basin).

1) Per CWP (Chapter 5, page 165), “Water storage helps meet the year-round needs of agriculture, municipalities, recreation, and the environment. While snowpack is Colorado’s greatest storage “facility,” reservoirs hold water to be released during heightened demand or periods of drought.” The proposed water activity provides an opportunity for additional water storage to Colorado’s water portfolio as listed in the CWP below:
a) Reallocating some flood storage to active storage – conversion of the Big Stick Ditch/Lightner Creek Canal 40 cfs flood water rights to storage rights
b) Constructing new dams and reservoirs – construct the Soldiers Draw Reservoir No.1 with a capacity of 1,000 AF of storage.
c) Using floodplain alluvial aquifer storage – potential to increase recharge in the La Plata River Basin by conveying under-appropriated Animas River Basin water into the over-appropriated La Plata River Basin.

2) The proposed water activity has the potential to increase watershed health and wildlife within the La Plata River Basin. Increased water supply by developing the Soldiers Draw No.1 Reservoir could support increased wildlife habitat, such as elk, deer, and breeding habitat for migrating birds that would otherwise flow into Lightner Creek and the Animas River Basin.

3) The proposed water activity involves a feasibility study for a Water Storage and Supply Project for the Big Stick Ditch Company. The Soldiers Draw Reservoir No. 1 project was identified as Project-00065 in the Southwest Basin Identified Projects (Tier 3) during the 2022 CWP Update. The proposed water activity meets the CWP four criteria for action areas and are described below:

A. Vibrant Communities: The proposed water activity will evaluate the physical and legal potential to create an additional 1,000 AF of water storage to support the local agricultural community for water accessibility throughout the irrigation season, increase crop yield, local economic sustainability, and increase wildlife habitat. “Holistic water management is essential for creating vibrant communities that balance water supply and demand needs to create a sustainable urban landscape. Colorado communities need resilient water supplies, water conscious and

attractive urban landscapes, planning that integrates land use and water solutions, and residents who understand the importance of water to their lives and economy." (Chp1, p9).

B. Robust Agriculture: The Big Stick Ditch Company is proposing to evaluate their conditional water right of 40 cubic feet per second (cfs) for diversion on Lightner Creek Canal for importation from the under-appropriated Animas River Basin into the over-appropriated La Plata River Basin into Soldiers Draw Reservoir No.1. The proposed water activity would support the Big Stick Ditch Company in assessing their water rights for storage to improve irrigation for livestock and crops (grass hay and grass alfalfa), thus, increasing the local ranching economy.

C. Thriving Watersheds: There is potential for the Soldiers Draw Reservoir No. 1 to provide habitat for the local wildlife in the area, as well as foraging and/or breeding habitat for migratory birds, and health of the watershed. "Comprehensive water resources planning should incorporate conditions of forests, streams, wetlands, and wildlife habitat. As our state's water source, the health of watersheds affects agriculture, downstream communities, recreation, tourism, and ecosystem function. Colorado will continue to follow a shared stewardship ethic to plan and implement multi-benefit projects to enhance the health of our watersheds." (CPW:Chp1, p9).

D. Resilient Planning: The proposed water activity will provide an alternative water source for climate adaptation during drying seasons. It will support lessening future risk and development of resilient water storage planning in the La Plata River Basin through the evaluation of importing water from the under-appropriated Animas River Basin. The feasibility study will support local contingency planning for water security into 2050.
a.) Per the CWP Analysis and Technical Update (page 171), "The La Plata River produces very little runoff and demands on the river chronically experience shortages due to physical flow limitations and curtailment due to the La Plata Compact. At both of the locations (Animas River at Durango and La Plata River at Hesperus), available flows are projected to diminish and peak flows could occur earlier in the runoff season under planning scenarios with climate change impacts." Capturing the early season flows conveyed in Lightner Creek for storage will sustain local agriculture, and available water rights within the La Plata River Basin.

How this project meets the goals of the Southwest Basin Implementation Plan (BIP) and potential future water gaps with a planning horizon of 2050:
1. Balance all needs and reduce conflict – socioeconomic sustainability by supporting local agricultural water needs for livestock and crop yield. The CWP hydrologic scenarios indicate that climate change will severely impact agricultural water supplies; however, increasing water storage such as the proposed water activity, will support meeting the water demands and future water gaps to 2050.
2. Maintain agricultural water needs – increase water supply within the La Plata River Basin to support local livestock and crop yield. Basin wide storage supplies vary widely and available flows are projected to diminish, and peak flows could occur earlier in the runoff season under planning scenarios with climate change impacts. The proposed water activity will support the need for additional water supply and storage within the Southwest Basin BIP and identified as Project-00065 on the list of Basin Identified Projects.
3. Meet environmental needs – increase wildlife habitat by creating additional riparian habitat with the development of the Soldiers Draw Reservoir No. 1.
4. Promote healthy watersheds – potential to increase hydrology (aquifer, storage, and recovery) within the La Plata River Basin by conveying water from the Animas River Basin.

Related Studies

2015 Colorado Climate Plan: The proposed water activity supports development of future water supply in the face of climate change as defined in this study.
• Colorado has warmed in the last 30 years and temperatures may rise an additional 2.5°F to 5°F by 2050.

• Runoff timing will shift an additional 1 to 3 weeks earlier by 2050 due to increased temperatures.
• Future decreases in annual streamflow may occur in all of Colorado’s river basins.
• Nearly all projections show higher winter precipitation by 2050, but there is less agreement for other seasons.

Taxpayer Bill of Rights
N/A