



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Cole Bedford, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

DATE: November 17-18, 2021 Board Meeting

AGENDA ITEM: 11c. Water Project Loans
Town of Breckenridge - Goose Pasture Tarn Dam Rehabilitation

Staff Recommendation

Staff recommends the Board include this Water Project Loan of \$13,130,000 in the 2022 CWCB Projects Bill for consideration by the Bill sponsors. Upon passage of the Projects Bill and signature by the Governor, CWCB shall enter into a contract for the loan (\$13,000,000 for Project costs and \$130,000 for the service fee) with the Town of Breckenridge, acting by and through its Utility Enterprise Fund, for costs related to the Goose Pasture Tarn Dam Rehabilitation Project, from the Construction Fund. The loan terms shall be 30 years at an interest rate of 2.00% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Introduction

The Town of Breckenridge (Town) is applying for a Water Project loan for the Goose Pasture Tarn Dam Rehabilitation (Project). The Town operates and maintains the Goose Pasture Tarn Dam located on the Blue River about two miles upstream of downtown Breckenridge. The 57-foot-high dam and 568 AF reservoir were built in 1965. Stored water serves the Town's Gary Roberts Water Treatment Plant and is also used for snowmaking by the Breckenridge Ski Resort. In 2015, the Colorado Dam Safety Branch (DSB) imposed a reservoir storage restriction on the dam after identifying issues related to its service spillway. The Town has since collaborated closely with the DSB to develop the Project which will mitigate those issues. The total Project cost is estimated at \$23,000,000. In addition to this loan, the Town has secured a \$10,000,000 Pre-Disaster Mitigation Grant from the Federal Emergency Management Agency (FEMA) to cover project costs. See attached Project Data Sheet for a location map and Project summary.



Borrower - Town of Breckenridge

Though a small town of about 5,000 residents, the Town of Breckenridge is a well-known tourist and winter sport destination. It is a home rule municipality and utilizes a Council-Manager form of government. The Mayor and six Council members are part-time employees who determine policies, enact local legislation, adopt budgets, and appoint a Town Manager. The Town Manager is responsible for managing day-to-day operations. Town services are carried out through various departments including a Public Works Department which manages water supply and delivery via the Water Division. The Water Division “works to provide quality water that meets or exceeds the drinking water standards in sufficient quantities for domestic, commercial, irrigation, and fire protection uses.” The Water Division also has oversight of the Town’s Utility Fund, through which water-fee revenues are collected and water related expenses are drawn.

The Town is party to a regional water efficiency plan and also maintains an individual conservation plan, both of which are up-to-date.

Background

The Goose Pasture Tarn Dam and Reservoir were built in 1965 by private interests and acquired by the Town in 1970. The original dam design incorporated a service spillway which passed water under normal operating conditions and, in 1990, a second spillway was constructed immediately adjacent to the service spillway in order to pass extreme flows in emergency situations.

In 2015, deterioration of the service spillway’s concrete slab floor was noticed during high flow conditions. This prompted an investigation by the Colorado DSB, which identified excessive seepage below the spillway as the cause of the deterioration. This seepage created void spaces that, if left unchecked, may threaten the integrity of the dam. In response, a storage restriction was placed on the reservoir. The restriction reduced the allowed storage by nearly half; from 568 AF to 324 AF. Additionally, the emergency spillway elevation was temporarily lowered below that of the compromised service spillway to prevent flows from passing through the service spillway until a corrective action could be implemented. A formal assessment of the conditions and evaluation of rehabilitation alternatives was undertaken by Kumar & Associates and submitted to the Town in 2017. On the basis of that assessment and evaluation, W. W. Wheeler & Associates was retained to design the Goose Pasture Tarn Dam Rehabilitation Project. The Project was bid and subsequently awarded to Moltz Constructors. Moltz mobilized and began work in Spring 2021.

Loan Feasibility Study

The Loan Feasibility Study titled “Feasibility of Goose Pasture Tarn Spillway Rehabilitation” dated July 19, 2021 was prepared by the Town of Breckenridge Public Works staff with support from Greg Monley, P.E. of W.W. Wheeler & Associates. It is in accordance with CWCB guidelines and includes an analysis of alternatives, preliminary engineering design, a construction cost estimate, and recent years’ comprehensive annual financial reports.

Water Rights

The Town manages a large portfolio of direct flow, storage, and augmentation rights. In 2020, the Town treated 2,800 AF for residential and commercial use and delivered about 500 AF of untreated water for snowmaking and irrigation purposes. The Town’s water rights portfolio includes many minor and/or conditional diversion and storage rights. Table 1 shows the most significant absolute diversion and storage rights.

TABLE 1: WATER RIGHTS

Source Name	Rate or Volume	Adjudication Date	Appropriation Date	Water Court Case No.
Direct Flow Rights				
Blue River	4.87 cfs	03/02/1910	08/31/1885	CA1277
	2.47 cfs		07/14/1896	
	2.20 cfs		09/01/1903	
	6.35 cfs		07/05/1904	
	1.55 cfs		10/01/1885	
Storage Rights				
Goose Pasture Tarn Reservoir	1,396 AF	05/31/1972	08/31/1961	CA2371
	800 AF	12/31/1981	12/19/1970	81CW488
Sawmill Reservoir	5 AF	03/02/1910	08/31/1885	CA1277
	7 AF	03/02/1910	10/30/1885	CA2371
	25 AF	05/31/1972	05/15/1961	

Project Description

The purpose of the Project is to restore the Goose Pasture Tarn Dam’s ability to safely store its full design capacity and remove the storage restriction imposed by the Colorado DSB.

Alternative 1 - No Action: This alternative would allow the storage restriction to remain in place indefinitely and not repair the dam itself. This is not desirable as it would result in the loss of a critical component of the Town’s water storage infrastructure and reduce the Town’s ability to reliably supply water.

Alternative 2 - Replace the Service Spillway with a New Spillway beyond the Left Abutment: This alternative would replace the compromised service spillway with a new spillway beyond the limits of the dam embankment. While this alternative would meet the purpose of the Project, it was not selected because it had the highest anticipated construction cost; would result in a new flow pattern below the dam with unknown consequences; and would impact private property adjacent to the reservoir.

Selected Alternative 3 - Replace both the Service and Emergency Spillways with One New Spillway: This alternative was selected as the preferred alternative as it achieves the Project purpose and does so while minimizing costs, limits impacts to adjacent residences, and maintains the existing flow pattern below the dam. The new combined spillway is designed to pass the inflow design flood as required by the Colorado DSB. In the course of constructing the new spillway, the Contractor will be able to expose and fill voids. They will also install a downstream filter and drain system to direct seepage away from the toe of the dam.

The cost estimate of this alternative is \$23,000,000 as shown in Table 2.

TABLE 2: ESTIMATED PROJECT COST

Task	Total
Engineering/Construction Administration	\$1,862,000
Mobilization/Site Preparation	\$5,060,000
Demolition and Excavation	\$2,282,000
Earthwork	\$2,707,000
Drainage Systems	\$280,000
Spillway Structure	\$7,130,000
High Level Outlet Works and Plant Intake Pipe	\$1,500,000
Low Level Outlet Works Rehabilitation	\$465,000
Contingency/Miscellaneous	\$1,714,000
TOTAL	\$23,000,000

Permitting: All permitting required for the project construction was undertaken prior to mobilization by the contractor. National Environmental Policy Act (NEPA) requirements were also met in order to secure the FEMA Pre-Disaster Mitigation Grant. No additional permits are expected during the construction period.

Schedule: During the 2021 calendar year, work began on demolishing the service spillway, excavating the west abutment of the dam, and completing the reservoir diversion construction. During 2022, the Town intends to construct the new spillway, install dam drain improvements, and rehabilitate the dam outlet works. During 2023, final site rehabilitation will take place.

Financial Analysis

Table 3 provides a summary of the Project’s financial aspects. The Town qualifies for the High-Income Municipal interest rate of 2.00% for a 30-year term.

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	\$23,000,000
FEMA Pre-Disaster Mitigation Grant	\$10,000,000
CWCB Loan Amount	\$13,000,000
CWCB Loan Amount (Including 1% Service Fee)	\$13,130,000
CWCB Annual Loan Payment	\$586,253
CWCB Annual Loan Obligation (1 st Ten Years)	\$644,878
Number of Taps	5,014
Monthly Loan Obligation per Tap	\$10.75

Creditworthiness: The Town’s Utility Fund has one loan currently in repayment. A \$58,000,000 loan was secured from the Colorado Water and Power Development Authority (CWRPDA) for the construction of the North Water Treatment Plant, completed in 2020. The Town is currently in good standing with the CWRPDA. Per Financial Policy #6, parity will be required as a condition of the Water Projects Loan contract. Table 3 details this loan and Table 4 shows the Financial Ratios.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
2017 CWRPDA	\$58,000,000	\$50,571,180	-\$3,000,000	2039	Water revenues

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Prior Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% average: 100% - 120% strong: >120%	100% (average) \$5.0M/\$5.0M	100% (average) \$5.6M/5.6M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% average: 100% - 120% strong: >120%	100% (average) <u>\$5.0M-\$2.0M</u> \$3.0M	100% (average) <u>\$5.6M-\$2.0M</u> \$3.6M
Cash Reserves to Current Expenses weak: <50% average: 50% - 100% strong: >100%	200% (strong) \$10.0M/\$5.0M	179% (strong) \$10.0M/\$5.6M
Debt per Tap ¹ (5,014 taps) weak: >\$5,000 average: \$2,500 - \$5,000 strong: <\$2,500	\$10,085 (weak) \$50.5M/5,014	\$12,678 (weak) \$63.5M/5,014
Average Monthly Water Bill weak: >\$60 average: \$30 - \$60 strong: <\$30	\$22 (strong)	\$33 (average)

¹The Town has several customers—including the Breckenridge Ski Resort—whose water usage represents a disproportionately large percentage of the Town’s total water delivered. For this reason, the Town’s total number of taps is small relative to the total volume of water delivered and its “Debt per Tap” ratio suggests a weaker position than the Town’s actual position.

Collateral: Security for this loan will be a pledge of revenues backed by a rate covenant and annual financial reporting. This security is in compliance with the CWCB financial Policy #5 (Collateral).

cc: Laura Lynch, Water Division Manager, Town of Breckenridge
 Jennifer Mele, Colorado Attorney General’s Office

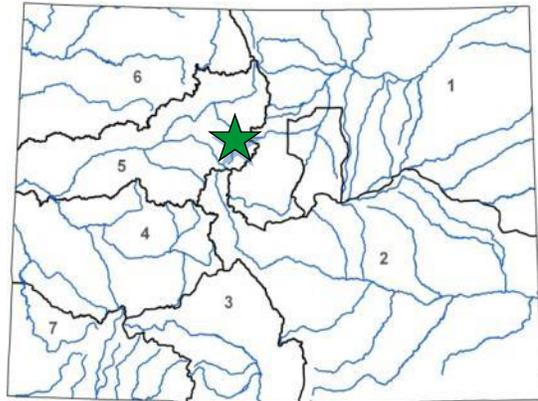
Attachment: Water Project Loan Program - Project Data Sheet



Goose Pasture Tarn Dam Rehabilitation

Town of Breckenridge
 November 2021 Board Meeting

L O A N D E T A I L S		
Project Cost:	\$23,000,000	
CWCB Loan (with 1% Service Fee):	\$13,130,000	
Loan Term and Interest Rate:	30 Yrs @ 2.00%	
Funding Source:	Construction Fund	
B O R R O W E R T Y P E		
Agriculture	Municipal	Commercial
0%	0% Low - 0% Mid - 100% High	0%
P R O J E C T D E T A I L S		
Project Type:	Reservoir Rehabilitation	
Recovered Storage:	244 AF	
Preserved Storage:	568 AF	
Annual Deliveries:	2,800 AF	



L O C A T I O N			
County:	Summit		
Water Source:	Blue River		
Drainage Basin:	Colorado		
Division:	5	District:	36

The Town of Breckenridge is a municipality incorporated in 1880. It currently serves 5,014 water taps comprised of residential, commercial, governmental and irrigation customers. The Town has a diverse water rights portfolio made up of direct flow rights, storage rights, and augmentation water. Storage rights are primarily within Goose Pasture Tarn Reservoir (Reservoir), Green Mountain Reservoir, Clinton Reservoir, and Windy Gap Reservoir.

The Reservoir has an earthen dam classified as high hazard. In 2015, safety issues were identified with the concrete service spillway during high flows. Subsequently, the Colorado Dam Safety Branch (DSB) issued a storage restriction in 2016 lowering the safe water level by four feet and reducing storage capacity by approximately 244 AF. This Project will rehabilitate the dam and remove the storage restriction thereby reducing the risks of damage to property and public infrastructure, and potential loss of life up to 10 miles below the Reservoir. The Project will be funded, in part, by a grant from the Federal Emergency Management Agency (FEMA) for \$10,000,000. Construction began in April of 2021 and is expected to be completed in the fall of 2023.

