



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

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

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: Colorado Water Conservation Board Members

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

DATE: January 23-24, 2017 Board Meeting

AGENDA ITEM: 15a. Water Project Loans
St. Vrain and Left Hand Water Conservancy District - Lake 4 Outlet Pipeline
Repair

Introduction

The St. Vrain and Left Hand Water Conservancy District (District), acting by and through its water activity enterprise, is applying for a loan for the Lake 4 Outlet Pipeline Repair (Project). The District and Boulder County (County) are co-owners of Rock'n WP Lake No. 4 (Lake 4). Lake 4 is also the subject of a CWCB emergency loan to the District (Contract CT2016-2452) approved at the July 2014 CWCB Board Meeting. That emergency loan is to fix Lake 4's dam breach that occurred during the September 2013 flood event. The purpose of this pipeline Project is to fix leaks in Lake 4's outlet pipeline that existed prior to the 2013 flood. The County is contributing funds to this Project as part of a cost-share agreement with the District. The District is seeking a CWCB loan to cover 100% of its cost share, or approximately 67% of the total Project cost, which is estimated at \$911,750. See attached Project Data Sheet for a location map and Project summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed \$619,130 (\$613,000 for Project costs and \$6,130 for the 1% service fee) to the St. Vrain and Left Hand Water Conservancy District, acting by and through its water activity enterprise, for costs related to the Lake 4 Outlet Pipeline Repair Project, from the Construction Fund. The loan terms shall be 30 years at a blended interest rate of 2.85% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.



Background

The District's mission is to serve its basin by protecting water rights, encouraging improved water management, and supporting the development of additional water storage. In addition to its original purpose, the District, through its water activity enterprise, has operated an augmentation plan for use by basin water users since 1992.

Lake 4 is located between Lyons and Longmont and is an off-channel reservoir created by gravel mining. The State Engineer approved its slurry wall liner in 1996. In November 2001, the District and County each acquired an undivided 50% interest in Lake 4. Lake 4 is an integral component of the District's augmentation plan as it is currently the only replacement source that can provide winter time replacement. The County uses Lake 4 primarily for in-reservoir purposes including recreation, and fish and wildlife propagation, but also to make minimum stream flow deliveries per the March 10, 2015 Water Delivery Agreement between the County and the CWCB.

Lake 4 releases water to the St. Vrain Creek via an existing half-mile-long 18-inch reinforced concrete pipe (RCP) which travels underneath two unlined lakes owned by the County: West Lake and A-Frame Lake. Groundwater is infiltrating the pipeline such that there are releases to the river when the outlet gate is closed. During the summer of 2013 the District and County began to evaluate the pipeline to fix the groundwater issue. However, before that could be accomplished, the September 2013 flood occurred, resulting in a breach of Lake 4's dam. Despite the major damage to the dam and its liner, the flood did not cause further damage to the outlet pipeline, though it has caused a delay in getting the pipeline repaired.

Construction on Lake 4's dam is scheduled to occur in 2017. Since the 2013 flood, the District has had to lease water from Longmont to make up for the loss of replacement water deliveries from this reservoir. This agreement operates under a substitute water supply plan which expires after the 2018 irrigation season.

Loan Feasibility Study

Mark McLean, P.E., with Deere & Ault Consultants, Inc., prepared the Loan Feasibility Study titled, "Lake 4 Outlet Pipeline Repair, Feasibility Study," dated November 8, 2016. 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 provided by Clifton Larson Allen LLP. The District received a \$5,000 grant from the CWCB's Feasibility Study Small Grant Fund which covered 50% of the feasibility cost.

Borrower - St. Vrain and Left Hand Water Conservancy District

The District was established by decree of the Weld County District Court in 1971 as a water conservancy district under the provisions of the 1937 Water Conservancy Act. The District is a quasi-municipal corporation and a political subdivision of the State of Colorado with all powers thereof which include the power to levy taxes against property within the District. The District is managed by nine appointed Board of Directors.

The District has a tax-supported general fund to provide for the daily activities, salaries, expenses, and operating costs of the District. The District's ballot initiative to "de-Bruce" was approved at the November 2016 election. The District operates its augmentation program under a fee-supported water activity enterprise. Enterprise revenues are primarily derived from fees on its augmentation membership. Other revenue sources include C-BT water rental, and fund transfers from the District's general fund as allowed by statute.

Water Rights

The water rights owned by the District specific to Lake 4 include:

TABLE 1: LAKE 4 WATER RIGHTS

Name	Amount	Appropriation Date	Adjudication Date	Water Court Case No.
Rock'n WP Ranch Lake No. 4	574.43 AF 50 CFS	4/23/1992	12/31/1992	88CW74
Rock'n WP Ranch Lake No. 4	600 AF 100 CFS	12/19/2001	12/31/2001	01CW262

Of the 88CW74 right, the use for recreational, fish and wildlife preservation and propagation has been made absolute while the use for augmentation, replacement and exchange, irrigation and industrial uses, associated with the original gravel mining operator's depletions in Boulder and Weld Counties, remains conditional with the most recent diligence finding occurring in 15CW3052. The District filed for the 01CW262 right to broaden the augmentation use for and within the District. That right remains conditional with the most recent diligence filed in 12CW91.

The District operates its augmentation plan pursuant to its decree in case 02CW334. Permitted structures that may be augmented include wells, pipelines, springs, pumps, and ponds. Among the permitted uses for water diverted through the permitted structures include, but are not limited to: domestic household-only use, commercial use, irrigation up to 1 acre, stock water, and gravel mining. Depletions are calculated per formulas contained within the decree and are determined on a per structure basis at the time of inclusion. Currently the plan covers 209 members and provides 182 AF of replacement water. With a repaired Lake 4, the District has the capacity to provide approximately 305 AF of replacement water.

Project Description

The purpose of the Project is to repair or replace Lake 4's outlet works so that reservoir releases can be accurately credited to the augmentation plan and accepted by the State Engineer's Office (SEO). To achieve this, four alternatives were analyzed:

Alternative 1 - No Action: This alternative was not selected because repair of the leaks is critical for reservoir accounting and water rights administration purposes as the District must show water delivered to the Creek is reservoir water and not groundwater. Without repairs, the reservoir cannot be used in the District's augmentation plan, and member depletions cannot be replaced.

Alternative 2 - New Pipeline: This alternative would abandon the existing pipeline and replace it with a new pipeline between Lake 4 and the St. Vrain Creek. The cost associated with this alternative is approximately \$1.6 million. This alternative was not selected as it was the highest cost alternative, would be the most disruptive to the natural environment, and would be difficult to build given the deep excavations required along the route in close proximity to the South Branch of St. Vrain Creek.

Alternative 3 - Multi-stage Reservoir Releases: This alternative would abandon the existing pipeline and replace it with three outlet structures: from Lake 4 to West Lake, from West Lake to A-Frame Lake, and from A-Frame Lake to the St. Vrain Creek. The cost associated with this alternative is approximately \$410,000. This alternative was the lowest cost but was not selected because it would complicate the water administration and accounting, and be difficult to physically operate. Additionally, because of the elevation of West Lake, about one-third of Lake 4 would be unable to be gravity discharged causing the need for pumps or the loss of that storage.

Selected Alternative 4 - Line Existing Pipeline: The pipeline was recently video inspected, which confirmed leaks in several locations but overall the pipeline remains structurally sound. This alternative will repair the existing pipeline by slip lining 2,100 LF of the existing pipeline with high density polyethylene (HDPE) pipe, and installing 300 LF of new HDPE pipeline. Four new access manholes will be installed to ensure no significant bends occur between manholes and to reduce the maximum length between manholes to 500 LF. A new Parshall flume will be installed as well as a control gate on the downstream end of the pipeline. This alternative has the least environmental impact, the greatest institutional, operational, and administrative certainty, and allows delivery of the greatest amount of Lake 4 storage by gravity.

The cost associated with this alternative is \$911,750 as shown in Table 2. The County has committed to contribute \$298,750 to the Project.

TABLE 2: PROJECT COST

Task	Cost
Engineering	\$117,000
Permitting/Regulatory	\$29,000
Pipeline Repairs	\$480,000
Misc Construction	\$194,000
Subtotal	\$820,000
Contingency	\$91,750
TOTAL	\$911,750

Permitting: The District and County will undergo a Boulder County Land Use review for this Project as part of the County's overall repair projects including Lake 4 dam, West Lake, and A-Frame Lake. The District anticipates that work will be performed pursuant to an existing nationwide permit if a 404 permit is required by the Army Corps. A new easement with Boulder County will be obtained as there is some uncertainty if the existing easement coincides with the actual location of the existing pipe.

Schedule: Final design is expected by the end of January 2017. Construction is expected to begin in October 2017 and be complete by June 2018.

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. The District qualifies for a blended interest rate of 2.85% for a 30-year term (Membership: 97% High Municipal, 3% Commercial). Since the 2013 flood, the augmentation membership declined from 240 members in 2013 to a current membership of 209 because some homeowners who lived in the floodplain participated in FEMA buyouts, and a few members who, in part due to rising augmentation cost, have since realized they didn't actually need the augmentation water. The District believes membership dropouts have settled and there remains a demand for new memberships. These financials assume no additional members are lost and no additional members are gained.

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	\$911,750
Boulder County Contribution	\$298,750
CWCB Loan Amount	\$613,000
CWCB Loan Amount (Including 1% Service Fee)	\$619,130
CWCB Annual Loan Payment	\$30,978
CWCB Annual Loan Obligation (1 st Ten Years)	\$34,076
CWCB Annual Loan Obligation per AF of Augmentation Water (182 AF)	\$187
CWCB Annual Loan Obligation per 1,000 gal of Augmentation Water (59,304 kgal)	\$0.57

Creditworthiness: Neither the District nor its water activity enterprise have existing long term debt. However, the enterprise does have an existing \$4,545,000 CWCB emergency loan approval which has yet to be disbursed. That loan is for an emergency project which has a FEMA project worksheet. It is expected that FEMA will reimburse 75% of project cost, and the State will reimburse 12.5% of project costs through the public assistance program. Accordingly the financial analysis looks at two scenarios: a worst case where reimbursements are denied (w/o reimbursements), and the probable case where reimbursements lower the emergency loan balance to \$607,500 (w/ reimbursements).

TABLE 4: EXISTING DEBT OBLIGATION

Lender	Approved Amount	Annual Payment w/o reimbursements	Annual Payment w/ reimbursements	1 st Payment Due	Last Payment Due
CWCB	\$4,545,000	\$253,918	\$33,940	3/1/2019	3/1/2046

In response to flood related activities, membership fees were increased by 15% in 2014 and 50% in 2015. In 2016 the District changed from a flat fee to a tiered structure to more effectively communicate fixed costs (administration) and variable costs (water). Fees were increased for 2016 on average of 59%, and then by 9% in 2017. Augmentation membership fees for 2017 include a base fee of \$218 or \$545 for residential and commercial members, respectively, plus a 'usage' fee of \$0.90 per 1,000 gal up to 1 AF, and \$0.70 per 1,000 gal over 1 AF. In order to fund the loan obligations for this pipeline loan and the emergency loan, a new debt service fee of \$0.57 per 1,000 gallons for the pipeline loan, plus either \$4.71 or \$0.63 per 1,000 gallons for the emergency loan, depending on reimbursements received, will be required.

Each augmentation member pays a different rate per AF because of the tiered rate structure. However on average, augmentation cost for 2017 will be \$495/AF. The debt service of these two loans will increase the average cost to approximately \$2,200/AF if reimbursements are denied or to \$885/AF if reimbursements are received as expected.

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Budget w/o Projects	Future w/ Project (w/o Reimbursements)	Future w/ Project (w/ Reimbursements)
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	101% (average) \$91K/\$90K	100% (average) \$404K/\$403K	101% (average) \$162K/\$161K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	NA	100% (average) (\$404K-\$90K) \$313K	101% (average) (\$162K-\$90K) \$71K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	263% (strong) \$237K /\$90K	59% (average) \$237K /\$403K	147% (strong) \$237K /\$161K

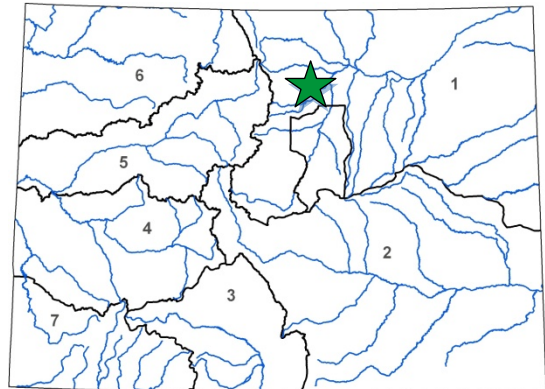
Collateral: Security for this loan will be a pledge of the District's water activity enterprise revenues backed by a rate covenant as evidenced by annual financial reporting. The District will also pledge unencumbered C-BT units valued at a minimum of 110% of the loan amount. This is in compliance with the CWCB Financial Policy #5 (Collateral).

Current value of the District's 271 C-BT units is approximately \$6,775,000. The emergency loan is collateralized at 110% using 200 of the District's 271 C-BT units. The District intends that, should FEMA and State reimbursements be denied, or the debt service proves to be more than the membership is willing or able to pay, it will work with CWCB to sell C-BT units in order to reduce or pay off the loan principal.

cc: Sean Cronin, Executive Director, St. Vrain and Left Hand Water Conservancy District
Jennifer Mele, Colorado Attorney General's Office
Attachment: Water Project Loan Program - Project Data Sheet



L O A N D E T A I L S	
Project Cost:	\$912,000
CWCB Loan (with Service Fee):	\$619,130
Loan Term and Interest Rate:	30 Years @ 2.85%
Funding Source:	Construction Fund
B O R R O W E R T Y P E	
Agriculture	Municipal
0%	0% Low - 0% Mid - 97% High
	3%
P R O J E C T D E T A I L S	
Project Type:	Reservoir Rehabilitation
Average Annual Delivery:	182 AF
Storage Preserved:	600 AF



L O C A T I O N	
County:	Boulder
Water Source:	St Vrain Creek
Drainage Basin:	South Platte
Division:	1
District:	5

The St. Vrain and Left Hand Water Conservancy District and Boulder County Parks and Open Space jointly own a lined reservoir known as Rock'n WP Ranch Lake No. 4 (Lake 4). Lake 4 was created by reclaiming mined slopes, installing a slurry wall liner around the former gravel pit, and installing inlet and outlet structures. The outlet works included a half-mile-long 18-inch reinforced concrete pipe approximately extending from the dam to the St. Vrain Creek. The District and County recently inspected the outletworks pipeline and determined that it is leaking in several locations. It is critical for reservoir accounting and water rights administration purposes that the water delivered through the pipeline be water from Lake 4 and not groundwater leaking into the pipe between the dam and the river. Therefore the District and Boulder County desire to repair the pipe to resolve the leakage and to extend the service life of the structure.

