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: January 28-29, 2019 Board Meeting

AGENDA ITEM: 13b. Water Project Loans
Schneider Ditch Company – Diversion Structure Replacement

Introduction

The Schneider Ditch Company (Company) is applying for a loan for the Diversion Structure Replacement (Project). The Project is located in the South Platte Basin approximately 10 miles southwest of Sterling. The purpose of the Project is to replace the diversion structure and ditch headgate so it may divert and deliver water to its shareholders. The existing diversion structure is deteriorating and showing signs of fatigue cracking, seepage, sediment accumulation and scour. The Project cost is estimated at $1,233,000. The Company is requesting a loan for 100% of Project costs. See attached Project Data Sheet for a location map and Project summary.

Staff Recommendation for CWCB Loan

Staff recommends the Board approve a loan not to exceed $1,245,330 ($1,233,000 for the Project costs and $12,330 for the 1% service fee) to the Schneider Ditch Company for costs related to the Diversion Structure Replacement Project, from the Severance Tax Perpetual Base Fund. The loan terms shall be 30 years at an agricultural interest rate of 1.85% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Background

The Schneider Ditch provides irrigation water to approximately 2,600 acres of irrigated farm land near Atwood, CO. The Company's service area extends northeasterly. The Company diverts water from a side channel in the South Platte River for both irrigation and augmentation purposes. Water deliveries are made through the Schneider Ditch to recharge sites and irrigation lands lying south of the South Platte River.

The diversion structure was constructed over 50 years ago and consists of a concrete rollover wall with a flashboard system that diverts water into the ditch. The current structure has a problem with seepage, undermining, and sediment control. A major operational drawback of the current structure is the inability of the Company to remove flashboards on a routine basis, which results in a significant build-up of sand in front of the rollover wall and the ditch intake headgates.

Loan Feasibility Study

Matt Harris, P.E., with Harris Engineering Consultants, Inc. prepared the Loan Feasibility Study titled, "Feasibility Report - Schneider Ditch Company Diversion Structure Repair Project," dated December 2018. The feasibility study was prepared in accordance with CWCB guidelines and includes an analysis of alternatives, preliminary engineering, and estimated engineering costs. Audited financial statements were provided by Katy Barkley, Johnson & Associates, CPAs P.C.

Borrower – Schneider Ditch Company

The Company is a non-profit mutual ditch company and is in good standing with the Colorado Secretary of State. It was incorporated in May 1877. The Company has 125 shares and 17 shareholders governed by a three-member board of directors. The Company's revenues are from annual assessments on ditch shares.

The board of directors has the authority to collect on assessments, and has the power to enforce collection of assessments by ceasing water deliveries to delinquent shareholders, issuing liens on the shares. It also has the power to make and enforce all rules and regulations concerning the delivery of water. Shareholder approval is needed in order to set assessments. The total average annual diversion is approximately 9,400 acre-feet.

Water Rights

The Company's decreed senior water rights associated with the Project are shown in Table 1.

TABLE 1: WATER RIGHTS

Name	Amount	Appropriation Date	Adjudication Date	Water Court Case No.
Schneider Ditch	11 cfs	04/10/1873	05/29/1897	CA0547
Schneider Ditch	20.1 cfs	07/15/1875	11/15/1894	CA0304
Schneider Ditch	17.688 cfs	10/20/1880	11/15/1894	CA0304

Project Description

The purpose of the Project is to replace the diversion structure and headgate so it may continue to divert and deliver water and to improve operation of the diversion structure.

Alternative 1 – No Action: Failure to replace the existing diversion structure would continue to result in the structure's deterioration. The Company would continue to invest in a significant amount of activities required to maintain the structure, sediment accumulation and channel for water delivery. This alternative was not selected.

Alternative 2 – Retrofit existing structure with radial gate to increase sediment flushing capacity: This alternative proposes a replacement of a section of the rollover wall with a radial arm, gate and the installation of a new retaining wall atop the sheet piling along the southern portion of the structure. No improvements to the ditch headgate are included in this alternative. This alternative does not address the deteriorating condition of the diversion structure or ditch headgate and was not selected. The cost of this alternative is approximately $214,000.

Alternative 3 – Construct a new diversion structure downstream of the channel confluence: This alternative includes the complete removal and replacement of the existing structure. The replacement would be approximately 500 feet downstream of the braided channels and include a 100-foot section of inflatable bladder gate, 7.5 feet tall. A 10-foot section of bladder gate, 4 feet tall would serve as the ditch headgate. This alternative would have the same benefits as the selected alternative but would eliminate the need for the sand dam. This alternative was not selected due to the high project cost. The cost of this alternative is approximately $1,816,650.

Selected Alternative 4 – Construct a new diversion structure on the south channel near the location of the existing structure: This alternative includes the complete removal and replacement of the existing structure. The replacement would include a 60-foot section of a 7-foot tall inflatable bladder gate to act as a spillway in the river channel. A 10-foot section of bladder gate, 4-foot tall, would serve as the ditch headgate. A radial gate, 10-foot wide, would be placed in front of the ditch headgate to enhance sediment control during the irrigation season. The new structure's floor would be 2.5 feet lower than the existing structure to solve problems associated with the current operation of the structure. A sand dam will continue to be required during low flows to ensure water is delivered to the headworks. The new diversion structure will improve channel continuity and sediment transport along the reach, compared to existing conditions. The new Obermeyer adjustable crest gate will facilitate sediment passage and provide maximum flow conveyance during floods, reducing upstream backwater effects and improving overall channel stability. During intermediate flows, the gate has the ability to operate in a partially deflated mode to allow fish passage over the dam while maintaining the benefits of a partial pool upstream of the structure for aquatic habitat and waterfowl. Improving the sediment transport capability of the channel will help mitigate environmental impacts associated with periodic dredging activities that are currently required to remove sediment retained by the existing structure. The total cost associated with the Project is $1,233,000 as shown in Table 2.

TABLE 2: ESTIMATED PROJECT COST

Tasks	Cost
Planning, Design and Engineering	$54,000
Construction	$1,067,000
Contingency (10%)	$112,000
TOTAL	**$1,233,000**

Permitting: The Company does not anticipate the need to obtain any permits for this Project and they expect exemption from 404 permitting by Statutory Exemption, 33 CFR Section 323.4(a)3, addressing construction and maintenance projects not requiring permits.

Schedule: The Company anticipates construction in the fall of 2019 and Project completion by spring of 2020.

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. The Company qualifies for an agricultural interest rate of 1.85% for a 30-year term (Ownership: 100% Agricultural).

TABLE 3: FINANCIAL SUMMARY

Project Cost	$1,233,000
CWCB Loan Amount	$1,233,000
CWCB Loan Amount (Including 1% Service Fee)	$1,245,330
CWCB Annual Loan Payment	$54,464
CWCB Annual Loan Obligation (1st Ten Years)	$59,910
Number of Shares	125
Annual Loan Obligation per Share	$480
Current Assessment per Share	$400
Estimated Total Future Assessment per Share ($420/share increase)	$820
Annual Obligation per AF delivered (9,400AF)	$6.37

Creditworthiness: The Company has no existing debt. Over the last 20 years, shareholder assessments have increased gradually from $100 per share in 1998 to $400 per share in 2017, where they now remain. The most recent assessment increases occurred in 2015 and 2017, where assessments were raised from $320 to $350 per share and from $350 to $400 per share, respectively.

TABLE 4: FINANCIAL RATIOS

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	118% (average) $50.0K/$42.5K	100% (average) $102.5K/$102.4K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	N/A	100% (average) ($102.5K-$42.5K) $59.9K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	110% (strong) $46.8K/$42.5K	46% (weak) $46.8K/$102.4K
Annual Operating Cost per Acre-Foot (9,400AF) weak: >$20 - average: $10 - $20 - strong: <$10	$4.52 (strong) $42.5K/9,400AF	$10.89 (average) $102.4K/9,400AF

Collateral: Security for this loan will be a pledge of assessment revenues backed by an assessment covenant and the Project itself including the diversion dam and intake structure. This security is in compliance with the CWCB Financial Policy #5 (Collateral).

cc: Mr. Bob Lingreen, President, Schneider Ditch Company
Jennifer Mele, Colorado Attorney General's Office

Attachment: Water Project Loan Program – Project Data Sheet

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Diversion Structure Replacement

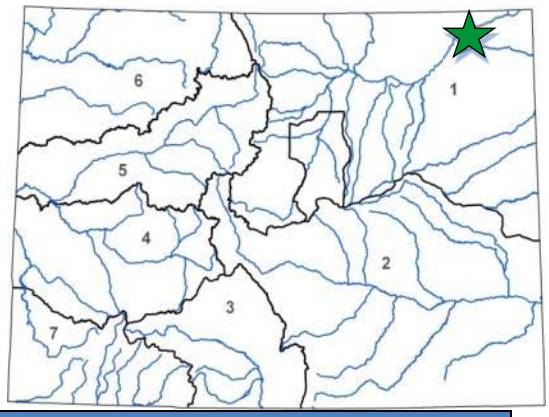
Schneider Ditch Company

January 2019 Board Meeting

LOAN DETAILS	
Project Cost:	$1,233,000
CWCB Loan (with 1% Service Fee):	$1,245,330
Loan Term and Interest Rate:	30 years @ 1.85%
Funding Source:	Severance Tax PBF

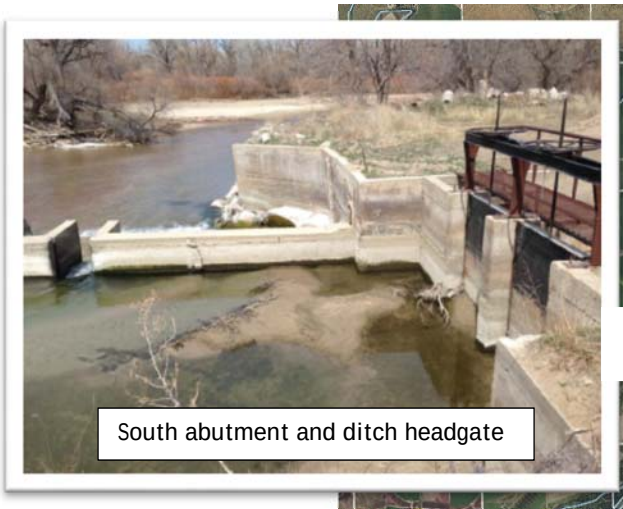
BORROWER TYPE		
Agriculture	*Municipal*	*Commercial*
100%	0%	0%

PROJECT DETAILS	
Project Type:	Diversion Structure
Average Annual Diversions:	9,400 AF



LOCATION			
County:			Logan
Water Source:			South Platte River
Drainage Basin:			South Platte
Division:	1	*District:*	64

The Schneider Ditch Company diverts water from a side channel in the South Platte River for both irrigation and augmentation purposes. Water deliveries are made through the Schneider Ditch to recharge sites and irrigation lands lying south of the South Platte River and near the Town of Atwood. The diversion structure was constructed over 50 years ago and consists of a concrete rollover wall with a flashboard system that diverts water into the ditch. The current structure has a problem with seepage, undermining, and sediment control. A major operational drawback of the current structure is the inability of the Company to remove flashboards on a routine basis, which results in a significant build-up of sand in front of the rollover wall and the ditch intake headgates. The proposed project will include the removal of the existing structure, installation of a new concrete structure with a 60-foot long inflatable bladder gate to act as a service spillway in the river channel, a 10-foot wide radial gate for headgate sand maintenance, a 10-foot wide intake headgate, and construction of a control building with new gate controls. Construction is anticipated to begin in the fall of 2019 with completion before the 2020 irrigation season.


South abutment and ditch headgate