

STATE OF COLORADO

Colorado Water Conservation Board

Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Kirk Russell, PE
Water Supply Planning & Finance Section

DATE: September 9, 2009

SUBJECT: **Agenda Item 7b September 15-16, 2009 Board Meeting**
Water Supply Planning and Finance Section – New Project Loans
Lake Canal Reservoir Company – South Gray Reservoir Rehabilitation & Gray No. 3 Breach

Bill Ritter, Jr.
Governor

Harris D. Sherman
DNR Executive Director

Jennifer L. Gimbel
CWCB Director

Dan McAuliffe
CWCB Deputy Director

Introduction

The Lake Canal Reservoir Company (Reservoir Company) is applying for a loan for the South Gray Reservoir Rehabilitation & Gray No. 3 Breach Project (Project). The Project includes: 1) installation of toe drains on the South Gray dam to collect excessive seepage as required by the SEO Dam Safety Branch and avoid reservoir restrictions; and 2) breaching of Gray Reservoir No. 3 dam. The total cost estimate for the Project is \$433,000. The Project will address SEO Dam Safety hazard concerns and maintain full use of the Company's storage rights. The loan request is for approximately 90% of the Project costs. See attached Project Data Sheet for a location map and summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed \$393,900 (\$390,000 for project costs and \$3,900 for the 1% Loan Service Fee) to the Lake Canal Reservoir Company for the South Gray Reservoir Rehabilitation & Gray No. 3 Breach from the Construction Fund. The loan terms shall be an interest rate of 3.15% per annum for 30 years. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Background

South Gray Reservoir dam has excessive seepage along a major portion of the dam. In an effort to preserve the storage right on this reservoir, the Reservoir Company is adding a toe drain or other seepage measures to ensure the safety of the dam.

Gray Reservoir No. 3 is restricted to zero storage by the SEO due to the poor condition of the dam and outlet works. Due to the poor condition of Gray No. 3, the Company considered rehabilitation of the dam however breaching the dam and relocating the storage rights became the best option. The Reservoir Company received a court decree in 2004 (2002CW244) allowing the storage right to be moved to other locations.

Loan Feasibility Study

The Loan Feasibility Study, titled “Feasibility Study for the Rehabilitation of South Gray Reservoir and Gray Reservoir No. 3”, dated August 3, 2009, was prepared by Duane Smith, PE, of Smith Geotechnical Engineering. The study includes an engineer’s cost estimate and financial statements. The study was prepared in accordance with the CWCB guidelines.

The Lake Canal Reservoir Company

The Lake Canal Reservoir Company is a Nonprofit Colorado Mutual Ditch Company incorporated in January 1902 and is in ‘good standing’ with the Colorado Secretary of State’s Office. The Reservoir Company’s facilities consist of the storage reservoirs known as North Gray Reservoir, South Gray Reservoir, and Gray Reservoir No. 3 located in Larimer County. The service area approximately 5,200 acres of irrigated farm land in Larimer and Weld Counties in Colorado.

The Reservoir Company has issued 160 shares of water stock that is presently owned by 46 stockholders. Shares of stock are owned by private and public shareholders; however all of the water is currently used for agricultural purposes. Water stored in the Gray Reservoirs is released back into Box Elder Creek and then diverted into the Lake Canal Ditch and delivered to the irrigated farm and pasture land. The Lake Canal Ditch is owned by the Lake Canal Company. Normal maintenance and repair of the ditches and reservoirs is handled by the New Cache La Poudre Irrigating Company through an operating agreement.

Water Rights

The Reservoir Company has historically supplied irrigation water for approximately 5,200 acres of land under a storage decree from Box Elder Creek for 1,178 AF. The priority numbers, appropriation dates, and storage right are summarized below.

Reservoir	Priority	Appropriation Storage Date	Gage Height (Ft)	Acre-Feet
North Gray	2	April 1, 1882	7.5	136
	50	November 1, 1902	11.5	139
	77	November 15, 1904	13.65	58
South Gray	3	April 1, 1882	6.0	275
	51	November 1, 1902	14.0	237
	78	November 10, 1904	18.0	222
Gray No. 3	76	November 14, 1904	13.0	<u>111</u>
			TOTAL	1,178

In 2002, the Reservoir Company applied to the water court for alternate storage locations for the

water decreed for storage in Gray Reservoir No. 3. The water court entered a ruling decreeing the alternate locations on November 10, 2004.

Project Description

The Borrower considered a couple alternatives for the two reservoirs.

South Gray Reservoir options were: 1.) Do Nothing; 2.) Install a toe drain system to control seepage as needed to avoid a dam safety restriction.

Gray No. 3 options were: 1.) Do Nothing; 2.) Complete rehabilitation; 3.) Breach the dam

Gray No. 3 breach required review of a couple different options in order to deal with the impact of the access road which runs along the top of the dam. The options were: a.) Re-route the access road; b.) Maintain the existing alignment of the access road through the breached dam area

SELECTED PROJECT - Install toe drains on South Gray dam and breach Gray No. 3 and route access road around the breach.

South Gray – To address the seepage issue in the dam the following is planned:

To control the seepage a toe drain system will be installed consisting of a perforated PVC pipe surrounded by a filter layer of C33 sand. The drain will be placed about 6 feet below grade. Toe drains are proposed from the spillway to approximately 450 feet to the east along the dam.

Gray No. 3 - The breach of Gray No. 3 will require the following activities:

1. Provide a breach of adequate size to pass the 100-year flood..
2. Dam breach proposed is at a 3:1 slope with a breach width of 65 feet.
3. The dam access road will be re-routed to the downstream toe of Gray No. 3 and South Gray due to the impact to the current access road by the breach excavation.
4. Excess excavated material from the breach will have to be spoiled in the reservoir area and the disturbed areas seeded to prevent erosion.
5. The existing outlet works will have to be demolished and buried in the reservoir.
6. The area downstream of the breach will have to be graded to provide a spillway through the breach to Box Elder Creek.
7. Riprap and bedding will be placed at the confluence with Box Elder Creek to limit erosion.

Engineering and construction costs are estimated at:

Construction Cost	\$ 300,000
Contingency @ 20%	\$ 60,000
Engineering Fees	<u>\$ 73,000</u>
TOTALS	\$ 433,000

Final design is expected to be complete in February 2010 and construction is projected to occur in the fall/winter of 2010.

Financial Analysis

Table 1 shows a summary of the financial aspects of the loan request. The blended interest rate for the Company is based on a breakdown of ownership of 86% agricultural, 8% municipal, and 6% commercial interests. The rate was determined to be 3.15% for 30 years (Per Financial Policy #7).

Table 1. Project Financial Summary

PROJECT/LOAN		
Project Cost		\$433,000
CWCB Loan		\$390,000
CWCB Loan (Including 1% Service Fee)		\$393,900
CWCB Annual Loan Payment		\$20,500
CWCB Loan Obligation (including 10% debt reserve funding)		\$22,550
Project Cost per Acre-Foot (165AF saved)		\$2,624/AF
Assessments		Before After*
Assessments per share (160 shares)		\$150/share \$330/share

* Assessments are projected to increase at a special shareholder meeting in October 2009

Creditworthiness: The Reservoir Company currently has a CWCB loan with a balance of \$53,884 (\$6,920 annual payment) with a maturity date of July 2018. The Reservoir Company has a history of paying on time and in the full amount.

Table 2. Financial Ratios for the Reservoir Company

Financial Ratio	Past Years	Future
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	101% (Average) \$84K/83K	100% (Average) \$105/105K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	114% (Average) \$84-76K/7K	100% (Average) \$105-76K/29K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	48% (Weak) \$40K/83K	15% (Weak) \$16K/105K
Annual Operating Cost per Acre-Foot (1,120 AF) weak: >\$20 - average: \$10 - \$20 - strong: <\$10	\$74/AF (Weak) \$83K/1,120AF	\$93/AF (Weak) \$105K/1,120AF

Collateral - Security for the loan shall be the Reservoir Company's pledge of assessment revenues backed by an assessment covenant. This is in compliance with CWCB Financial Policy #5 (Collateral).

Staff Recommendation

Staff recommends the Board approve a loan not to exceed \$393,900 (\$390,000 for project costs and \$3,900 for the 1% Loan Service Fee) to the Lake Canal Reservoir Company for the South Gray Reservoir Rehabilitation & Gray No. 3 Breach from the Construction Fund. The loan terms shall be an interest rate of 3.15% per annum for 30 years. Security for the loan shall be in compliance with CWCB Financial Policy #5.

cc: Don Magnuson, Superintendent
Duane Smith, PE, Smith Geotechnical Engineering
Susan Schneider, AGO

Attachment: Water Project Loan Program – Project Data Sheet

CWCB Construction Loan Program Project Data Sheet

Borrower: Lake Canal Reservoir Company

County: Larimer and Weld

Project Name: South Gray Reservoir Rehab.
& Gray No. 3 Breach

Project Type: Reservoir Rehabilitation

Drainage Basin: South Platte River

Water Source: Box Elder Creek

Total Project Cost: \$433,000

Funding Sources: Construction Fund

Type of Borrower: Blended Agricultural
Municipal & Commercial

Details: 1,120 AF Stored
165 AF Recovered

Loan Amount: \$393,900 (Including 1% fee)

Interest Rate: 3.15% **Term:** 30 years

The Lake Canal Reservoir Company is requesting a CWCB loan for reservoir improvements that include: 1) the installation of toe drains on the South Gray dam 2) the breaching of Gray No. 3 dam including erosion protection and access road realignment. The Project is necessary to address a SEO Dam Safety hazard and avoid the potential for a reservoir storage restriction. The South Gray Reservoir dam has excessive seepage along a major portion of the dam. The Reservoir Company desires to preserve the storage right on this reservoir and is interested in adding a toe drain or other seepage measures to ensure the safety of the dam. Gray Reservoir No. 3 is restricted to zero storage by the SEO due to the poor condition of the dam and outlet works. The Reservoir Company has received a court decree allowing the storage to be moved to other locations. Project design is expected to be done in early 2010 and construction is projected for the fall/winter 2010.

