



COLORADO

Colorado Water Conservation Board

Department of Natural Resources
1313 Sherman Street, Room 718
Denver, CO 80203

September 21, 2017

Jerred Hoffman, Superintendent
Fort Lyon Canal Company
750 Brent Avenue
Las Animas, CO 81054

Re: Adobe Creek Dam Rehabilitation - Loan Approval

Mr. Hoffman:

I am pleased to inform you that on September 20, 2017 the Colorado Water Conservation Board approved your loan request for the Adobe Creek Dam Rehabilitation as described in the application and approved Loan Feasibility Study titled "Feasibility Study for the Rehabilitation of Adobe Creek Dam," dated August 1, 2017. The Board approved a loan not to exceed \$8,181,000 (\$8,100,000 for project costs and \$81,000 for the 1% Loan Service Fee). The loan terms shall be 1.5% per annum for 40 years. The Board also approved a WSRF grant of \$1,000,000 from the Statewide Account and \$100,000 from the Arkansas Basin Account for related project costs.

I have attached a copy of the updated Board memo dated September 21, 2017 that includes the Board's approval. After the Board approves a loan and grant there are a few steps that remain in the process including:

Contracting: An executed loan contract must be in place before funds can be disbursed for eligible project expenses. Peg Mason, Loan Contracts Manager, will contact you to initiate the loan contracting process. She can be reached at (303) 866-3441 x3227.

Design/Construction: You must adhere to the CWCB Design and Construction Administration Procedures including an invitation to the Prebid, Preconstruction and Bid Opening meetings. Anna Mauss, P.E., will be the Project Manager for this phase of the process and will work with you on the disbursements of your loan funds. She can be reached at (303) 866-3441 x3224.

On behalf of the Board, I would like to thank you for your interest in a loan from the CWCB.

Sincerely,

Kirk Russell, P.E., Chief
Finance Section

Attachment: Updated Board Memo





COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

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Denver, CO 80203

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

Rebecca Mitchell, CWCB Director

TO: Colorado Water Conservation Board Members

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

DATE: September 20-21, 2017 Board Meeting (Updated September 21, 2017)

AGENDA ITEM: 14b. Water Project Loans and Water Supply Reserve Fund (WSRF) Grants
Fort Lyon Canal Company - Adobe Creek Dam Rehabilitation

Introduction

The Fort Lyon Canal Company (Company) is applying for a loan and grant for the Adobe Creek Dam Rehabilitation (Project). The purpose of the Project is to restore 32,560 acre-feet of storage at Adobe Creek Reservoir. The Reservoir has been under a storage restriction imposed by the Dam Safety Branch of the Office of the State Engineer (SEO) since May 5, 2017. The restriction was issued due to seepage conditions in the dam's foundation and deteriorated condition of the outlet works. The total Project cost is estimated to be \$9,200,000. The Company is requesting a loan from the CWCB for approximately 88% of the Project cost and a WSRF grant for approximately 12% of the Project cost. See attached Project Data Sheet for a location map and Project summary.

The Arkansas Basin Roundtable approved a \$1,000,000 statewide and \$100,000 basin WSRF grant request for this project.

Staff Recommendation for CWCB Loan (Board approved Staff Recommendation September 20, 2017)

Staff recommends the Board approve a loan not to exceed \$8,181,000 (\$8,100,000 for Project costs and \$81,000 for the 1% service fee) to the Fort Lyon Canal Company for costs related to Adobe Creek Dam Rehabilitation Project, from the Severance Tax Perpetual Base Fund. The loan terms shall be 40 years at an agricultural interest rate of 1.50% per annum with restricted reservoir rate reduction applied. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Staff Recommendation for WSRF Grant

Staff recommends approval of up to \$1,000,000 from the Statewide Fund and \$100,000 from the Arkansas Basin Fund to the Fort Lyon Irrigation Company for costs related to the Adobe Creek Dam Rehabilitation Project.



Background

The Fort Lyon Canal is the one of largest irrigation systems in the State of Colorado. At 113 miles long, it brings water from the Arkansas River northwest of La Junta, to its termination in the Wheatridge lateral east of the City of Lamar, irrigating approximately 93,000 acres. Water conveyed through the Fort Lyon Canal is also supplied to the Amity Mutual Irrigation Company through the Kicking Bird Canal to the Great Plains Reservoirs, which diverts water from the Fort Lyon Canal approximately 11.5 miles northeast of the City of Las Animas.

The Fort Lyon Canal System includes three off-channel water storage reservoirs: Horse Creek, Adobe Creek, and Thurston. The first two are supplied by the Storage Canal and contain the vast majority of the storage space. Winter storage of water in these two reservoirs provides supplemental supply to shareholders in periods of low flows in the Arkansas River when irrigation water is needed most.

Adobe Creek Dam was originally constructed in 1910 and raised five feet in 1970. The dam is a 32-foot-high, high hazard embankment dam. The reservoir stores approximately 77,400 acre-feet of active storage and 4,292 acre-feet of dead storage.

Temporary repairs were made to the dam in March of 2016 after piping conditions were observed along the outlet works conduit during a routine dam inspection. Dam safety evaluations of Adobe Creek Dam, completed in January of 2017, concluded that there is higher than acceptable seepage in a sand layer in the foundation of the dam. In addition, it was determined that the 112-year-old, vitrified clay outlet works in the dam is severely deteriorated and has exceeded its design life. In a letter dated May 5, 2017, the SEO ordered the Reservoir to be restricted to 7 feet below the spillway crest "due to the adverse seepage conditions through the dam's foundation and along the outlet conduits and the deteriorated condition of the dam's outlet works." This equates to a loss of 32,560 acre-feet of reservoir storage volume.

Loan Feasibility Study

Steve Jamieson, P.E., W.W.Wheeler & Associates, Inc, prepared the Loan Feasibility Study titled, "Feasibility Study for the Rehabilitation of Adobe Creek Dam," dated August 1, 2017. The feasibility study was prepared in accordance with CWCB guidelines and includes an analysis of alternatives, preliminary engineering design, and construction cost estimates. Financial statements were provided by the Company.

Borrower - Fort Lyon Canal Company

The Company is a Colorado mutual ditch company and a non-profit corporation, incorporated in 1897, and is in good standing with the Colorado Secretary of State. The Company's office is located in Las Animas. The Company has 275 shareholders and has issued 93,989 shares of stock. Revenues are primarily derived from assessments. Additional revenue comes from an agreement with the Amity Mutual Irrigation Company to transport water through the canal, and from Colorado Parks and Wildlife for easement access to several of the Company's reservoirs.

The Company has a five-member board of directors. Its by-laws authorize the Board of Directors to borrow money and to provide for the payment of the same by assessment of its members. The board appoints a committee to set preliminary assessments. The preliminary assessment is then voted on by the shareholders at the annual December meeting. The Board has the authority to take measures to enforce assessments, including the suspension of water deliveries and the eventual sale or forfeiture of shares for failure to pay assessments.

Water Rights

The Company owns the following storage rights related to the Project:

TABLE 1: IMPACTED WATER RIGHTS

Name	Amount (AF)	Appropriation Date	Adjudication Date	Use
Adobe Creek	61,575	25-Jan-1906	8-Nov-1928	Irrigation
Adobe Creek	25,425	29-Dec-1908	8-Nov-1928	Irrigation

The Company's average annual diversions are 221,000 AF. Specific to Adobe Creek Reservoir, annual releases have ranged from zero to nearly 67,000 acre-feet in the past 20 years. On average, about 28,000 acre-feet of water is released from the Reservoir to stockholders in Otero, Bent, and Prowers Counties.

Project Description

The objective of the Project is to replace the outlet works and seepage control systems in order to remove the storage restriction. The alternatives considered for the rehabilitation work included:

Alternative 1 - No Action: This alternative was not selected because, as the Company's largest storage vessel, Adobe Creek Reservoir is critical for irrigation water storage for shareholders.

Selected Alternative 2 - Replace Outlet Works in Existing Alignment: This alternative consists of removing the four existing 120-foot long, 3-foot diameter vitrified clay pipe outlet conduits and replacing them with a 10-foot by 6-foot cast-in-place (CIP) reinforced concrete outlet works conduit. Additional work includes: replacing the existing system of toe drains with a sand filter chimney drain in the main dam section and a shallow buried toe drain in the left and right wing dikes; construction of a new CIP gate tower; construction of an outlet works terminal basin; construction of an access bridge to the new intake tower; and installation of new control gates. The estimated cost of this alternative is \$9,200,000.

Alternative 3 - Replace Outlet Works in New Alignment: This alternative consists of the same components as Alternative 2 but with the new outlet works being constructed in a new alignment. By constructing the new outlet in a different alignment, the existing outlet works could be utilized during construction until new outlets works are complete, minimizing the size of a cofferdam during construction. With an estimated cost of \$12,300,000, the cofferdam savings did not offset the expense of a new alignment.

The Company selected Alternative 2 as the best approach. It anticipates a second phase of construction involving raising the dam by two to five feet. If it finds partners to offset costs to shareholders, the Company intends to apply for a Water Plan Grant for the enlargement.

The total cost associated with the Project is shown in Table 2.

TABLE 2: ESTIMATED PROJECT COST

Task	Total
Engineering	\$843,000
Construction Observation	\$850,000
Permitting/Design Review Fee	\$157,000
Contingency	\$950,000
Construction	\$6,400,000
TOTAL	\$9,200,000

Permitting: The Company anticipates getting a Nationwide Maintenance 404 permit for impacts to wetlands or waters of the United States. It will also obtain permits from Bent and Kiowa Counties, and permits related to emissions and stormwater from the Colorado Department of Health and Environment.

Schedule: Final design is underway with SEO approval anticipated in spring of 2018. Construction will likely begin in the fall of 2018 with completion by spring of 2019.

Water Supply Reserve Fund Grant

Applicant & Grantee: Fort Lyon Canal Company
Water Activity Name: Adobe Creek Dam Rehabilitation Project
Water Activity Purpose: Agricultural, Environmental, Recreational
County: Bent & Kiowa
Drainage Basin: Arkansas
Water Source: Arkansas River

At the July 2017 Arkansas Basin Roundtable meeting, the Roundtable recommended approval of the Adobe Creek Dam Rehabilitation Project application request for the following Basin and Statewide Funds:

Amount Requested/Source of Funds: \$100,000 Arkansas Basin Fund
\$1,000,000 Statewide Fund
\$1,100,000 Total Grant Request

Matching Funds: Basin Fund Match: \$100,000 = 9% of total grant request (meets 5% min);

Non-Statewide Fund Match: \$8,200,000 = 745% of total grant request (meets 25% min);

Applicant & 3rd Party Match: \$8,100,000 = 736% of total grant request (meets 5% min)

Discussion: This Project supports both the storage objective of the Water Plan and the environment and recreational objective. The Project is included in the Arkansas Basin Implementation Plan and will restore 32,560 acre-feet of storage. Water storage in the reservoir also has an important non-consumptive use that enhances 5,174 acres of wildlife and waterfowl habitat in the Adobe Creek Reservoir State Wildlife Area, which is one of the most popular recreation areas in southeast Colorado. When there is water in the reservoir it provides excellent opportunities for hunting, fishing, camping, hiking, and boating within this State Wildlife Area. The reservoir also has the potential to provide habitat for the Interior Least Tern, a federally listed endangered species, and the federally threatened Piping Plover.

Issues/Additional Needs: No issues or additional needs have been identified.

Eligibility Requirements: The application meets requirements of all eligibility components: General Eligibility, Entity Eligibility, Water Activity Eligibility, and Eligibility Based on Match Requirements.

Evaluation Criteria: This activity has undergone review and staff has determined it satisfies the Evaluation Criteria outlined in Colorado's Water Plan, Section 9.4. Please refer to Basin Roundtable Chair's Recommendation Letter and the Application for a detailed response.

<u>Funding Source</u>	<u>Cash</u>	<u>In-Kind</u>	<u>Total</u>
CWCB Water Project Loan	\$8,100,000	\$0	\$8,100,000
Subtotal Matching Funds	\$8,100,000	\$0	\$8,100,000
WSRF Arkansas Account	\$100,000		\$100,000
WSRF Statewide Account	\$1,000,000		\$1,000,000
Total Project Costs	\$9,200,000	\$0	\$9,200,000

CWCB Loan Program

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. The Company qualifies for an agricultural interest rate of 1.75% for a 30-year term. (Share ownership is over 99% agricultural and less than 1% commercial and municipal, so the blended interest rounds down to the agricultural rate.) The Company is requesting a 40-year term, so the interest rate is increased by 0.25% to 2.0%. Because the reservoir is restricted, the interest rate is then reduced by 0.5%. All interest rate evaluations are per CWCB Financial Policy #7 (Lending Rate Determination).

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	\$9,200,000
WSRF Grant	\$1,100,000
CWCB Loan Amount	\$8,100,000
CWCB Loan Amount (Including 1% Service Fee)	\$8,181,000
CWCB Annual Loan Payment	\$273,467
CWCB Annual Loan Obligation (1 st Ten Years)	\$300,814
Number of Shares	93,989
Annual Obligation per Share	\$3.20
Current Assessment per Share	\$29.00
Future Assessment per Share	(No Change) \$29.00
Cost per AF of recovered storage (32,560 AF)	\$283/AF

Loan/Grant Payment: Payments from the CWCB funds will be processed at the following percentages: 88% loan to 12% WSRF grant.

Creditworthiness: The Company's assessment history has been \$16.00/share in 2014, \$22.50/share in 2015, \$27.25/share in 2016, and \$29/share in 2017.

The Company has an existing CWCB loan for the Replacement of Horse Creek Flume project as summarized in Table 4. It was substantially completed in 2016 and is in good standing.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
CWCB (CT2016-1987)	\$1,542,496	\$1,499,256	\$70,264	2044	Assessment revenues and Horse Creek Flume

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Past 3 Years ⁽¹⁾	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	126% (strong) \$2.4M/\$1.9M	109% (average) \$2.4M/\$2.2M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	N/A	132% (strong) (\$2.4M-\$1.9M) \$378K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	68% (average) \$1.3M/\$1.9M	59% (average) \$1.3M/\$2.2M
Annual Operating Cost per Acre-Foot (221,000 AF) weak: >\$20 - average: \$10 - \$20 - strong: <\$10	\$8.60 (strong) \$1.9M/221,000 AF	\$9.95 (strong) \$2.2M/221,000 AF

(1) Past years financial ratios were based on 2014, 2015, and 2016. Repayment on the Horse Creek Flume project began April 1, 2017; therefore was not included in the Past 3 Years ratios.

Collateral: Security for this loan will be a pledge of assessment revenues back by a rate covenant and the Project itself (Adobe Creek Dam outlet works). This security is in compliance with the CWCB Financial Policy #5 (Collateral).

cc: Jerred Hoffman, Superintendent, Fort Lyon Canal Company
Amy Van Horn, Fort Lyon Canal Company
Jennifer Mele, Colorado Attorney General's Office

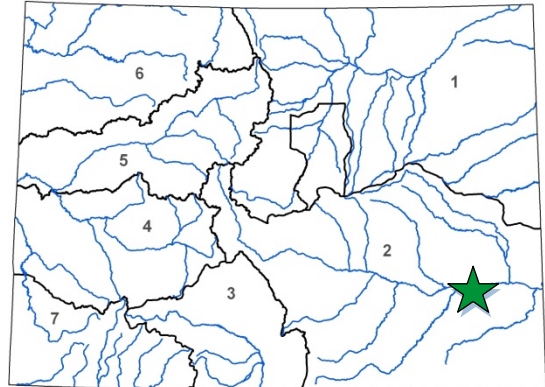
Attachment: Water Project Loan Program - Project Data Sheet



Adobe Creek Dam Rehabilitation

Fort Lyon Canal Company
September 2017 Board Meeting

L O A N D E T A I L S	
Project Cost:	\$9,200,000
CWCB Loan (with Service Fee):	\$8,209,381
Loan Term and Interest Rate:	40 years @ 1.50%
Funding Source:	WSRF & Severance Tax Perpetual Base Fund
B O R R O W E R T Y P E	
Agriculture	Municipal Commercial
99.1%	<1% Low - TBD% Mid -0% High <1%
P R O J E C T D E T A I L S	
Project Type:	Dam Rehabilitation
Average Annual Diversions:	221,000 AF
Recovered Storage:	32,560 AF
Preserved Storage:	81,692 AF



L O C A T I O N	
County:	Bent
Water Source:	Arkansas River
Drainage Basin:	Arkansas
Division:	2 District: 17

Adobe Creek Reservoir (also known as Blue Lake) is owned by the Fort Lyon Canal Company. The dam is a 32-foot-high, high hazard dam that impounds approximately 77,400 acre-feet of active storage and 4,292 acre feet of dead storage. The water is used to irrigate approximately 93,000 acres of land in Bent, Otero, and Prowers County.

A storage restriction was issued by the Dam Safety Branch of the Office of the State Engineer on May 5, 2017 due to adverse seepage conditions in the dam's foundation and deteriorated conditions in the 112-year-old, vitrified clay outlet works. Through this loan, the Company intends to design and construct new outlet works and seepage control systems in Adobe Creek Dam to regain the approximately 32,560 acre-feet of storage that was lost due to the storage restriction. The project will also be funded by a \$100,000 Water Supply Reserve Fund (WSRF) Arkansas Basin grant and a \$1,000,000 Statewide WSRF grant. Construction is expected to begin in late 2018.

Outlet works at Adobe Creek Dam

