COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

Jared Polis, Governor

Virginia Brannon, DNR Interim Executive Director

Rebecca Mitchell, CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Jonathan Hernandez, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

DATE: January 28-29, 2019 Board Meeting

AGENDA ITEM: 13a. Water Project Loans
Left Hand Ditch Company – Allen's Lake Filler Canal Improvements

---

Introduction

The Left Hand Ditch Company (Company) is applying for a loan for the Allen's Lake Filler Canal Improvements (Project). The purpose of the Project is to prevent water loss by piping a 2,400-foot section of ditch that experiences significant seepage and is prone to embankment failures. As this section of ditch runs through a residential neighborhood, piping the ditch will also help maintenance efforts and improve public safety. The total Project cost is estimated to be $665,000. The Company is requesting a loan to cover 100% of Project cost. See attached Project Data Sheet for a location map and Project summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $671,650 ($665,000 for Project costs and $6,650 for the 1% service fee) to the Left Hand Ditch Company for costs related to the Allen's Lake Ditch Improvements Project, from the Construction Fund. The loan terms shall be 30 years at a blended interest rate of 2.50% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Background

The Company owns and operates irrigation water systems in Boulder County. Its service area generally lies along Left Hand Creek from the foothills of the Front Range east to Niwot. The Company owns five reservoirs, including Allen's Lake, and services approximately 15,000 acres of irrigated farm land. Additionally, the Company provides water supply to municipalities including Left Hand Water District, Jamestown, Ward, City of Boulder, and Boulder County.

In supplying water to its shareholders, the Company makes deliveries to lateral headgates along Left Hand Creek. The Company owns the diversion dams, headgates, ditch, and appurtenant facilities down to and including the Parshall flume of each lateral diverting from Left Hand Creek. Below the individual Parshall flume, the individual lateral ditch companies assume ownership, maintenance, and operations responsibility.

Lake Ditch, owned by the Company, originates from Left Hand Creek and supplies water to Allen's Lake, and ultimately approximately 400 irrigators and 30,000 domestic customers of Left Hand Water District. The section of ditch immediately adjacent to Allen's Lake experiences severe seepage, conservatively estimated at 100 AF per year. Additionally, this section of ditch is prone to ditch failures as was seen in 2018 when the embankment between the ditch and lake failed causing the Company to pump water from Allen's Lake for two weeks while repairs were made. Further, with the residential development that has occurred around Allen's Lake, the ditch is in a narrow right-of-way through backyards of residential homes. Due to this narrow right-of-way, proper cleaning and maintenance of the ditch is difficult and becoming uneconomical.

Loan Feasibility Study

Justin Terfehr, P.E., with WWC Engineering, prepared the Loan Feasibility Study titled, "Feasibility Study Lake Ditch Improvements," dated November 30, 2018. The feasibility study was prepared in accordance with CWCB guidelines and includes an analysis of alternatives, preliminary engineering design, and construction cost estimates. Audited financial statements were prepared by Clausen & Associates.

Borrower – Left Hand Ditch Company

The Company was formed in 1866 as a Mutual Ditch Company and operates as a nonprofit corporation. The Company is in good standing with the Colorado Secretary of State. The 5-member Board of Directors oversees the general management of the delivery system and all water flowing into the ditches and reservoirs. The Company is made up of 466 shareholders owning 16,800 shares of stock. The Company provides an average annual delivery of 50,000 AF.

Revenues are primarily derived from assessments charged on shares of stock owned by the stockholders. A small amount of revenue comes from the lease of surface rights at Left Hand Valley Reservoir. Shareholders vote on annual assessment rates at the annual shareholder meeting held in February. While the Board has authority to take on debt, a shareholder majority vote is required to raise assessments. To enforce assessments, the Board has authority to assess interest on delinquent assessments, to terminate water deliveries after one year of delinquent assessments, and can sell stock that is delinquent by two years or more.

Water Rights

The Company owns the 33 most senior direct flow rights on Left Hand Creek totaling 294.58 cfs and effectively controls the entire flow of Left Hand Creek. The Company also owns two direct flow rights out of South St. Vrain Creek totaling 726 cfs. Water diverted from South St. Vrain Creek represents a majority of the total supply of the Left Hand Ditch Company.

The Company owned water rights which flow through Lake Ditch are shown in Table 1.

TABLE 1: WATER RIGHTS IN LAKE DITCH

Name	Amount	Appropriation Date	Adjudication Date	Water Court Case No.
Lake Ditch	8.92 CFS	5/15/1874	6/2/1882	CA1461
Lake Ditch	3.88 CFS	4/15/1879	6/2/1882	CA1461
Allen's Lake	134.2 AF	12/2/1918	7/23/1951	CA11715
Allen's Lake (enlargement)	569.5 AF	5/17/1927	7/23/1951	CA11715
Allen's Lake (refill)	703.7 AF	12/31/1929	7/23/1951	CA11715

Project Description

The objective of the Project is to eliminate seepage and allow a more economical maintenance and cleaning of the Lake Ditch section adjacent to Allen's Lake. The following alternatives were analyzed by the engineer and the Company:

Alternative 1 – No Action: This alternative was considered unacceptable since it means Lake Ditch will continue to lose water through seepage and the risk of embankment failures will remain high. Additionally, the Company will continue to experience costly maintenance efforts such as dredging sediment out of the ditch. Current cleaning efforts are a disturbance to the surrounding residential community due to the excavation equipment in the narrow right-of-way.

Alternative 2 – Ditch Liner: This alternative would line the ditch with a synthetic material. This alternative would effectively eliminate seepage but would not eliminate the difficult and expensive ditch maintenance. Additionally, the engineer identified constructability issues due to the shallow bedrock that would make the over-excavation and installation of a liner difficult and cost prohibitive. This alternative was quickly found to be undesirable; therefore, a formal cost estimate was not developed.

Selected Alternative 3 – Ditch to Pipe Conversion: This alternative will convert 2,400 LF of an open earthen ditch section to a piped section, effectively eliminating seepage losses and risk of embankment failure. Additionally, it has been determined that flow velocities will convey a majority of the sediment through the pipe significantly reducing cleaning and maintenance along the narrow corridor of Lake Ditch around Allen's Lake.

Multiple pipe configurations, sizing, and shapes were evaluated. A single 3.5 ft diameter high-density polyethylene (HDPE) pipe was determined to be the best option to pass the required flow and fit within the ditch footprint. To follow within the narrow corridor of the existing ditch the pipe will be divided into 33 pipe sections, 26 bends, and 6 manholes. The manholes will be placed at bends greater than 45 degrees and spaced no more than 400-feet apart to allow for efficient cleaning and maintenance of the pipe network.

The cost estimate of this alternative is $665,000 as shown in Table 2. The cost estimate was developed in conjunction between the engineer and contractor based on 60% design plans. The contractor was pre-qualified and selected through the Company's annual Continuing Services Contract.

TABLE 2: ESTIMATED PROJECT COST

Task	Total
Construction	$551,000
Contingency (15%)	$83,000
Engineering	$31,000
TOTAL	**$665,000**

Permitting: A Boulder County Grading Permit will be required for the earthwork necessary to convert the open earthen ditch to a piped ditch. No additional easements will be required as work will occur within existing ditch right-of-way.

Schedule: Final design is pending and construction is expected to begin and be completed in Spring 2019.

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. The Company qualifies for a blended interest rate of 2.50% for a 30-year term (Ownership: 49% Agricultural, 32% High Municipal, 19% Mid Municipal, <1% Low Municipal).

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	$665,000
CWCB Loan Amount	$665,000
CWCB Loan Amount (Including 1% Service Fee)	$671,650
CWCB Annual Loan Payment	$32,090
CWCB Annual Loan Obligation (1st Ten Years)	$35,299
Number of Shares	16,800
Annual Loan Obligation per Share	$2.10/share
Current Assessment per Share	$30/share
Future Assessment per Share	$30/share

Creditworthiness: The Company has $1,761,719 in existing debt made up of two CWCB loans as shown in Table 4. Both loans are in good standing. Loan CT2015-088 was for improvements to Allen's Lake and Lake Isabelle and Loan CT2015-008 was an emergency loan to pay for repairs to the system from the September 2013 flood event. The Company received approximately $669,000 in FEMA funding which has already been applied to the principal balance of loan CT2015-008.

The Company had a third CWCB Loan (C153804) for the Left Hand Valley Reservoir Spillway Project which had an annual payment of $33,875. This loan was paid off eleven years ahead of schedule in December 2018. With the annual debt service savings from the early pay off, the Company does not anticipate needing to raise assessments to cover the new debt service.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
CWCB (CT2015-088)	$1,332,562	$1,256,907	$70,018	2042	Pledge of assessment revenues
CWCB (CT2015-008)	$1,203,086	$504,812	$26,776	2043	Pledge of assessment revenues, Left Hand Valley Reservoir
TOTAL		$1,761,719	$96,794		

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Prior Years[1]	Future w/ Project
Operating Ratio (revenues/expenses) Weak: <100% - average: 100% - 120% - strong: >120%	144% (strong) $630K/$437K	144% (strong) $630K/$438K
Debt Service Coverage Ratio (revenues-expenses)/debt service Weak: <100% - average: 100% - 120% - strong: >120%	237% (strong) ($630K-$296K) $141K	235% (strong) ($630K-$296K) $142K
Cash Reserves to Current Expenses Weak: <50% - average: 50% - 100% - strong: >100%	60% (average) $264K/$437K	60% (average) $264K/$438K
Annual Operating Cost per Acre-Foot (50,000 AF) Weak: >$20 - average: $10 - $20 - strong: <$10	$8.74 (strong) $437K/50,000AF	$8.76 (strong) $438K/50,000AF

[1] Prior years includes $34k in annual debt service for CWCB Loan C153804 which was paid in full December 2018.

Collateral: Security for this loan will be a pledge of assessment revenues back by an assessment covenant and the Project itself (pipeline). This security is in compliance with the CWCB Financial Policy #5 (Collateral).

cc: Terry Plummer, Superintendent, Left Hand Ditch Company
Jennifer Mele, Colorado Attorney General's Office

Attachment: Water Project Loan Program – Project Data Sheet

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Allen's Lake Filler Canal Improvements

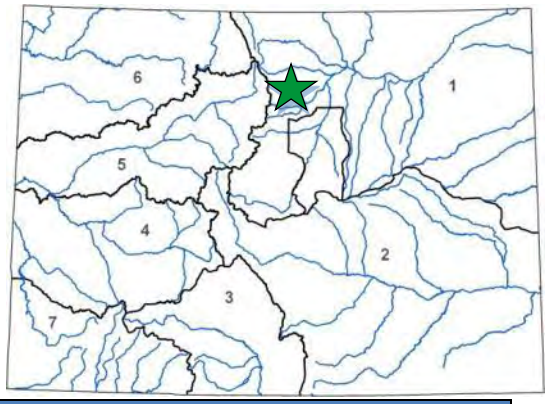
Left Hand Ditch Company

January 2019 Board Meeting

LOAN DETAILS	
Project Cost:	$665,000
CWCB Loan (with Service Fee):	$671,650
Loan Term and Interest Rate:	30 Years @ 2.50%
Funding Source:	Construction Fund

BORROWER TYPE		
Agriculture	*Municipal*	*Commercial*
49%	<1% Low - 19% Mid - 32% High	0%

PROJECT DETAILS	
Project Type:	Ditch Rehabilitation
Average Annual Diversions:	50,000 AF



LOCATION			
County:			Boulder
Water Source:			Left Hand Creek
Drainage Basin:			South Platte
Division:	1	*District:*	5

The Left Hand Ditch Company, located in Boulder County, provides irrigation water to a service area of approximately 15,000 acres north of Boulder. Its service area generally lies along Left Hand Creek from the foothills of the Front Range east to Niwot.

The Allen's Lake Filler Canal Improvements Project focuses on a 2,400-foot reach of Lake Ditch which parallels the west shore of Allen's Lake. The existing ditch is experiencing notable losses due to seepage and excessive sedimentation. This is preventing the ditch from delivering the Company's desired 25 cfs design flow. Due to the extremely narrow right-of-way (7.5 feet on both sides of ditch centerline), proper cleaning and maintenance of the ditch is uneconomical. Additionally, residents of the adjacent community surrounding Allen's Lake have built their own crossings and patios on the ditch. This gives rise to concerns of public safety and further restricts ditch cleaning efforts. To address these issues, the Company has opted to pipe the ditch with a 3.5-ft diameter pipe. Construction is anticipated to begin in the spring of 2019.