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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: March 22-23, 2017 Board Meeting

AGENDA ITEM: 28a. Water Project Loans
North Poudre Irrigation Company - Mountain Supply Reservoir No. 10 Repairs

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Introduction

The North Poudre Irrigation Company (Company) is applying for a loan for the Mountain Supply Reservoir No. 10 Repairs (Project). The purpose of the Project is to restore full function to the reservoir by performing repairs to the inlet piping, grading within the reservoir, and repairing the outlet works intake structure and conduit. The estimated cost of the Project is $495,000. The Company is requesting a loan from the CWCB to cover 100% of Project Costs. See attached Project Data Sheet for the location map and Project Summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $499,950 ($495,000 for Project costs and $4,950 for the 1% Loan Service Fee) to the North Poudre Irrigation Company for the Mountain Supply Reservoir No. 10 Repairs Project from the Severance Tax Perpetual Base Fund. Loan terms shall be 30 years at the blended rate of 2.50% per annum. Security for the loan shall comply with CWCB Financial Policy #5.

Background

The Company's service area encompasses approximately 300 square miles, and includes service to 14 communities and municipal water providers that own Company shares. The Company operates 22 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.

Mountain Supply Reservoir No. 10, owned and operated by the Company, was constructed in 1905, and a major rehabilitation of the dam was completed in 1973. The Company has a storage decree in this reservoir of 344 acre-feet. The reservoir is an off-stream reservoir with a drainage basin of approximately 0.14 square miles. The reservoir is fed by the Upper 10 Ditch, which is in turn fed by numerous other ditches in the Company's system, the ultimate source of the water being the North Fork of the Cache la Poudre River and the Cache la Poudre River itself. In August of 2015, the outlet works experienced a failure in the corrugated metal pipe (CMP) outlet tube downstream of the intake headgate. The reservoir was drained. A subsequent storage restriction by the State Engineer's Office (SEO) was put in place while the Company made temporary repairs. Due to the temporary nature of the repairs, the Company was only permitted to store 80 acre-feet, pending comprehensive repairs to the outlet works. Further engineering investigations found need for additional reservoir infrastructure repairs, including repairs to the headgate and inlet structure from the ditch to the reservoir, grading in the bottom of the reservoir from inlet to outlet, and changes to the outlet works.

Loan Feasibility Study

Tara Schutter, P.E. of Tessara Water, LLC prepared the Loan Feasibility Study titled "Feasibility of North Poudre Irrigation Company Mountain Supply Reservoir No. 10 Repairs", dated January of 2017. 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. It is a nonprofit corporation and is in good standing with the Colorado Secretary of State. The Company's office is located in Wellington. 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. The Board proposes assessments that are ratified by the stockholders.

Water Rights

The Company's 22 reservoirs have a combined 220,000 acre-feet of storage, which are used for a variety of trades and exchanges to deliver water within the Company's service area. Mountain Supply Reservoir No. 10 (also known as Railroad Reservoir No. 3) has the decreed water rights shown in Table 1 below.

TABLE 1: IMPACTED WATER RIGHTS

Name	Amount	Appropriation Date	Adjudication Date	Water Court Case No.
MOUNTAIN SUPPLY RES 10	344 acre-feet (storage)	5/15/1905	4/22/1922	CA2031

Average annual diversions of the entire Company are 88,900 acre-feet.

Project Description

The purpose of the Project is to repair the Mountain Supply Reservoir No. 10 inlet and outlet works, removing the SEO storage restriction and repairing the reservoir in order to store its full storage rights. Primary project elements include repair of the intake structure at the Upper 10 ditch, repair or replacement of the pipeline leading from the ditch to the reservoir, grading across the reservoir, construction of a new spillway control wall, and repair or replacement of the dam outlet works.

The Feasibility study evaluated alternatives for this project:

Alternate 1 – No Action: This alternate was considered unacceptable, as the Company could not store its decreed rights, nor provide service to 48 shareholders who collectively own 81 shares of stock that receive water from Mountain Supply Reservoir No. 10 through the Lower 10 ditch. Approximately 600 acre-feet of water is delivered annually to these shareholders.

Selected Alternate 2 – Repair inlet and outlet infrastructure: This alternate meets the goals of the project with the following methods:

- Inlet works: Repair 500 feet of 30-inch inlet works conduit by installing cured-in-place pipe (CIPP) lining from Upper 10 ditch to the reservoir, replacement of the inlet structure, and construction of a new dissipation structure at the end of the inlet pipeline.
- Reservoir Site: Within reservoir, remove silt and straighten the bottom channel from the dissipation structure to the outlet works. Construct a new spillway control wall to raise the reservoir storage level six inches, allowing the Company to fully achieve storage of the decreed 344 acre-feet of storage rights.
- Outlet works: Repair outlet works, including construction of a new inlet gate tower and walkway, and conduit repair by removing the temporary patch and lining the length of the outlet conduit using a CIPP liner.

The Company considered alternatives to project elements in the cost analysis:

- An alternative to CIPP lining of the inlet works conduit was considered in the form of removal and replacement of the existing pipe with concrete-lined steel pipe using open-cut methods. Although this option was only slightly more expensive than CIPP lining, this option was not utilized due to probable complications from easement acquisitions and a longer construction period.
- An alternative to the selected gate tower and walkway would be a gate tower within the dam embankment and a secondary gate at an inlet structure, with a grade beam supporting the gate stem and vent extending from the structure to the dam crest. This would only be a viable alternative if the dam were to be breached. The gate tower with walkway was selected because the design was successfully used on the Company's nearby and very similar Reservoir No. 9, thus reducing engineering and design costs.
- An alternative to the CIPP lining of the existing intake structure's existing CMP pipe would be an open-cut breach of the dam to replace the outlet conduit with a new pipe. This would involve the removal and replacement of approximately 4,000 cubic yards of dam embankment material,

placement of a mud mat, installation of 130 lineal feet of concrete-encased steel pipe, construction of a new outlet structure, and installation of a cutoff trench and sand collar, all at an increased cost of approximately $80,000. A camera inspection of the outlet conduit revealed no structural deficiencies in the conduit downstream of the repair area and there have been no operational issues with outlet structure; thus, the CIPP alternative was selected.

TABLE 2: ESTIMATED PROJECT COSTS

Task	Cost
Design	$89,110
Construction	$356,400
Contingency (10%)	$49,490
Total	$495,000

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: A final design will be developed, followed by a standard bid process. Construction is planned for fall of 2017, with completion targeted prior to the spring 2018 irrigation season.

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. The term of the loan will be 30 years with a blended interest rate of 2.50%, reflecting the Company's share ownership distributed amongst 26% agriculture, 73% municipal middle income, and 1% commercial interests.

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	$ 495,000
CWCB Loan Amount (100%)	$ 495,000
CWCB Loan Amount (Including 1% Service Fee)	$ 499,950
CWCB Annual Loan Payment	$ 23,886
CWCB Annual Loan Obligation (including reserve requirement)	$ 26,275
Annual Loan Obligation per share (10,000 Shares)	$ 2.63
Current Assessment per share	$ 210
Future Assessment per share	$ 210
Project cost per acre-foot deliveries (600 acre-feet)	$ 833
Project cost per AF recovered (264 AF)	$ 1,894

***Creditworthiness*:** The Company has $7.9 million in existing debt comprised of eight CWCB loans (Table 4 below), in repayment and in good standing, and three CWCB loans in disbursement (Table 5 below).

In response to ongoing and future planned projects, the Company increased assessments from $130 to $200 in 2015, and again to $210 in 2017 in anticipation of both this Project and the ongoing Rehabilitation of the Livermore Irrigation Tunnel (CT2017-1402) project.

TABLE 4: 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 5: ONGOING CONSTRUCTION PROJECTS

Lender	Contract No.	Contract Amount	Current Balance (As of 3/1/17)	Contracted Annual Payment	Collateral
CWCB	CT2015-024	$ 876,680	$ 418,586	$ 44,220	Fossil Creek Res Inlet Diversion Structure, Assessments
CWCB	CT2015-003	$ 2,263,410	$ 2,105,351	$ 105,989	100% Interest in Reservoir #4 Dam & Res, Assessments
CWCB	CT2017-1402	$1,437,300	$ 616,282	$ 67,066	100% Interest in Reservoir #4 Dam & Res, Assessments
Totals		$ 4,577,390	$ 3,140,219	$ 217,275	

Fossil Creek Reservoir (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 loan's zero-percent interest period ends on November 1, 2018, and the first annual payment is due November 1, 2019.

Reservoir #4 (CT2015-003) construction was completed in July 2016 and the dam received SEO approval in October 2016. Final disbursement has been made and the loan is awaiting the loan substantial completion date.

The Rehabilitation of the Livermore Irrigation Tunnel project (CT2017-1402) is ongoing, with 43% of funds distributed as of January 2017.

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% average: 100% - 120% strong: >120%	115% (average) $3.46M / $2.99M	117% (average) $3.53M / $3.02M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% average: 100% - 120% strong: >120%	177% (strong) ($3.46M-$2.39M) $603.4K	181% (strong) ($3.53M-$2.39M) $629.7K
Cash Reserves to Current Expenses weak: <50% average: 50% - 100% strong: >100%	11% (weak) $332.5K / $2.99M	11% (weak) $332.5K / $3.02M
Annual Operating Cost per Acre-Foot Diversions (88,900 AF) weak: >$20 average: $10 - $20 strong: <$10	$33.63 (weak) $2.99M / 88.9K	$33.97 (weak) $3.02M / 88.9K

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. 10 Dam and Reservoir. This complies with CWCB Financial Policy #5 (Collateral).

cc: Tad Moen, Interim General Manager, North Poudre Irrigation Company
Jennifer Mele, Colorado Attorney General's Office

Attachment: Project Data Sheet

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Department of Natural Resources

Mountain Supply Reservoir No. 10 Repairs

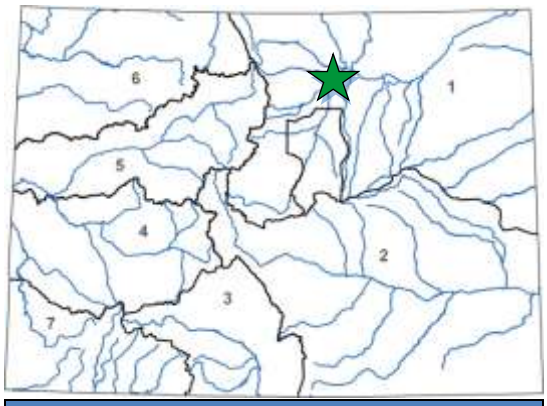
North Poudre Irrigation Company

March 2017 Board Meeting

LOAN DETAILS	
Project Cost:	$495,000
CWCB Loan (with Service Fee):	$499,950
Loan Term and Interest Rate:	30 years @ 2.50%
Funding Source:	Severance Tax Perpetual Base Fund

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

PROJECT DETAILS	
Project Type:	Reservoir Rehabilitation
Average Annual Delivery:	88,900 AF
Total Reservoir Storage:	344 AF
Water Storage Preserved:	264 AF



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

The North Poudre Irrigation Company's service area encompasses approximately 300 square miles, including additional service areas covering 14 communities and municipal water providers owning NPIC shares. The Company operates 22 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.

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The purpose of the Project is to repair the Mountain Supply Reservoir No. 10 inlet and outlet works, removing the SEO storage restriction and restoring the Company's ability to hold their full storage rights.