COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Derek Johnson, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

DATE: July 20-21, 2016 Board Meeting

AGENDA ITEM: 13b. Water Project Loans
North Poudre Irrigation Company - Rehabilitation of the Livermore Irrigation Tunnel

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Introduction

The North Poudre Irrigation Company (Company) is applying for a loan for the Rehabilitation of the Livermore Irrigation Tunnel (Project). The purpose of the Project is to restore overall delivery capacity of the Livermore tunnel system, which has been damaged by partial collapse in multiple reaches, resulting in blockages and the accumulation of rock fall and debris. Repairs are to be made to six collapse zones, and, proactively, to an additional ten shear and void areas. The estimated cost of the Project is $1,597,000. The Company is requesting a loan from the CWCB to cover 90% of Project Costs; remaining costs will be covered by Company funds. See attached Project Data Sheet for the location map and Project Summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $1,451,673 ($1,437,300 for Project costs and $14,373 for the 1% Loan Service Fee) to the North Poudre Irrigation Company for the Rehabilitation of the Livermore Irrigation Tunnel Project from the Construction Fund. The loan terms shall be 30 years at the blended rate of 2.25% per annum. Security for the loan shall comply with CWCB Financial Policy #5.

Background

The Company's service area encompasses approximately 300 square miles, including additional service areas covering 14 communities and municipal water providers that own NPIC shares. The Livermore Tunnel provides water via the North Poudre Canal to serve 160 square miles of service area, with 36 square miles of irrigated acreage. The Company operates 21 storage reservoirs, 5 flood control dams, and approximately 200 miles of ditches. Irrigated acreage within the service area supports production of corn, sugar beets, soybeans, hay, and feed crops.

The Livermore Tunnel carries water diverted from the North Poudre Canal headgate, located on the north side of the North Fork Cache la Poudre River, for approximately 4,900 feet before it discharges into an earth-lined open canal and flows on toward the Buckeye Lateral, Park Creek Reservoir, and the Company's downstream delivery infrastructure.

The Livermore Tunnel consists of two tunnels connected by a short section of open channel. The tunnels are approximately 8.5 feet high and 8 feet wide with a concrete invert along the entire tunnel length. The tunnels are considered generally stable with the exception of six collapse zones, meaning rock fall events have occurred and large piles of rock and debris have accumulated in the base of the tunnel, ponding up to three feet of water and restricting the overall flow capacity of the tunnels. Three of the six collapse zones are considered active, where the rock fall events are frequent. Occasional rock fall is occurring in the remaining three collapse zones. In addition, ten shear/void areas are proposed to be proactively repaired to avoid future deterioration.

The geometry of the collapse zones varies; however, the disrupted zones were estimated visually to be as large as 45 feet high and 35 feet wide. Potential roof or partial collapse in the tunnel is an ongoing concern, and would impact system users with a prolonged system outage. A major collapse event could result in severe disruption of water service for 14 communities and over 200 farms.

Loan Feasibility Study
Dave Rau of Paragon Consulting Group, Inc. and John Sikora, P.E. of AECOM Technical Services prepared the Loan Feasibility Study titled "Feasibility of the Livermore Irrigation Tunnel Rehabilitation Project", dated June 6, 2016. The study includes an analysis of alternatives, preliminary engineering design, and cost estimates. The study was prepared in accordance with CWCB guidelines.

Borrower - North Poudre Irrigation Company
The Company is a Mutual Ditch Company established in 1901. The Company's office is located in Wellington. It operates as a nonprofit corporation and is in good standing with the Colorado Secretary of State. The Company has issued 10,000 shares of stock and currently has 570 shareholders. Company revenues derive primarily from assessments charged on shares of stock owned by the stockholders. The Company also receives revenues from recreational leases, and annual payments from the City of Fort Collins for the sale of Halligan Reservoir.

The Company's by-laws empower the Board of Directors to take on debt for the uses, needs, and demands of the Company, and to set assessments accordingly. The Board has the authority to enforce assessments, including suspending water deliveries and sale or forfeiture of shares for failure to pay assessments.

Water Rights

There are 197 water rights and exchanges, 27 of which are owned by the Company, that rely on the North Poudre Canal and the Livermore Tunnel. The Company continually executes a series of complex exchanges and trades within the Cache la Poudre Basin. There are exchanges and trades for water from Joe Wright Reservoir, Halligan Reservoir, Fossil Creek Reservoir, and Worster Reservoir to the Company's diversion structures. These exchanges create a flexible water supply for agricultural producers and municipal water providers. The Company also owns and operates 22 reservoirs, with a combined 220,000 acre-feet of storage, which are used for a variety of trades and exchanges to efficiently deliver water within the Company service area.

Average annual diversions of the entire Company are 44,400 acre-feet.

Project Description

The purpose of the Project is to repair damage to the Livermore tunnel system, resulting from partial collapse of the tunnels in multiple reaches, thus restoring overall delivery capacity, which has been impacted by the accumulation of rock fall and debris. Repairs will be made to six collapse zones, and, proactively, to an additional ten shear/void areas.

The Feasibility study evaluated several alternatives for this project:

Alternative 1 – No Action: This alternative was considered unacceptable. Left alone, the tunnel would be vulnerable to future collapses of unknown extent that could result in service interruptions and emergency repairs with uncontrollable costs.

Selected Alternative 2 – Repair collapse zones and repair shear/void areas: The proposed project generally includes repairing six collapse zones with rock scaling and excavation to remove existing damage and rock fall, installation of a concrete liner plate base, installation of overhead and side liner plates, and filling of the voids remaining between the new liner plates and the existing tunnel wall/roof with foam and concrete backfill. Ten shear/void areas will be repaired using shotcrete, mesh, and rock bolting. The estimated cost of the project is $1,597,000 including construction, contingency, and engineering support.

Alternative 3 – Repair collapse zones only: The Company also analyzed saving cost by repairing only the six collapse zones described in Alternative 2 above. The ten shear/void areas would not be repaired under this alternative. While, ultimately, these shear zones will need rehabilitation, they are stable in the short term. Leaving these repairs out of the Project would save approximately $120,500 in construction, contingency and engineering support costs, resulting in an estimated total project cost of $1,476,400. This option was not selected, since future costs to repair these areas as a separate project would be much higher than the short-term amount saved.

TABLE 1: ESTIMATED PROJECT COSTS

Task	Cost
Design and Permitting	$140,000
Construction	$1,457,000
Total	**$1,597,000**

Permitting: The Company has full access to the project area under existing easements. No permits or additional easements are required to complete the project.

Schedule: Preliminary drawings and cost estimates have been prepared. A final design will be developed in concert with a contractor selected through a bid and qualifications process. Construction is planned for fall 2016 when the diversion can be closed and the tunnel drained, with completion targeted prior to the spring 2017 irrigation season.

Financial Analysis

Table 2 provides a summary of the Project's financial aspects. The term of the loan will be 30 years with a blended interest rate of 2.25%, reflecting the Company's share ownership distributed amongst 26% agriculture, 73% municipal middle income, and 1% commercial interests.

TABLE 2: FINANCIAL SUMMARY

Total Project Cost	$ 1,597,000
Borrowers Contribution (10%)	$ 159,700
CWCB Loan Amount (90%)	$ 1,437,300
CWCB Loan Amount (Including 1% Service Fee)	$ 1,451,673
CWCB Annual Loan Payment	$67,066
CWCB Annual Loan Obligation (including reserve requirement)	$73,773
Annual Loan Obligation per share (10,000 Shares)	$ 7.38
Current Assessment per share	$ 200.00
Future Assessment per share	$ 207.30
Project cost per acre-foot deliveries (44,400 acre-feet)	$ 35.97

***Creditworthiness*:** The Company has $ 3,328,237 in existing long-term debt comprised of eight CWCB loans, in good standing, as summarized in Table 3 below. The Company also has two CWCB loan-funded projects currently in loan disbursement as shown in the following Table 4. In response to ongoing and future planned projects, the company increased assessments from $130 to $200 in 2015, and plans to increase assessments an additional $ 7.30 per share in 2016 to offset the costs of this Project.

TABLE 3: EXISTING DEBT IN REPAYMENT

Lender	Contract No.	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
CWCB	C153833	$500,000	$102,311	$36,889	2019	100% Interest in North Poudre Res #5 & Res #6
CWCB	C150013	$623,778	$309,608	$46,061	2024	100% Interest in Fossil Creek Dam & Reservoir
CWCB	C153385	$1,331,704	$501,616	$77,612	2024	100% Interest in Fossil Creek Dam & Reservoir
CWCB	C153449	$1,152,909	$518,829	$67,192	2026	100% Interest in Fossil Creek Dam & Reservoir
CWCB	C150170	$735,280	$461,508	$50,572	2027	100% Interest in North Poudre Res #1 (Miner's Lake)
CWCB	C153496	$404,502	$219,012	$23,574	2029	100% Interest in Fossil Creek Dam & Reservoir
CWCB	C153572	$340,551	$206,002	$19,847	2031	100% Interest in Fossil Creek Dam & Reservoir
CWCB	C153637	$1,761,096	$1,009,351	$64,378	2035	100% Interest in North Poudre Res #5 & Res #6
Totals			$ 3,328,237	$ 386,125		

TABLE 4: ONGOING CONSTRUCTION PROJECTS

Lender	Contract No.	Contract Amount	Current Balance	Contracted Annual Payment	Collateral
CWCB	CT2015-024	$ 876,680	$ 763,539	$ 44,220	Fossil Creek Res Inlet Diversion Structure, Assessments
CWCB	CT2015-003	$ 2,263,410	$ 1,795,752	$ 105,989	100% Interest in Reservoir #4 Dam & Res, Assessments
Totals			$ 2,559,291	$ 150,209	

The Fossil Creek Reservoir project (CT2015-024) was an emergency loan project in response to September 2013 flood damages. The project was completed in spring 2016 and the Company is awaiting a FEMA decision on possible reimbursement.

The Reservoir #4 project (CT2015-003) construction was completed in July 2016. CWCB is expecting a final disbursement soon and will then substantially complete the loan.

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% average: 100% - 120% strong: >120%	118% (average) $3.46M / $2.93M	118% (average) $3.53M / $3.00M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% average: 100% - 120% strong: >120%	199% (strong) ($3.46M-$2.39M) $536.3K	187% (strong) ($3.53M-$2.39M) $610.1K
Cash Reserves to Current Expenses weak: <50% average: 50% - 100% strong: >100%	11% (weak) $332.5K / $2.93M	8% (weak) $245.8K / $3.00M
Annual Operating Cost per Acre-Foot Diversions (44,400 AF) weak: >$20 average: $10 - $20 strong: <$10	$65.91 (weak) $2.93M / 44.4K	$67.57 (weak) $3M / 44.4K

Collateral: Security for this loan will be a pledge of the Company's assessment revenue backed by an assessment covenant and an undivided 100% interest in Reservoir No. 4 Dam and Reservoir. This complies with CWCB Financial Policy #5 (Collateral).

cc: Scott Hummer, General Manager, North Poudre Irrigation Company
Susan Schneider/Jennifer Mele, Colorado Attorney General's Office

Attachment: Project Data Sheet

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Department of Natural Resources

Rehabilitation of the Livermore Irrigation Tunnel

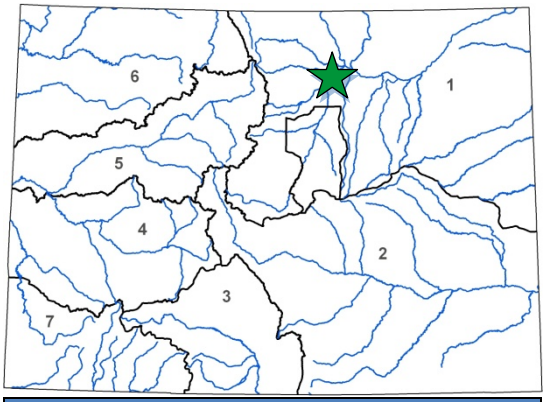
North Poudre Irrigation Company

July 2016 Board Meeting

LOAN DETAILS	
Project Cost:	$ 1,597,000
CWCB Loan (with Service Fee):	$ 1,451,673
Loan Term and Interest Rate:	30 years @ 2.25%
Funding Source:	Construction Fund

BORROWER TYPE		
Agriculture	*Municipal*	*Commercial*
26%	0% Low - 73% Mid - 0% High	1%

PROJECT DETAILS	
Project Type:	Ditch Rehabilitation
Average Annual Delivery:	44,400 AF



LOCATION			
County:			Larimer
Water Source:			Cache la Poudre River
Drainage Basin:			South Platte River
Division:	1	*District:*	3

The North Poudre Irrigation Company service area encompasses approximately 300 square miles, including 160 square miles of service area under the North Poudre Canal (36 square miles of irrigated acreage),as well as additional service areas covering 14 communities and municipal water providers that own NPIC shares.

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Construction is scheduled for the fall/winter of 2016/2017.