



**COLORADO**

**Colorado Water  
Conservation Board**

Department of Natural Resources

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**TO:** Colorado Water Conservation Board Members

**FROM:** Anna Mauss P.E., Project Manager  
Kirk Russell, P.E., Finance Section Chief

**DATE:** May 18-19, 2016 Board Meeting

**AGENDA ITEM:** 21a. Water Project Loans  
Dixon Canon Ditch and Reservoir Company - Dixon Reservoir Dam Improvements

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### Introduction

The Dixon Canon Ditch and Reservoir Company (Company) is applying for a loan for the Dixon Reservoir Dam Improvement (Project). The Company intends to use loan funds to address dam seepage issues and dam outlet repair improvements to avoid a storage restriction from the Dam Safety Branch of the State Engineer's Office (SEO). The total Project cost is estimated to be \$309,000. The Company is requesting a loan from the CWCB for approximately 90% of the Project Cost. See attached Project Data Sheet for a location map and Project summary.

### Staff Recommendation

Staff recommends the Board approve a loan not to exceed \$280,881 (\$278,100 for Project costs and \$2,781 for the 1% service fee) to the Dixon Canon Ditch and Reservoir Company for costs related to the Dixon Reservoir Dam Improvement Project from the Construction Fund. The loan terms shall be 30 years at a blended interest rate of 2.55% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.



## Background

The Company owns and operates the Dixon Reservoir Dam (Reservoir) and associated ditch located in Larimer County on the west side of Fort Collins. The Reservoir is directly east of Horsetooth Reservoir. The Company diverts water off of Dixon Creek and provides irrigation water to a 206-acre service area via approximately 9,000 feet of pipe and ditch. The water is typically used to irrigate turf, agricultural crops, and the City of Fort Collins parks and open space.

The dam was constructed in 1885 and is classified as a Significant Hazard Dam by the SEO. The Reservoir has a decreed storage volume of 412 acre-feet. Over time, several maintenance projects were completed on the dam including: tree removal, sand filter installation, relining of the outlet pipe, and replacement of the outlet gate and trash rack.

The Reservoir is not currently under a storage restriction by the SEO; however, the November 14, 2011 and May 30, 2013 SEO inspection reports identified locations of seepage to need to be addressed in order to maintain the full storage decrees. Those inspection reports suggested installing an engineered drain to filter and collect seepage water. Installation of a flow-measuring device was also suggested so the quantity and quality of the seepage can be monitored.

## Loan Feasibility Study

John Gauthiere, P.E. of Gauthiere Engineering, Inc., prepared the Loan Feasibility Study, titled "Feasibility Study for The Dixon Canon Ditch and Reservoir Company - Dixon Reservoir Dam Improvement Project," dated March 30, 2016. The feasibility study was prepared in accordance with the CWCB guidelines and includes an analysis of alternatives, preliminary engineering design, and construction cost estimates.

## Borrower - Dixon Canon Ditch and Reservoir Company

The Company is a non-profit corporation registered in the State of Colorado as a mutual irrigation corporation. It is in good standing with the Colorado Secretary of State. It has operated since 1885 but did not establish Articles of Incorporation until 1984. There are five shareholders and 1,000 shares of stock. Shareholder approval is required to set assessments. The Company's three-member Board of Directors has the power to forfeit or sell stock shares if assessments are not paid. Company revenues come from shareholder assessments.

## Water Rights

The Company's source of water comes from Dixon Creek. Water rights of the Company include:

TABLE 1: WATER RIGHTS

Name	Amount	Appropriation Date	Adjudication Date	Water Court Case No.
Dixon Canon Reservoir	448 AF	10/8/1885	12/9/1904	CA1591
Dixon Canon Reservoir	21 AF	8/30/1906	4/22/1922	CA2031

Average annual diversions are 312-acre feet.

## Project Description

The purpose of this Project is to help the Company continue to deliver water to shareholders and maintain the safety of the dam. The Company considered the following Project alternatives:

**Alternative 1 - No-Action:** This alternative was considered undesirable as it jeopardized the Company's storage decrees.

**Alternative 2 - Remove and Reconstruct the Dam:** This alternative considered reconstructing 180-feet of the 975-foot dam and replacing the outlet pipe with a new, larger pipe. The estimated cost of was \$975,000 making this alternative more than three times more expensive than Alternative 3.

**Selected Alternative 3 - Seepage Collection System Installation:** This alternative considered the placement of a seepage filtration and collection blanket on the downstream face of the existing dam. In addition to the seepage control, approximately 70-feet of outlet pipe will be added as an extension to the current outlet pipe. A closed conduit meter will be installed to replace an existing Parshall flume. The estimated cost is \$309,000.

**TABLE 2: ESTIMATED PROJECT COST**

Task	Cost
Construction	\$208,300
Contingency (approximately 20%)	\$41,700
Design Engineering	\$29,500
Project Management and Administration	\$29,500
Total	\$309,000

**Permitting:** All easements and rights-of-way have been secured. The Company expects to be exempt from 404 permitting by statutory exemption 33 CFR Section 323.4(a)3.

**Schedule:** Final design and SEO approval of plans are expected mid-summer 2016, with construction occurring in fall of 2016. A six-month construction window is expected.

#### Financial Analysis

The Company qualifies for a blended interest rate of 2.55% for a 30-year term (Ownership: 17% Agricultural, and 83% Middle-Income Municipal). Table 3 provides a summary of the Project's financial aspects.

**TABLE 3: FINANCIAL SUMMARY**

Total Project Cost	\$309,000
Borrower Match	\$30,900
CWCB Loan Amount	\$278,100
CWCB Loan Amount (Including 1% Service Fee)	\$280,881
CWCB Annual Loan Payment	\$13,509
CWCB Annual Loan Obligation (Including Reserve Requirement)	\$14,860
Number of Shares	1,000
Annual Loan Obligation per Share	\$14.86/share
Previous Assessment per Share (2013 & 2014)	\$10.00/share
Current Assessment per Share (2015+) as increased for Project	\$15.00/share

**Creditworthiness:** The Company has no existing debt.

TABLE 4: FINANCIAL RATIOS

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	411% (Strong) \$14.8/\$3.6K	101% (Average) \$18.6K/\$18.4K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	N/A	101% (Average) (\$18.6K-\$3.6K) \$14.9K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	2097%* (Strong) \$75.5K/\$3.6K	242% (Strong) \$44.6K/\$18.4
Annual Operating Cost per Acre-Foot (312AF) weak: >\$20 - average: \$10 - \$20 - strong: <\$10	\$11.54 (Average) \$3.6K/312 AF	\$58.97 (Weak) \$18.4K/312 AF

\*Company has built up reserves over past years in anticipation of the Project.

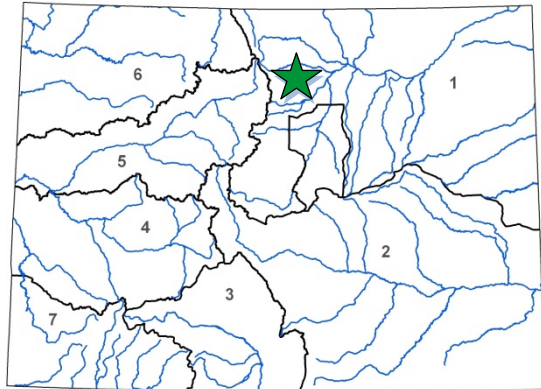
**Collateral:** Security for this loan will be a pledge of assessment revenues backed by an assessment covenant and the Project itself (the Dixon Reservoir Dam). This is in compliance with the CWCB Financial Policy #5 (Collateral).

cc: Doug Kokes and Paul Rupp, Dixon Canon Ditch and Reservoir Company  
 Susan Schneider/Jennifer Mele, Colorado Attorney General's Office

Attachment: Project Data Sheet



L O A N   D E T A I L S	
Project Cost:	\$309,000
CWCB Loan (with Service Fee):	\$278,100
Loan Term and Interest Rate:	30 years @ 2.55%
Funding Source:	Construction Fund
B O R R O W E R   T Y P E	
Agriculture	Municipal      Commercial
17%	0% Low - 83% Mid - 0% High      0%
P R O J E C T   D E T A I L S	
Project Type:	Dam Rehabilitation
Average Annual Delivery:	312 AF
Total Storage Effect:	412 AF



L O C A T I O N			
County:		Larimer	
Water Source:		Dixon Creek	
Drainage Basin:		South Platte River	
Division: 1		District: 3	

Dixon Canon Ditch and Reservoir Company owns and operates the Dixon Reservoir Dam and associated ditch located in Larimer County on the west side of Fort Collins. Dixon Reservoir is directly east of Horsetooth Reservoir. The ditch diverts water off of Dixon Creek and provides water for outdoor irrigation to a 206-acre service area via approximately 9,000 feet of pipe and ditch. The water is typically used to irrigate turf, agricultural crops, and the City of Fort Collins parks and open space. The dam was constructed in 1885 and is classified as a Significant Hazard Dam by the Dam Safety Branch of the Office of the State Engineer (SEO). The Reservoir has a decreed storage volume of 412 acre-feet. Recent SEO inspections identified areas of seepage that need to be addressed in order to maintain the full storage decrees. The purpose of this project is to address seepage issues and improve the dam outlet works so the Company can continue providing an adequate amount of irrigation water to shareholders while minimizing the risk of dam failure. Construction is expected to begin in late 2016.

