COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Joshua Godwin, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

DATE: January 23-24, 2023 Board Meeting **(Updated January 25, 2023)**

AGENDA ITEM: 14e. Water Project Loans
Twin Lakes Reservoir and Canal Company
Grizzly Reservoir Rehabilitation

Staff Recommendation (Board approved Staff Recommendation January 24, 2023)
Staff recommends the Board approve a loan not to exceed $9,931,330 ($9,833,000 for project costs and $98,330 for the 1% service fee) to the Twin Lakes Reservoir and Canal Company for costs related to the Grizzly Reservoir Rehabilitation, from the Severance Tax Perpetual Base Fund. The loan term will be 30 years at an interest rate of 2.90% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Introduction
The Twin Lakes Reservoir and Canal Company (Company) is applying for a blended interest rate loan for the Grizzly Reservoir Rehabilitation (Project). The Company operates and maintains the Grizzly Reservoir (Reservoir) southeast of Aspen, Colorado in Pitkin County. The Company was notified by the Colorado Division of Water Resources (DWR), Dam Safety Branch regarding safety concerns with the Reservoir's dam. Additionally, the Company has identified operational issues associated with the Twin Lakes Tunnel control gates. This Project will address the safety concerns and provide necessary repairs. The total Project cost is estimated to be $9,833,000. See attached Project Data Sheet for a location map and Project summary.

Borrower – Twin Lakes Reservoir and Canal Company

The Twin Lakes Reservoir and Canal Company is a mutual ditch and reservoir company established in 1897. The Company operates and maintains Grizzly Reservoir (590 AF), Twin Lakes Reservoir, and Tunnel Number 1 - as part of the Independence Pass Transmountain Diversion System (IPTDS) - for the benefit of approximately 240 agricultural, municipal, and commercial shareholders. Grizzly Reservoir is part of the IPTDS and helps divert water from the Roaring Fork River in Pitkin County. The Company's largest shareholder is Colorado Springs Utilities with a 55% stake. The Company is directed by a five member board (Board) elected annually by a majority vote of shareholders. The Board is authorized to make necessary contracts including authorizing indebtedness. The Board is also authorized to set assessments and are voted on by the shareholders at the annual meeting or special meeting. In the event that a shareholder fails to pay their annual assessment, their stock shall be sold to the highest bidder after having been duly advertised. The Company is in good standing with the Colorado Secretary of State's Office.

Background

During routine inspection, DWR Dam Safety noted of several concerns related to the infrastructure of Grizzly Reservoir. Dam Safety's list includes uncontrolled seepage around the outlet works on the downstream slope of the dam, deterioration of asphalt coating on the steel facing as well as thinning of the steel plate, spalling of the outlet structures concrete surface due to cavitation, uncontrolled seepage along the exterior surface of the outlet tunnel, and locations of wearing and separation in the concrete conduit. Additionally, a 2015 draining of the reservoir showed that the trashrack on the reservoir outlet structure was no longer in place.

Aside from Dam Safety's concerns, the Company notes operational issues with the Twin Lakes flow control gates in the form of leakage and deterioration. The gates have exceeded their expected design life after 80 years of service. Finally, the valve house and intake are in an avalanche zone; debris frequently deposits into the tunnel inlet channel – blocking and limiting flow. The ability to easily access this area for debris removal is needed to improve operational efficiency without draining the channel; a cofferdam has been determined to be the best solution.

Loan Feasibility Study

Michael Graber, P.E., with RJH Consultants, Inc. prepared the Loan Feasibility Study titled, Loan Feasibility and Evaluation Report, dated May 2022 and was paid for with a grant from the CWCB. The feasibility study is in accordance with CWCB guidelines and includes an analysis of alternatives and estimated costs. Additionally, financial statements were prepared by Hancock Froese & Company, LLC.

Water Rights

The Company operates under the water right for the Reservoir as shown in Table 1 and has diverted an annual average of 42,000 AF per year under this water right. The Company can divert water at any time of the year - provided its right is in priority. Though it may not exceed 68,000 AF in an irrigation year nor a ten-year average of 570,000 AF. The Company diverts an average of 51,430 AF per year between its east slope and west slope water rights.

TABLE 1: PROJECT WATER RIGHTS

Name	Amount (cfs)	Appropriation Date	Adjudication Date	Case No.
Twin Lakes Reservoir and Canal Company	625	8/23/1930	08/25/1936	CA 3082

Project Description
The purpose of this Project is to ensure the Company's ability to adequately and safely store and divert water into their system.

Alternative 1 – No Action: No action would not address dam safety concerns nor would it address issues found with the Twin Lakes Tunnel. Failure to address these concerns will allow for the continued deterioration of infrastructure, impact operational efficiency, and may eventually lead to a storage restriction enforced by Dam Safety. For these reasons, it was not selected.

Alternative 2 – Structure Replacements: This alternative would completely replace all major components of concern. The outlet works would be demolished and rebuilt, the steel facing on the dam would be replaced, the trash rack replaced with a mechanically operated trash rake, and the intake tunnel and valve house would be rebuilt. This alternative is the most expensive at an estimated cost of $21.5M and would replace components for which significant service life remains. Because of the high cost of this alternative, it was not selected.

Selected Alternative 3 – Structural Rehabilitation: This alternative involves rehabilitating the existing infrastructure and maximizing the remaining service life. It mitigates the risk of failure of one or more of the structures and ensures that water deliveries to shareholders is maintained. The structural improvements include repairing the outlet works with vent installation, installing a geosynthetic liner over the steel dam face, building a retaining wall for heavy equipment access for cleaning debris from intake, and replacing existing gates at the valve house. The total cost of this alternative is $9,833,000 as shown in Table 2.

TABLE 2: ESTIMATED PROJECT COST

Tasks	Cost
Geosynthetic Liner System	$3,450,000
Infrastructure Replacement and Repairs	$3,947,000
Engineering and Project Management	$797,000
Contingency 20%	$1,639,000
TOTAL	**$9,833,000**

Permitting: Review and approval of project designs, plans, specifications, and construction oversight by the SEO will be required. It is anticipated the U.S. Army Corps of Engineers will require a Section 404 Permit of the Federal Clean Water Act. Since Grizzly Reservoir Dam is located in the White River National Forest, requirements for draining the reservoir will be coordinated with the Aspen-Sopris Ranger District. Coordination with Pitkin County will be required for draining the reservoir. Reservoir operation will need to satisfy the requirements in the Memorandum of Understanding between the Colorado Division of Water Resources, Colorado Parks and Wildlife, and the Colorado Water Quality Control Division dated April 16, 2012.

Schedule: The Company intends to undertake the project during the summer of 2023 and be completed by the end of 2023. Bidding has already occurred and the contractors have been selected. The Company will hold weekly meetings with both contractors to coordinate schedules and activities. The Project construction will begin in the summer of 2023 likely be completed in the fall of 2023.

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. The Company qualifies for a blended interest rate of 2.90% for a 30-year loan (Ownership: 2% Agricultural, 24% Low-Income Municipal, 72% Middle-Income Municipal, and 2% Commercial). All interest rate evaluations are per CWCB Financial Policy #7 (Lending Rate Determination).

TABLE 3: FINANCIAL SUMMARY

Project Cost	$9,833,000
CWCB Loan Amount	$9,833,000
CWCB Loan Amount (Including 1% Service Fee)	$9,931,330
CWCB Annual Loan Payment	$500,161
CWCB Annual Loan Obligation (1st Ten Years)	$550,177
Number of Shares	49,589
Current Assessment per Share	$30.00
Annual Loan Obligation per Share	$11.09
Future Assessment per Share (Estimate)	$30.20*

* Rates have been set to adequately cover the future project loan

Creditworthiness: The Company currently carries no debt.

TABLE 4: FINANCIAL RATIOS

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% | average: 100% - 120% | strong: >120%	156% (strong) $1.50M/0.963M	100% (average) $1.51M/$1.51M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% | average: 100% - 120% | strong: >120%	N/A	100% (average) $1.51M/$0.963M $0.550M
Cash Reserves to Current Expenses weak: <50% | average: 50% - 100% | strong: >100%	372% (strong) $3.59M/0.963M	237% (strong) $3.59M/$1.51M
Annual Operating Cost per Acre-Foot (51,430 AF) weak: >$20 | average: $10 - $20 | strong: <$10	$18.72 (average) $0.963M/51,430AF	$29.42 (weak) $1.51M/51,430AF

Collateral: Security for this loan will be a pledge of assessment revenues backed by an assessment covenant and rehabilitation Project itself (including Grizzly Reservoir). This security is in compliance with the CWCB financial Policy #5 (Collateral).

cc: Matt Rouleau, General Manager, Twin Lakes Reservoir and Canal Company
Jennifer Mele, Colorado Attorney General's Office

Attachments: Water Project Loan Program – Project Data Sheet

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Grizzly Reservoir Rehabilitation

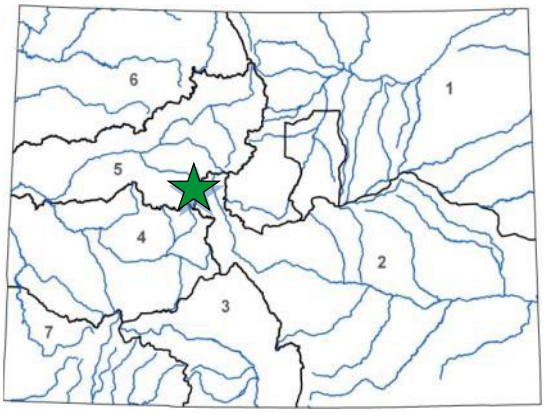
Twin Lakes Reservoir and Canal Company

January 2023 Board Meeting

LOAN DETAILS	
Project Cost:	$9,833,000
CWCB Loan (with 1% Service Fee):	$9,931,330
Loan Term and Interest Rate:	30 Yrs @ 2.90%
Funding Source:	Severance Tax PBF

BORROWER TYPE		
Agriculture	*Municipal*	*Commercial*
2%	24% Low - 72% Mid - 0% High	2%

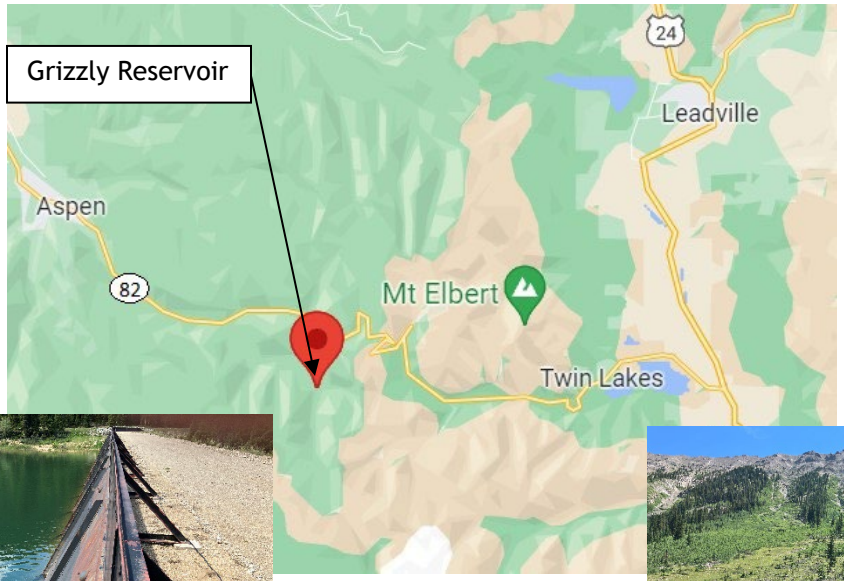
PROJECT DETAILS	
Project Type:	Reservoir Rehabilitation
Average Annual Delivery:	51,430 AF



LOCATION			
County:			Pitkin
Water Source:			Roaring Fork
Drainage Basin:			Colorado
Division:	5	*District:*	38

The Twin Lakes Reservoir and Canal Company was formed in 1897 and operates the Independence Pass Transmountain Diversion System. The system collects water from a 45 square mile area in the Upper Roaring Fork River basin in Grizzly Reservoir and diverts it east under the continental divide via the Twin Lakes Tunnel to Twin Lakes Reservoir. The Company serves 240 shareholders and the water can be used for all beneficial purposes.

The project will include work on both the dam and tunnel. The dam is a high hazard rockfill embankment with an upstream steel plate face, while the concrete tunnel is approximately 4 miles long and 12 feet in diameter. The project will address safety concerns identified on the dam by the Colorado Dam Safety Branch including seepage issues and corrosion and thinning of the steel plate, as well as improving operational issues of the tunnel including increased access for debris removal at the intake structure and new inlet gates. Construction at the dam will include rehabilitating the outlet works, including adding an air vent, and installing a geosynthetic lining system over the dam's steel facing. Construction is expected to begin in the summer of 2023 and take several months.



Steel Plate Dam Face

Tunnel Valve House