



COLORADO
**Colorado Water
Conservation Board**
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Rachel Pittinger, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

DATE: March 10-11, 2021 Board Meeting

AGENDA ITEM: 19g. Water Project Loans
The Tunnel Water Company - Rawah Ditch Tunnel Rehabilitation

Staff Recommendation

Staff recommends the Board approve a loan not to exceed \$2,171,500 (\$2,150,000 for Project costs and \$21,500 for the 1% service fee) to The Tunnel Water Company for costs related to the Rawah Ditch Tunnel Rehabilitation, from the Construction Fund. The loan terms shall be 30 years at the interest rate of 1.70% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Introduction

The Tunnel Water Company (Company) is applying for a CWCB blended interest rate loan for the Rawah Ditch Tunnel Rehabilitation (Project). The purpose of the Project is to prevent future tunnel collapse and blockage, erosion of the ditch bank and mountainside collapse of the existing tunnels. An inspection by the Company's engineers concluded the north tunnel is in danger of imminent collapse and that the southern tunnel is likely to suffer collapse within in a few years. The Project cost estimate is \$2,150,000. The Company is requesting a loan for 100% of Project costs. See attached Project Data Sheet for a location map and Project summary.



Borrower - The Tunnel Water Company

The Company is a mutual ditch company that was incorporated in 1938 located in Larimer County. The Company purchased the tunnel and its adjoining Laramie River System in 1938 after the Greeley-Poudre Irrigation District dissolved. The Company operates the trans-mountain diversion structure, Laramie-Poudre Tunnel (Tunnel), aka Laramie River Tunnel, for the benefit of its two shareholders: Water Supply and Storage Company (WSSC) and Windsor Reservoir and Canal Company (WRCC). Assets of the Greeley-Poudre Irrigation District were divided between WSSC and WRCC. The Company office is located in Fort Collins and operates as a nonprofit corporation. It is in good standing with the Colorado Secretary of State. The Company has 450 shares of stock, owned by two shareholders: WSSC (2/3 interest) and WRCC (1/3 interest). The Company's revenues are primarily derived from share assessments.

The Company's Articles of Incorporation provide the five-member Board of Directors with authority to levy assessments to meet the expenses of operation and maintenance of the Company, including the repayment of debt. The Articles of Incorporation were amended in 2012 to provide the Board with the power to borrow money and provide Company property as security for debt. The Company's By-laws provide the authority to enforce unpaid assessments by ceasing water deliveries and if necessary by selling delinquent stock shares. The approximate yield of the tunnel is 18,000 AF and includes the diversions from the Rawah Ditch.

Background

Water from the Laramie River, a tributary of the North Platte River, is about 60 miles west of Fort Collins, and delivers water through the 2.2-mile tunnel to the Cache la Poudre River. WSSC was founded in 1891 and delivers irrigation water to its shareholders, primarily for agricultural irrigation on approximately 40,000 acres lying below the Larimer County Canal. WRCC was founded in 1890 and delivers water to shareholders via the Soldier Canyon and Bellvue Water Treatment Plant to Fort Collins, Loveland and Greeley. Water diversions from the Laramie River for use outside the Laramie River Basin are governed by a consent decree from the United States Supreme Court allocating water supply from the Laramie River between the State of Colorado and the State of Wyoming.

The Company also owns and operates the Rawah Ditch, which collects water from the eastern slopes of the Rawah Mountain Range, delivers it to the West Branch of the Laramie River above the diversion point for the Laramie-Poudre Tunnel. Water collected from the Rawah Ditch is available for diversion into the Laramie-Poudre Tunnel. Approximately 1-mile upstream where the Rawah Ditch discharges into the West Branch of the Laramie River, the water goes through two rock tunnels, a northerly one and a southerly one, 70 feet and 90 feet long, respectively. The Rawah Ditch north and south tunnels were built around 1905. Significant new rockfall in each tunnel has been observed. The north tunnel was determined to be in danger of imminent collapse and the south tunnel was likely to suffer collapse within a few years. Collapse of either tunnel poses a significant threat to the Rawah Ditch. If either tunnel collapses, water will back up and overtop the ditch, eroding the ditch bank and causing a catastrophic collapse of the mountainside. As a result, the Company would lose most of the available water supply from the Rawah Ditch and face significant reconstruction and restoration costs.

Loan Feasibility Study

Mr. Donald Frick, P.E. and General Manager of the Company, with assistance from Ryan Marsters, P.E., P.G., of Lithos Engineering prepared the Loan Feasibility Study titled, "Feasibility Study Rawah Ditch Tunnel Lining," dated January 2021. The feasibility study was prepared in accordance with CWCB guidelines and included an analysis of alternatives, preliminary engineering, and engineering costs

estimated. Audited financial statements were provided by Scofield and Scofield, P.C., Certified Public Accountants.

Water Rights

The water rights of the Company are shown in Table 1.

TABLE 1: WATER RIGHTS

Name	Amount	Appropriation Date	Adjudication Date	Water Court Case No.
Laramie River Tunnel	300 cfs	8/25/1902	2/20/1914	CA2725
McIntyre Ditch	40 cfs	8/25/1902	2/20/1914	CA2725
Rawah Ditch	225 cfs	8/25/1902	2/20/1914	CA2725
Rawah Lower Supply Ditch	275 cfs	8/25/1902	2/20/1914	CA2725

Diversions from the Rawah Ditch for delivery to the Laramie-Poudre tunnel have not historically been measured. Total diversions from the Laramie River through the Laramie-Poudre Tunnel including deliveries from the Rawah Ditch average 18,000 AF per year.

Project Description

The objective of the Project is to repair the Rawah Ditch north and south tunnels to prevent future collapse, tunnel blockage, and mountainside collapse.

Alternative 1 - No Action: This alternative was not selected because it will eventually result in the failure of the tunnels, rendering them unusable pending emergency repairs. If failure occurs during irrigation season, it would impact the shareholders who rely on diversions through the tunnel for a substantial portion of their annual irrigation and municipal needs by up to 90% of the water supplied by the ditch.

Alternative 2 - Rock Bolting and Steel Set Reinforcement: This alternative involves physically entering the tunnels and installing rock bolting, metal meshing, and square steel reinforcement. This alternative was not selected because it requires workers enter directly in the tunnels where there is ongoing, unpredictable rockfall occurring posing significant, immitigable safety hazards.

Selected Alternative 3 -Slip-Lining and Grouting: This alternative involves inserting high density polyethylene (HDPE) pipe, or similar suitable material, into each tunnel and pumping grout in the annulus between the pipe and the existing rock. Headwalls would be poured at the entrance to each tunnel.

The total cost associated with the Project is \$2,150,000 as shown in Table 2.

TABLE 2: ESTIMATED PROJECT COST

Tasks	Cost
Design Engineering	\$400,000
Construction	\$1,700,000
SUBTOTAL	\$2,100,000
Contingency	\$50,000
TOTAL	\$2,150,000

Permitting: The Rawah Ditch and Project site lie within the Canyon Lakes District of the Arapaho and Roosevelt National Forest. The Company has contacted the Forest Service to

determine what, if any, permitting requirements may exist. The Rawah Ditch and the tunnels are located within the Company's perpetual tunnel easement under the Right of Way Act of 1891. No special use permit is necessary for the maintenance work associated with this Project. The Company will apply for a staging and construction permit from the Forest Service, including the use of a secondary access road, the Company has historically used for access to the Rawah Ditch.

Schedule: Final design is underway and construction is scheduled for completion in May 2021.

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. The Company qualifies for the Wildfire Impact Emergency Loan terms of 3 years with no interest followed by 27 years at a blended interest rate of 1.70% (Ownership: 21% Agricultural, 4% Low-Income Municipal, 26% Middle-Income Municipal, 49% High-Income Municipal). The Company maintains three CWCB loans in repayment, one CWCB loan in disbursement, and two CWCB loan requests.

TABLE 3: FINANCIAL SUMMARY

Project Cost	\$2,150,000
CWCB Loan Amount	\$2,150,000
CWCB Loan Amount (Including 1% Service Fee)	\$2,171,500
CWCB Annual Loan Payment	\$93,004
CWCB Annual Loan Obligation (1 st Ten Years)	\$102,304
Number of Shares	450
Annual Loan Obligation per Share for this Loan	\$227
Current Assessment per Share	\$2,445
Future Assessment per Share ¹ (Estimated for all Projects)	\$3,155

¹Three Projects that are considered as part of the future assessment in Table 3 are the West Half Laramie-Poudre Tunnel Rehabilitation Project, Headgates Improvement Project (Wildfire Impact Loan) and this Project.

Creditworthiness: The Company has \$20,764,464 in existing debt made up of three CWCB loans. Additionally, the Company is approved for a CWCB loan not to exceed \$17,250,800 of which \$9,939,598 has been disbursed to date. These loans are in good standing and are shown in Table 4. Assessments have gradually increased from 2015 to present. Assessments were \$1,066/share in 2015, and are currently \$2,445/share. The Company will continue to incrementally raise assessments to the estimated future assessment needed to cover all of the CWCB loans.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
CWCB C150052	\$1,570,214	\$888,163	\$98,226	2032	Water rights available to the Laramie River System of the Tunnel Water Company. The west and east portal structures and the easement for the Laramie-Poudre Tunnel.
CWCB C115065	\$1,847,932	\$1,037,228	\$112,799	2032	
CWCB CT2016-2001	1,637,665	\$1,588,273	82,582	2050	
Subtotal (Existing Debt)		\$3,513,664	\$293,607		
CWCB CT2019-3706	\$17,250,800 (In Disbursement)	\$17,250,800 (Max Approved)	\$863,144 (Max Approved)	2054	
Total		\$20,764,464	\$1,156,751		

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Prior Years	Future w/ Project	Future w/ all Projects ¹
Operating Ratio ² (revenues/expenses) weak: <100% average: 100% - 120% strong: >120%	157% (strong) \$1.04M/\$663K	136% (strong) \$1.04M/\$765K	100% (average) \$1.69M/\$1.69M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% average: 100% - 120% strong: >120%	230% (strong) (\$1.04M-\$369K) \$294K	170% (strong) (\$1.04M-\$369K) \$396K	100% (average) (\$1.69M-\$369K) \$1.32M
Cash Reserves to Current Expenses weak: <50% average: 50% - 100% strong: >100%	145% (strong) \$962K/\$663K	126% (strong) \$962K/\$765K	57% (average) \$962K/\$1.69M
Annual Cost per Acre-Foot (18,000AF) weak: >\$20 average: \$10 - \$20 strong: <\$10	\$37 (weak) \$663K/18,000AF	\$43 (weak) \$765K/18,000AF	\$94 (weak) \$1.69M/18,000AF

¹ Future with Project ratios assume CWCB Loan CT2019-3706 is fully disbursed and includes Headgates Improvements Project (Wildfire Impact Loan) and assessments are increased to an estimated \$3,155/share.

² Revenue includes increased assessment revenues from 2020 of \$2,445/share.

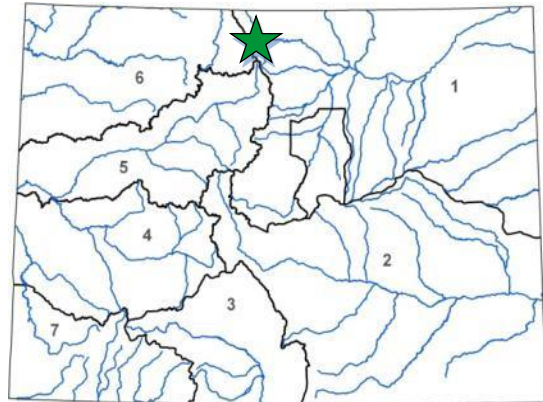
Collateral: Security for this loan will be a pledge of assessment revenues and the Project itself including collateral used to secure CWCB loan contracts: C150052, C115065 and CT2016-2001. This is in compliance with CWCB Financial Policy #5 (Collateral).

cc: Mr. Donald Frick, General Manager, The Tunnel Water Company
 Jennifer Mele, Colorado Attorney General's Office

Attachment: Water Project Loan Program - Project Data Sheet



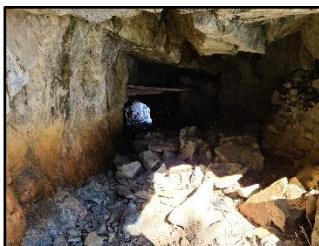
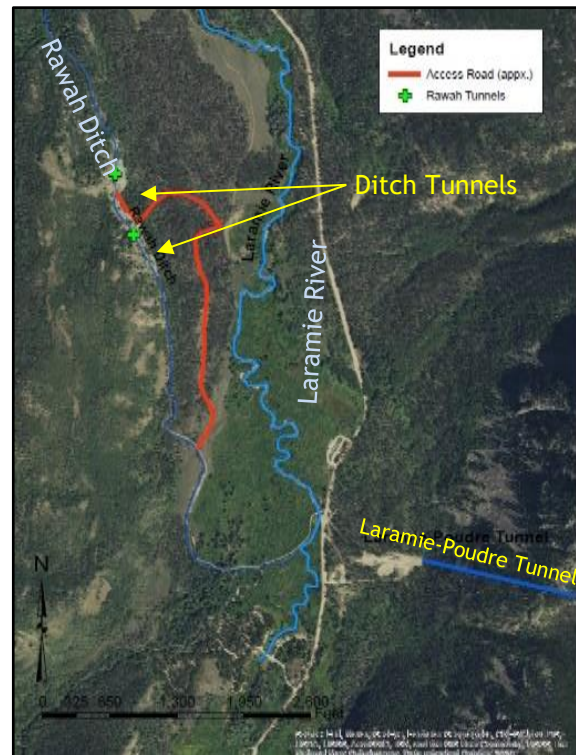
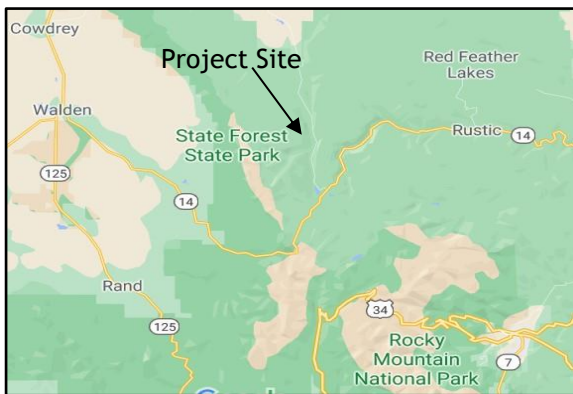
L O A N D E T A I L S	
Project Cost:	\$2,150,000
CWCB Loan (with 1% Service Fee):	\$2,171,500
Loan Term and Interest Rate:	30 Yrs @ 1.70%
Funding Source:	Construction Fund
B O R R O W E R T Y P E	
Agriculture	Municipal Commercial
21%	4% Low - 26% Mid - 49% High 0%
P R O J E C T D E T A I L S	
Project Type:	Ditch Rehabilitation
Average Annual Diversions:	18,000 AF



L O C A T I O N	
County:	Larimer
Water Source:	Rawah Creek
Drainage Basin:	North Platte/South Platte
Division:	1 District: 48

The Tunnel Water Company (Company) owns and operates the Laramie-Poudre Tunnel (LPT) for the benefit of its two shareholders that include Water Supply and Storage Company (WSSC) and Windsor Reservoir and Canal Company (WRCC). WSSC delivers irrigation water to its shareholders, primarily for agricultural irrigation on approximately 40,000 acres lying below the Larimer County Canal. WRCC delivers water to its municipal shareholders via the Soldier Canyon and Bellvue Water Treatment Plants. It also owns and operates the Rawah Ditch (Ditch) which collects water from Rawah Creek and delivers it to the West Branch of the Laramie River, upstream of the LPT.

The Ditch includes two tunnels, 70 feet long and 90 feet long. At completion of the 2020 diversion season, both tunnels were found to have significant rockfall, and subsequently the Company's engineers concluded that one tunnel was in danger of imminent collapse, while the other would likely collapse within a few years. If either tunnel collapses, the Company would be unable to make water deliveries and would incur significant repair costs. The selected alternative will slip line and grout the tunnel in order to avoid the need for workers to be in tunnels with unpredictable rockfall. Construction is expected to start in the spring of 2021.



Tunnel rockfall.



Unstable conditions inside the North tunnel.