



**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

Dan Gibbs, DNR Executive Director

Rebecca Mitchell, CWCB Director

**TO:** Colorado Water Conservation Board Members

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

**DATE:** November 20-21, 2019 Board Meeting

**AGENDA ITEM:** 11b. Change to Existing Loans  
The Tunnel Water Company - West Half Laramie-Poudre Tunnel Rehabilitation

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### Introduction

The Tunnel Water Company (Company) received approval of a \$9,090,000 CWCB loan (Contract number CT2019-3706) to finance the West Half of the Laramie-Poudre Tunnel Rehabilitation (Project) at the March 2019 Board Meeting. The purpose of the Project is to prevent future tunnel collapse and blockage by rehabilitating the existing west half of the tunnel with replacement of the existing support systems and to prevent future collapse and tunnel blockage. The Company began construction in August 2019 and discovered significant voids behind and above the existing structural support that the preliminary engineering investigation did not show. Additional material and structural support is needed beyond the original quantified estimate causing the Project cost to increase. The total Project cost is now estimated to be \$11,500,000. The Company is requesting a loan increase to fund 100% of the Project. This additional Project cost will exceed the Boards \$10 million authorization and therefore will need to be included in the 2020 Projects Bill. See the attached Project Data Sheet for a location map and a Project summary.

### Staff Recommendation

Staff recommends the Board request the General Assembly authorize a loan for 11,615,000 to The Tunnel Water Company in the 2020 CWCB Projects Bill.

The \$11,615,000 (\$11,500,000 for Project costs and \$115,000 for the 1% service fee) loan to The Tunnel Water Company is for costs related to the West Half of the Laramie-Poudre Tunnel Rehabilitation Project, from the Construction Fund. This is an increase of \$2,525,000 (\$2,500,000 for Project costs and \$25,000 for the 1% service fee). The loan terms shall remain 30 years at blended interest rate of 2.85% per annum. Security for the loan shall remain in compliance with CWCB Financial Policy #5.



## Project Update

**West Half of the Laramie Poudre Tunnel:** In the transition from the box culverts, installed in 2015 to the historic tunnel, there is a zone which includes some badly deteriorated concrete and steel supports. While the contractor, Harrison Western Construction, prepared preliminary probe holes earlier this year in that area, there was some concern about what might be revealed when the old steel supports and concrete were removed. When additional probe holes were drilled after construction began in August 2019, it was discovered there were significant voids behind and above the concrete and existing steel supports. The contractor has filled those voids with substantial amounts of grout and removed the old concrete and the deteriorated steel support structures. Additionally, there were old square set timbers, rebar, trees, sand, gravel and rocks which had been used to backfill around historic tunnel in that section.

Upon recommendation by Lithos Engineering and by Harrison Western Corporation, the Company decided to use new, steel square structural supports in the tunnel through the transitional section to carry the weight and ensure short term and long term structural integrity. This transition section runs approximately 200-feet into the tunnel until the structurally competent rock, which comprises the vast majority of the tunnel geology. As of October 2019, 20 steel supports were installed through this transitional section.

With the assistance of Lithos Engineering, the Company revised the projected costs of the Project, which exceeded the initial estimates by \$2,500,000. The increase includes both the cost for the additional work required in this transitional section between the 2015 box culverts and the historic tunnel, and the cost of demobilization and remobilization for a second winter of construction.

The updated Project cost estimate is \$11,500,000 as shown in Table 1.

TABLE 1: UPDATED PROJECT COST ESTIMATE

Task	Original	Current
Design Engineering	\$1,100,000	\$1,800,000
Construction and Construction Management	\$7,700,000	\$9,450,000
Contingency	\$200,000	\$250,000
Total	\$9,000,000	\$11,500,000

**Permitting:** The Project is a maintenance activity and permitted under the terms of its perpetual tunnel easement and Colorado law.

**Schedule:** Construction is underway and will continue through Spring 2021, allowing for construction demobilization and remobilization in non-irrigation seasons.

### Financial Analysis

Table 2 provides a summary of the Project's financial aspects. The term of the loan will remain at 30 years at a blended interest rate of 2.85% (Ownership: 4% Low-Income Municipal, 25% Middle-Income Municipal, 49% High-Income Municipal, 22% Agriculture). This increase will cover 100% of eligible costs.

**TABLE 2: UPDATED FINANCIAL SUMMARY**

	Original	Current
Total Project Cost	\$9,000,000	\$11,500,000
CWCB Loan Amount	\$9,000,000	\$11,500,000
CWCB Loan Amount (Including 1% Service Fee)	\$9,090,000	\$11,615,000
CWCB Annual Loan Payment	\$454,818	\$581,157
CWCB Annual Loan Obligation (including 10% Reserve)	\$500,300	\$639,272
Number of Shares	450	450
Annual Loan Obligation per Share	\$1,112/share	\$1,420/share
Current Assessment per Share	\$1,370/share	\$1,370/share
Future Assessment per Share	\$2,620/share	\$2,970/share

**Creditworthiness:** The Company has \$3,879,568 in existing debt made up of three CWCB loans as summarized in Table 3. All loans are for the rehabilitation on the Laramie-Poudre Tunnel, and are in good standing.

**TABLE 3: UPDATED EXISTING DEBT**

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
CWCB C150052	\$1,570,214	\$997,263	\$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 C150065	\$1,847,932	\$1,165,305	\$112,799	2032	
<b>Subtotal (Existing Debt)</b>		\$2,162,568	\$211,025		
CWCB CT2016-2001	\$1,717,000 (In Disbursement)	\$1,717,000 (Max Approved)	\$82,582 (Max Approved)	-	
<b>Total</b>		\$3,879,568	\$293,607		

**TABLE 4: UPDATED FINANCIAL RATIOS**

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	106% (average) \$518K/\$490K	100% (average) \$1.22M/\$1.21M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	113% (average) (\$518K-\$279K) \$211K	100% (average) (\$1.22M-\$279K) \$933K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	31% (weak) \$154K/\$490K	13% (weak) \$154K/\$1.21M
Annual Operating Cost per Acre-Foot (15,755AF) weak: >\$20 - average: \$10 - \$20 - strong: <\$10	\$31 (weak) \$490K/15,755 AF	\$77 (weak) \$1.21M/15,755 AF

***Collateral:*** Security for this loan will remain a pledge of assessment revenues, and the Project itself, the west and east portal structures for the Laramie-Poudre Tunnel. This is in compliance with CWCB Financial Policy #5 (Collateral).

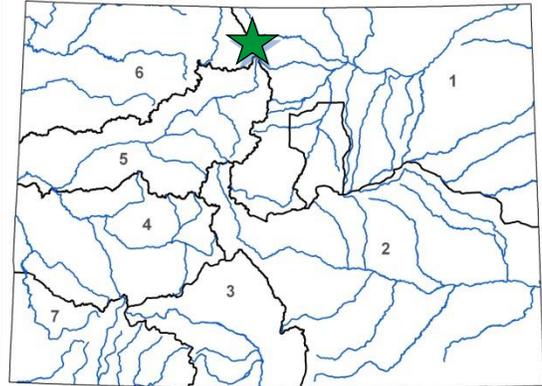
cc: Dennis Harmon, General Manager, The Tunnel Water Company  
Jennifer Mele, Colorado Attorney General's Office

Attachments: Water Project Loan Program - Project Data Sheet  
Original Board Memo (March 2019)



(Loan Increase)

L O A N D E T A I L S	
Project Cost:	\$ 11,500,000
CWCB Loan (with Service Fee):	\$11,615,000
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
22%	4% Low - 25% Mid - 49% High
	Commercial
	0%
P R O J E C T D E T A I L S	
Project Type:	Ditch Rehabilitation
Average Annual Diversion:	15,755 AF



The Tunnel Water Company (Company) operates the Laramie-Poudre Tunnel for the benefit of its two shareholders: Water Supply and Storage Company (WSSC) and Windsor Reservoir and Canal Company (WRCC). The tunnel diverts from the Laramie River, about 60 miles west of Fort Collins, and delivers water through a 2.2-mile tunnel to the Poudre River. 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 shareholders via the Soldier Canyon and Bellvue Water Treatment Plants for use in their service areas.

L O C A T I O N	
County:	Larimer
Water Source:	Laramie River
Drainage Basin:	North Platte/South Platte
Division:	1
District:	48/3

The Company purchased the Laramie Poudre Tunnel and its adjoining Laramie River System in 1938. Since 2001, the Company has repaired various sections of the tunnel. To prevent future collapse and tunnel blockage, this project includes replacement of aging support structures and the addition of new supports, rock bolts and shotcrete to ensure future serviceability and maintenance access. Construction began in September 2019 and will continue through spring of 2021.

The original Project cost was \$9,000,000 and the total estimated Project cost is \$11,500,000. Since construction began, significant voids behind and above the existing concrete and existing steel sets were found. Substantial amounts of grout, above the anticipated quantities, filled voids. The old concrete and preexisting steel support structures are being replaced. In addition to the void spaces, in an original tunnel section, old square set timbers, rebar, trees, sand gravel and rocks were used as backfill. To ensure the tunnel is structurally sound in the short and long term, new steel sets are being used to replace the compromised section. Based on the initial geology report, it is anticipated the majority of the tunnel has more structural integrity and contains competent rock.

Timber and grout above concrete arch.

Crew removes concrete to make room for the steel set.

Grout intermixed with gravels and soils (solid grey in the brown).



## COLORADO

### Colorado Water Conservation Board

Department of Natural Resources  
1313 Sherman Street, Room 718  
Denver, CO 80203

March 22, 2019

Dennis Harmon, General Manager  
The Tunnel Water Company  
PO Box 2017  
Fort Collins, CO 80522

Re: The Tunnel Water Company - West Half Laramie-Poudre Tunnel Rehabilitation -  
Loan Approval

Mr. Harmon:

I am pleased to inform you that on March 20, 2019, the Colorado Water Conservation Board approved your loan request for the West Half Laramie-Poudre Tunnel Rehabilitation as described in the application and approved Loan Feasibility Study titled "Feasibility Study West Half of the Laramie-Poudre Tunnel Rehabilitation Project," dated February 2019. The Board approved a loan not to exceed \$9,090,000 (\$9,000,000 for Project costs and \$90,000 for the 1% service fee). The loan terms shall be 2.85% per annum for 30 years.

I have attached a copy of the updated Board memo dated March 20, 2019, that includes the Board's approval. After the Board approves a loan there are a few steps that remain in the loan process including:

**Contracting:** An executed loan contract must be in place before funds can be disbursed for eligible project expenses. Peg Mason, Loan Contracts Manager, will contact you to initiate the loan contracting process. She can be reached at (303) 866-3441 x3227.

**Design/Construction:** You must adhere to the CWCB Design and Construction Administration Procedures including an invitation to the Prebid, Preconstruction and Bid Opening meetings. Jonathan Hernandez, P.E., will be the Project Manager for this phase of the process and will work with you on the disbursements of your loan funds. He can be reached at (303) 866-3441 x3234.

On behalf of the Board, I would like to thank you for your interest in a loan from the CWCB.

Sincerely,

Kirk Russell, P.E., Chief  
Finance Section

Attachment: Updated Board Memo





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**TO:** Colorado Water Conservation Board Members

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

**DATE:** March 20-21, 2019 Board Meeting (Updated March 20, 2019)

**AGENDA ITEM:** 10b. Water Project Loans  
The Tunnel Water Company - West Half Laramie-Poudre Tunnel Rehabilitation

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#### Introduction

The Tunnel Water Company (Company) is applying for a loan for the West Half of the Laramie-Poudre Tunnel Rehabilitation (Project). The purpose of the Project is to prevent future tunnel collapse and blockage by rehabilitating the existing west half of the tunnel with replacement of the existing support systems. The Project cost estimate is \$9,000,000. The Company is seeking a loan from CWCB for 100% of Project costs. See attached Project Data Sheet for a location map and Project summary.

#### Staff Recommendation (Board approved Staff Recommendation March 20, 2019)

Staff recommends the Board approve a loan not to exceed \$9,090,000 (\$9,000,000 for Project costs and \$90,000 for the 1% service fee) to The Tunnel Water Company for costs related to the West Half of the Laramie-Poudre Tunnel Rehabilitation Project, from the Construction Fund. The loan terms shall be 30 years at the blended interest rate of 2.85% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.



### **Background**

The Company is located in Larimer County and operates the Laramie-Poudre 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). The tunnel diverts from the Laramie River, a tributary of the North Platte River, about 60 miles west of Fort Collins, and delivers water through a 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 Plants.

The tunnel was originally built in 1910. In 2001, significant construction was required when a section of the tunnel collapsed in the east half of the tunnel. That repair was funded through two CWCB loans (C150052 & C150065). In 2016, a CWCB loan (CT2016-2001) was approved for repair of the tunnel's west (inlet) and east (outlet) portal structures. Construction activities at the west portal are complete, and the east portal construction activities will continue this fall.

### **Loan Feasibility Study**

Dennis Harmon, 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 West Half of the Laramie-Poudre Tunnel Rehabilitation Project," dated February 2019. 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.

### **Borrower - The Tunnel Water Company**

The Company is a mutual ditch company that was incorporated in 1938. The Company purchased the tunnel and its adjoining Laramie River System in 1938 after the Greeley-Poudre Irrigation District dissolved. 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 2 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.

**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

The tunnel is one of five transmountain diversion structures included in the Laramie River Compact between Colorado and Wyoming. The Laramie River Compact sets the maximum annual volume to be diverted by all transmountain users to be 19,875 AF per year. On average, 15,755 AF per year runs through this tunnel.

**Project Description**

The objective of the Project is to provide means for the Company to replace the existing support systems in the tunnel and to prevent future collapse and tunnel blockage.

**Alternative 1 - No Action:** This alternative was not selected because it will eventually result in the failure of the tunnel, rendering it 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.

**Alternative 2 - Replacement of the Tunnel:** This alternative involves a new tunnel location and was determined to be not feasible as there are no suitable locations nearby and the cost and delay would be prohibitive, due to environmental approvals and permitting processes required.

**Alternative 3 -Alternative Water Sources:** This alternative considers alternate sources of water but was not selected because the alternative sources of water available are junior in priority and would likely, be unreliable in most water years.

**Selected Alternative 4 - Rehabilitation of Tunnel Support System:** This alternative involves removal and rehabilitation of the existing support systems to prevent future collapse and blockage of the tunnel. Loose debris and material will be removed and materials will be mined to expand the tunnel to a more uniform 7-foot by 7-foot tunnel cross section to accommodate future maintenance and repairs. New support systems will be installed, including steel support structures, spot bolting, pattern bolting and shotcrete.

The total cost associated with the Project is \$9,000,000 as shown in Table 2.

**TABLE 2: ESTIMATED PROJECT COST**

Tasks	Cost
Design Engineering	\$1,100,000
Construction	\$7,700,000
<b>SUBTOTAL</b>	<b>\$8,800,000</b>
Contingency	\$200,000
<b>TOTAL</b>	<b>\$9,000,000</b>

**Permitting:** The tunnel and Project site lie within the Canyon Lakes District of the Arapaho and Roosevelt National Forest. The west portal of the tunnel is located on a 2.5 acre area requiring a USDA-Forest Service special use permit. The Company is the permittee. The construction and all the related activity, staging of materials and equipment, will occur within the Company’s 1891 Act Easement or within the boundaries of a temporary construction special use permit to be issued. Preparation of the application for the temporary permit necessary is underway. Based on discussions with the Forest Service, the Company is confident it can meet the requirements of the Forest Service and will garner the necessary temporary permit well before construction commences. With respect to the easement for the tunnel inlet and the tunnel itself, this Project is a maintenance activity and permitted under the terms of its perpetual tunnel easement and Colorado law.

**Schedule:** Design is scheduled to be completed in April 2019. Construction is anticipated to begin September 2019, or sooner, if the tunnel diversions have reached the adjudicated maximum quota resulting in the end of diversions for the season.

**Financial Analysis**

Table 3 provides a summary of the Project’s financial aspects. The Company qualifies for a blended interest rate of 2.85% for a 30-year term (Ownership: 4% Low-Income Municipal, 25% Middle-Income Municipal, 49% High-Income Municipal, 22% Agricultural).

**TABLE 3: FINANCIAL SUMMARY**

Project Cost	\$9,000,000
CWCB Loan Amount	\$9,000,000
CWCB Loan Amount (Including 1% Service Fee)	\$9,090,000
CWCB Annual Loan Payment	\$454,818
CWCB Annual Loan Obligation (1 <sup>st</sup> Ten Years)	\$500,300
Number of Shares	450
Annual Loan Obligation per Share	\$1,112
Current Assessment per Share	\$1,370
Future Assessment per Share (Estimated)	\$2,620

**Creditworthiness:** The Company has \$2,162,568 in existing debt made up of two CWCB loans. Additionally, the Company is approved for a CWCB loan not to exceed \$1,717,000 of which \$969,081 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 \$1,370/share. The Company anticipates raising assessments to \$2,620/share as a result of this Project.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
CWCB C150052	\$1,570,214	\$997,263	\$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 C1150065	\$1,847,932	\$1,165,305	\$112,799	2032	
Subtotal (Existing Debt)		\$2,162,568	\$211,025		
CWCB CT2016-2001	\$1,717,000 (In Disbursement)	\$1,717,000 (Max Approved)	\$82,582 (Max Approved)	2046	
Total		\$3,879,568	\$293,607		

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Prior Years	Future w/ Project <sup>1</sup>
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	106% (average) \$518K/\$490K	101% (average) \$1.08M/\$1.07M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	113% (average) (\$518K-\$279K) \$211K	101% (average) (\$1.08M-\$279K) \$794K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	31% (weak) \$154K/\$490K	14% (weak) \$154K/\$1.07M
Annual Operating Cost per Acre-Foot (15,755AF) weak: >\$20 - average: \$10 - \$20 - strong: <\$10	\$31.10 (weak) \$490K/15,755AF	\$67.91 (weak) \$1.07M/15,755AF

<sup>1</sup> Future with Project ratios assume CWCB Loan CT2016-2001 is disbursed in full and is in repayment.

**Collateral:** Security for this loan will be a pledge of assessment revenues backed by an assessment covenant and the west and east portal structures for the Laramie-Poudre Tunnel. This is in compliance with CWCB Financial Policy #5 (Collateral).

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

Attachment: Water Project Loan Program - Project Data Sheet