



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

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F (303) 866-4474

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

DATE: September 20-21, 2017 Board Meeting

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

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

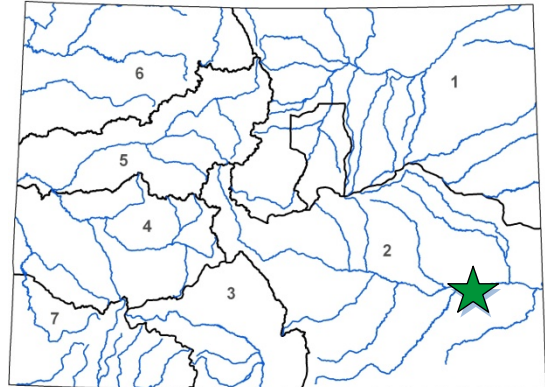
Attachment: Water Project Loan Program - Project Data Sheet



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

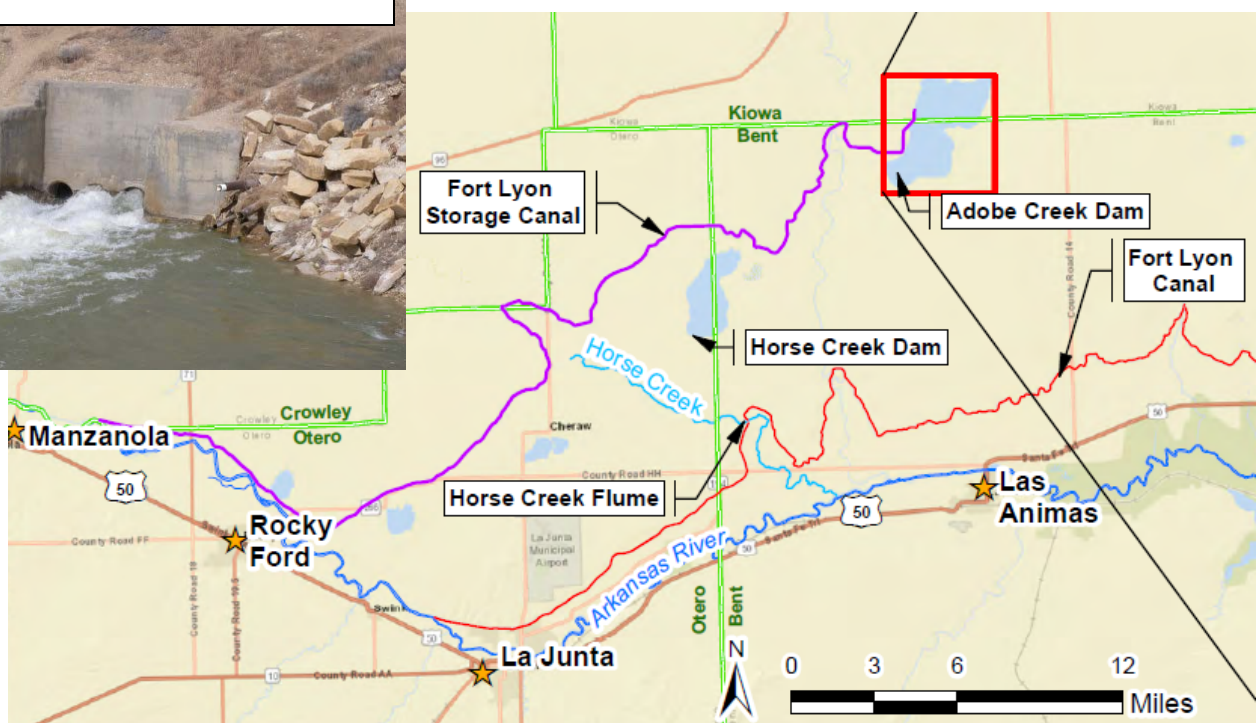
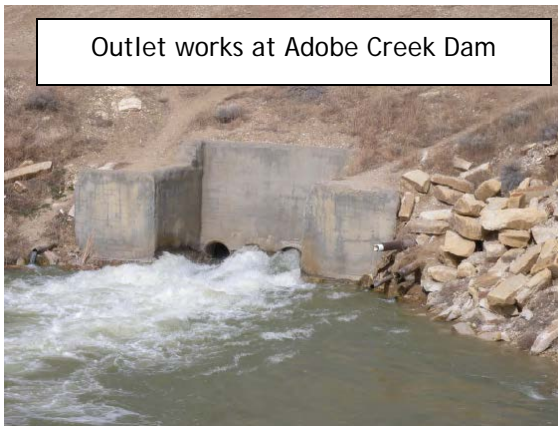


L O C A T I O N	
County:	Bent
Water Source:	Arkansas River
Drainage Basin:	Arkansas
Division:	2 District: 17

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



Arkansas Basin Roundtable

July 25, 2017

Via Electronic Mail: ben.wade@state.co.us

Mr. Ben Wade
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Re: Water Supply Reserve Fund Grant Application: Adobe Creek Dam Rehabilitation

Dear Ben:

At its July 12, 2017 meeting, the Arkansas Basin Roundtable (ABRT) approved the Adobe Creek Dam Rehabilitation grant application for \$100,000 in Basin Funds and \$1,000,000 in Statewide Funds. There were no dissenting opinions expressed in the consensus decision. However, the approval was based on the recommendation that the Applicant wait to contract with the State until after January 1, 2018, unless the Arkansas Basin Roundtable Funds are adequate to fund this application at an earlier date. The Applicant is aware of this recommendation.

Regarding the Colorado Water Plan, the Adobe Creek Dam Rehabilitation directly supports Objective E., Storage: *"Prioritize grants and loans to support the implementation of BIP-identified multipurpose projects and methods, taking into consideration locally identified geographic and seasonal gaps."* and Objective F. Watershed Health, Environment, and Recreation: Protect Healthy Environments: *"Understand, protect, maintain, and improve conditions of streams, lakes, wetlands, and riparian areas to promote self-sustaining fisheries and functional riparian and wetland habitat to promote long-term resiliency."* Adobe Creek Reservoir is an important habitat for endangered species as well as a regional, recreational amenity.

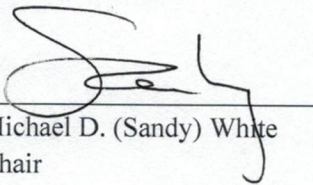
Finally, the Arkansas Basin Implementation Plan Executive Summary includes a policy statement:

"The preservation of irrigated agriculture in the Arkansas Basin shall be given a high priority in the state water plan. It is too important to tourism, the preservation of food production, recreation, the environment and the health and well-being of our citizens as well as the economy of the State of Colorado."

The Adobe Creek Dam Rehabilitation Project is both a critical element supporting irrigated agriculture and a demonstration of that policy statement in action.

Should you have any questions or concerns, please feel free to contact me either by telephone, 719-742-6164, or by email, sandy@white-jankowski.com.

With warm regards



Michael D. (Sandy) White
Chair

Copy via email:

Applicant

ABRT Executive Committee



Last Update: July 28, 2017

Colorado Water Conservation Board

Water Supply Reserve Fund Grant Application

Instructions

All WSRF grant applications shall conform to the current [2016 WSRF Criteria and Guidelines](#).

To receive funding from the WSRF, a proposed water activity must be approved by a Roundtable(s) **AND** the Colorado Water Conservation Board (CWCB). The process for Roundtable consideration and recommendation is outlined in the 2016 WSRF Criteria and Guidelines. The CWCB meets bimonthly according to the schedule on page 2 of this application.

If you have questions, please contact the current CWCB staff Roundtable liaison:

Arkansas

Ben Wade
ben.wade@state.co.us
303-866-3441 x3238

Gunnison | North Platte | South Platte | Yampa/White

Craig Godbout
craig.godbout@state.co.us
303-866-3441 x3210

Colorado | Metro | Rio Grande | Southwest

Megan Holcomb
megan.holcomb@state.co.us
303-866-3441 x3222

WSRF Submittal Checklist (Required)

	I acknowledge this request for funding was recommended for CWCB approval by the sponsoring Basin Roundtable(s).
	I acknowledge I have read and understand the 2016 WSRF Criteria and Guidelines .
	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract . ⁽¹⁾
Exhibit A	
	Statement of Work ⁽²⁾ (Word – see Exhibit A Template)
	Budget & Schedule ⁽²⁾ (Excel Spreadsheet – see Exhibit A Template)
	Letters of Matching and/or Pending 3 rd Party Commitments ⁽²⁾
Exhibit C	
	Map ⁽²⁾
	Photos/Drawings/Reports
	Letters of Support
	Certificate of Insurance ⁽³⁾ (General, Auto, & Workers' Comp.)
Contracting Documents	
	Certificate of Good Standing ⁽³⁾
	W-9 ⁽³⁾
	Independent Contractor Form ⁽³⁾ (If applicant is individual, not company/organization)
	Electronic Funds Transfer (ETF) Form ⁽³⁾

(1) Click "Grant Agreements". For reference only/do not fill out or submit/required for contracting

(2) Required with application if applicable.

(3) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

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Schedule		
CWCB Meeting	Application Submittal Dates	Type of Request
January	December 1	Basin Account; BIP
March	February 1	Basin/Statewide Account; BIP
May	April 1	Basin Account; BIP
July	June 1	Basin Account; BIP
September	August 1	Basin/Statewide Account; BIP
November	October 1	Basin Account/BIP

Desired Timeline	
Desired CWCB Hearing Month:	September 2017
Desired Notice to Proceed Date:	October 1, 2017

Water Activity Summary		
Name of Applicant	Fort Lyon Canal Company	
Name of Water Activity	Adobe Creek Dam Rehabilitation	
Approving Roundtable(s)	Basin Account Request(s) ⁽¹⁾	
Arkansas Basin	\$100,000	
Basin Account Request Subtotal	\$100,000	
Statewide Account Request ⁽¹⁾	\$1,000,000	
Total WSRF Funds Requested (Basin & Statewide)	\$1,100,000	
Total WSRF Grant Costs (Additional project funds through CWCB Construction Program Loans)	\$1,100,000	

(1) Please indicate the amount recommended for approval by the Roundtable(s)



Last Update: July 28, 2017

Grantee and Applicant Information	
Name of Grantee(s)	Fort Lyon Canal Company
Mailing Address	750 Bent Avenue, Las Animas, Colorado
FEIN	84-0579583
Grantee's Organization Contact ⁽¹⁾	Amy Van Horn
Position/Title	Water Master
Email	flccinfo@flcc.net
Phone	719-456-0720
Grant Management Contact ⁽²⁾	Connie Harris
Position/Title	Bookkeeper
Email	Connie@flcc.net
Phone	719-456-0720
Name of Applicant (if different than grantee)	
Mailing Address	
Position/Title	
Email	
Phone	

(1) Person with signatory authority

(2) Person responsible for creating reimbursement invoices (Invoice for Services) and corresponding with CWCB staff.

Description of Grantee
Provide a brief description of the grantee's organization (100 words or less).
<p>The Fort Lyon Canal Company is a Colorado Mutual Ditch Company and a non-profit Corporation organized under the laws of the State of Colorado. The Fort Lyon Canal Company was incorporated in 1897, and is governed by five Directors that meet monthly. The offices of the company are located in Las Animas, Colorado. The Fort Lyon Canal is 113 miles long, and lies in three counties: Otero, Bent, and Prowers. Approximately 93,000 acres are irrigated each year. A separate Storage Canal provides water to two off-channel storage reservoirs: Horse Creek and Adobe Creek (Blue Lake).</p>



Last Update: July 28, 2017

Type of Eligible Entity (check one)	
	Public (Government): municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
	Public (Districts): authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises
X	Private Incorporated: mutual ditch companies, homeowners associations, corporations
	Private Individuals, Partnerships, and Sole Proprietors: are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.
	Non-governmental organizations: broadly, any organization that is not part of the government
	Covered Entity: as defined in Section 37-60-126 Colorado Revised Statutes

Type of Water Activity (check one)	
	Study
X	Implementation

Category of Water Activity (check all that apply)		
X	Nonconsumptive (Environmental)	
X	Nonconsumptive (Recreational)	
X	Agricultural	
	Municipal/Industrial	
	Needs Assessment	
	Education & Outreach	
X	Other	Explain: Arkansas Basin Compact Maintenance, Colorado Water Plan

Location of Water Activity	
Please provide the general county and coordinates of the proposed activity below in decimal degrees . The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Countries	Bent, Kiowa
Latitude	38.234583
Longitude	103.278692

Last Update: July 28, 2017

Water Activity Overview

Please provide a summary of the proposed water activity (200 words or less). Include a description of the activity and what the WSRF funding will be used for specifically (e.g. studies, permitting, construction). Provide a description of the water supply source to be utilized or the water body affected by the activity. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, area of habitat improvements. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, and Schedule.

This activity is the rehabilitation of Adobe Creek Dam, which is a vital component of the Fort Lyon Canal Company's (FLCC) water supply system. A storage restriction order was issued by the Colorado Division of Water Resources on May 5, 2017 due to adverse seepage conditions in the dam's foundation and deteriorated conditions in the dam's 112-year-old, vitrified clay outlet works. The project includes the design and construction of a new outlet works and seepage control systems in Adobe Creek Dam to regain the approximately 32,860 acre-feet of storage that was lost due to the storage restriction.

Adobe Creek Dam is a 32-foot-high, high hazard embankment dam that impounds approximately 77,400 acre-feet of water that is used to irrigate approximately 93,000 acres of land in Bent, Otero, and Prowers County. In addition, an island in the reservoir provides wildlife and waterfowl, including habitat for the federally endangered Least Tern and federally threatened Piping Plover. In addition, the reservoir provides significant recreation opportunities for the Adobe Creek State Wildlife Area, administered by Colorado Parks and Wildlife. The reservoir is also important to maintaining compact compliance in the Arkansas Basin. If the FLCC chooses to raise the dam as part of the project, there is the potential to provide at least 10,000 acre-feet of additional storage in the Arkansas Basin to help implement the Colorado Water Plan.

Measurable Results

To catalog measurable results achieved with WSRF funds please provide any of the following values.

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
77,339	Existing Storage Preserved or Enhanced (acre-feet)
	Length of Stream Restored or Protected (linear feet)
	Efficiency Savings (indicate acre-feet/year OR dollars/year)
5,147	Area of Restored or Preserved Habitat (acres)
X	Other Explain: Wildlife and waterfowl habitat protection in an island in the reservoir. Maintain recreation use at the reservoir. Help ensure Arkansas Basin compact compliance.

Last Update: July 28, 2017

Water Activity Justification

Provide a description of how this water activity supports the goals of [Colorado's Water Plan](#), the most recent [Statewide Water Supply Initiative](#), and the respective [Roundtable Basin Implementation Plan and Education Action Plan](#)⁽¹⁾. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers).

For applications that include a request for funds from the Statewide Account, the proposed water activity shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan criteria for state support (CWP, Section 9.4, pp. 9-43 to 9-44;) (Also listed pp. 4-5 in [2016 WSRF Criteria and Guidelines](#)).

Dam safety evaluations of Adobe Creek Dam completed in January of 2017 concluded that there are higher than acceptable seepage exit gradients in a continuous sand layer identified 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 Colorado State Engineer ordered the reservoir 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 almost 33,000 acre-feet of storage volume.

Maintaining water storage in Adobe Creek Reservoir (Blue Lake) is important to the State of Colorado because it is truly multi-purpose storage. The reservoir provides over 77,000 acre-feet of critical drought protection for agriculture in southeast Colorado, which is important to up to 1,000 people in Bent, Otero, and Prowers Counties. 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 highest used 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. There is an island in the middle of the reservoir that provides excellent habitat for the Least Tern, which is a federally listed endangered species and the Piping Plover, a federally threatened species. This wildlife and waterfowl habitat could be lost if storage is lost in the reservoir. Water storage in the reservoir is also important to help the State of Colorado maintain its Arkansas Basin Compact requirements.

- From the Arkansas Basin Implementation Plan's (ArkBIP) Master Needs List: Replace aging infrastructure.
- From the ArkBIP Master Needs List: Dams in the state have been neglected for many years and maintenance has been deferred. These dams are in need of repair.
- ArkBIP Policy Statement: "The preservation of irrigated agriculture in the Arkansas Basin shall be given a high priority in the state water plan. It is too important to tourism, the preservation of food production, recreation, the environment and the health and well-being of our citizens as well as the economy of the State of Colorado."
- The reservoir storage restrictions already in place or the potential for dam failure could be a catastrophic loss to farmers and the agricultural economy of the State of Colorado making this project critical and time-sensitive. The loss of water storage would also dramatically affect wildlife and waterfowl habitat and recreation use in the Adobe Creek State Wildlife Area.



Last Update: July 28, 2017

Water Activity Justification

(1) Access Basin Implementation Plans or Education Action Plans from Basin drop down menu.

Matching Requirements: Basin Account Requests

Basin (only) Account grant requests require a 25% match (cash and/or in-kind) from the Applicant or 3rd party and shall be accompanied by a **letter of commitment** as described in the 2016 WSRF



Last Update: July 28, 2017

Matching Requirements: Basin Account Requests	
Criteria and Guidelines (submitted on the contributing entity's letterhead). Attach additional sheet if necessary.	
Contributing Entity	Amount and Form of Match (note cash or in-kind)
Fort Lyon Canal Company	\$25,000
Total Match	\$25,000
If you requested a Waiver to the Basin Account matching requirements, indicate the percentage you wish waived.	

Matching Requirements: Statewide Account Requests	
Statewide Account grant requests require a 50% match as described in the 2016 WSRF Criteria and Guidelines. A minimum of 10% match shall be from Basin Account funds (cash only). A minimum of 10% match shall be provided by the applicant or 3rd party (cash, in-kind, or combination). The remaining 30% of the required match may be provided from any other source (Basin, applicant, or 3 rd party) and shall be accompanied by a letter of commitment . Attach additional sheet if necessary.	
Contributing Entity	Amount and Form of Match (note cash or in-kind):
Arkansas Basin	\$100,000
WSRA Statewide Grant	\$1,000,000
Fort Lyon Canal Company (via CWCB Construction Program Loan)	\$8,100,000
Total Match	\$9,200,000
If you requested a Waiver to the Statewide Account matching, indicate % you wish waived. (Max 50% reduction of requirement).	

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Related Studies

Please provide a list of any related studies, including if the water activity is complimentary to or assists in the implementation of other CWCB programs.

1. Adobe Creek Dam March 2016 Uncontrolled Seepage Repair, April 7, 2017 Letter Report from W.W. Wheeler and Associates, Inc.
2. Adobe Creek Dam Outlet Conduit and Seepage Evaluation, January, 27, 2017 Letter Report from W.W. Wheeler and Associates, Inc.

Previous CWCB Grants

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order

- A. Horse Creek Flume Replacement
 - 1) Fort Lyon Canal Company
 - 2) Replacement of the Horse Creek Flume
 - 3) Arkansas Basin Roundtable
 - 4) September 2015 CWCB Meeting
 - 5) CWCB Contract Number: CTGG1 2016-1548
- B. Adobe Creek Dam Seepage Evaluation
 - 6) Fort Lyon Canal Company
 - 7) Adobe Creek Dam Outlet Conduit and Seepage Evaluation
 - 8) Arkansas Basin Roundtable
 - 9) September 2016 CWCB Meeting
 - 10) CWCB Contract Number: POGG1 PDAA 201700000489

Tax Payer Bill of Rights

The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

Not applicable



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Colorado Water Conservation Board	
Water Supply Reserve Fund	
<u>Exhibit A - Statement of Work</u>	
Date:	7/28/2017
Water Activity Name:	Adobe Creek Dam Rehabilitation Phase 1
Grant Recipient:	Fort Lyon Canal Company
Funding Source:	Arkansas Basin
Water Activity Overview: (Please provide brief description of the proposed water activity (no more than 200 words). Include a description of the overall water activity and specifically what the WSRF funding will be used for.	
<p>This activity is the rehabilitation of Adobe Creek Dam, which is a vital component of the Fort Lyon Canal Company's (FLCC) water supply system. A storage restriction order was issued by the Colorado Division of Water Resources on May 5, 2017 due to adverse seepage conditions in the dam's foundation and deteriorated conditions in the dam's 112-year-old, vitrified clay outlet works. Phase 1 of this project includes the design and construction of a new outlet works and seepage control systems in Adobe Creek Dam to regain the approximately 32,860 acre-feet of storage that was lost due to the storage restriction. The second phase of the project includes the design and construction of additional embankment fill and expanded primary spillways to enlarge the reservoir.</p> <p>Adobe Creek Dam is a 32-foot-high, high hazard embankment dam that impounds approximately 77,400 acre-feet of water that is used to irrigate approximately 93,000 acres of land in Bent, Otero, and Prowers County. In addition, an island in the reservoir provides habitat for the federally endangered least tern and federally threatened piping plover. In addition, the reservoir provides significant recreation opportunities for the Adobe Creek State Wildlife Area, administered by Colorado Parks and Wildlife. The reservoir is also important to maintaining compact compliance in the Arkansas Basin.</p>	
Objectives: (List the objectives of the project)	
<p>The objective of the first phase of the project is to rehabilitate Adobe Creek Dam so as to regain the 32,860 acre-feet of storage that was lost by the May 5, 2017 storage restriction that was issued by the Colorado Division of Water Resources. The Fort Lyon Canal Company may also choose to raise the dam as part of the project to increase the storage in the reservoir.</p>	

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Tasks
Provide a detailed description of each task using the following format:
<u>Task 1 - Engineering Design</u>
Description of Task:
<p>Final design for the Rehabilitation of Adobe Creek Dam includes completion of final design field investigations and the preparation of final design analysis; preparation of final design reports; and completion of construction drawings and technical specifications by the FLCC's engineer W. W. Wheeler & Associates, Inc. These documents will be submitted for review and approval by the Colorado Dam Safety Branch.</p>
Method/Procedure:
<ol style="list-style-type: none"> 1. Perform additional field investigations including subsurface drilling and materials sampling, and site surveying and mapping. 2. Complete final design analysis, preparation of design reports, and preparation of construction drawings and specifications. 3. Complete the design review and approval process with the Colorado Dam Safety Branch.
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)
Signed and stamped construction documents and design reports that have been approved for construction by the Colorado Dam Safety Branch.
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)
Copies of the approved design drawings, design report, and project specifications will be submitted to the CWCB.

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Tasks	
Provide a detailed description of each task using the following format:	
<u>Task 2 - Construction</u>	
Description of Task:	
<p>Permitting assistance, bidding, and construction costs for the Rehabilitation of Adobe Creek Dam. Permitting is anticipated to include as a minimum costs associated with obtaining a Nationwide 404 Maintenance Permit for the construction. Bidding costs shall include preparation of bidding documents, conducting a pre-bid site tour, and answering bidders questions. The construction costs shall include payments to the construction contractor for completed work. Construction costs shall also include construction observation and construction engineering by W. W. Wheeler & Associates, Inc. as required by Colorado Dam Safety Branch Rules.</p>	
Method/Procedure:	
<ol style="list-style-type: none"> 1. Preparation of owner's permit applications. As a minimum this would include consultation and preparation of project documents to obtain a Nationwide 404 Maintenance permit for the project. 2. Bid documents and forms will be prepared for soliciting bids from the construction contractor. 3. Monthly construction pay applications will be processed for construction work that is completed and in accordance with the approved Colorado Dam Safety Branch Drawings and Specifications. 4. Daily and monthly construction reports will be prepared by W.W. Wheeler & Associates, Inc. to document the construction and materials testing results during construction. This will also include completion of the final construction report and Record Drawings required for the Colorado Dam Safety Branch to accept the construction. 	
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)	
Stamped and signed Construction Completion Documents submitted to the Colorado Dam Safety Branch (SEO) for their review and approval per the SEO Rules and Regulations.	
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)	
Copies of the Construction Completion Documents and acceptance of the construction by the Colorado Dam Safety Branch will also be submitted to the CWCB.	

Budget and Schedule

Last Update: July 28, 2017

Budget and Schedule

Budget: This Statement of Work and Schedule shall be accompanied by a Budget ([link?](#)) that reflects the Tasks identified in the Statement of Work and Schedule and shall be submitted to CWCB in an excel format.

Schedule: This Statement of Work and Budget shall be accompanied by a Schedule ([link?](#)) that reflects the Tasks identified in the Statement of Work and Budget and shall be submitted to CWCB in an excel format.

Reporting Requirements

Reporting: The grantee shall provide their respective Roundtable(s) and the CWCB a Progress Report every 6 months, beginning from the date of executed contract. The Progress Report shall describe the status of the water activity, the completion or partial completion of the tasks identified in the Statement of Work including a description of any major issues that have occurred and any corrective action to address these issues. The CWCB may withhold reimbursement until satisfactory Progress Reports have been submitted.

Final Deliverable: At the completion of the water activity, the grantee shall provide their respective Roundtable(s) and the CWCB a final report on the grantee's letterhead that:

- Summarizes the water activity and how the water activity was completed
- Describes any obstacles encountered, and how these obstacles were overcome
- Explains the Proposed Budget versus the Actual Budget
- Confirms that all matching commitments have been fulfilled
- Includes photographs, summaries of meeting and engineering reports/design, if appropriate

The CWCB will withhold the last 10% of the entire water activity budget until the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the water activity and purchase order or contract will be closed without any further payment. Any entity that fails to complete a satisfactory Final Report and submit to CWCB within 90 days of the expiration of a purchase order or contract may be denied consideration for future funding of any type from CWCB.

**COLORADO**Colorado Water
Conservation Board

Department of Natural Resources

Colorado Water Conservation Board**Water Supply Reserve Fund
Exhibit A - BUDGET AND SCHEDULE****Date: 5/31/2017****Water Activity Name: Adobe Creek Dam Rehabilitation - Phase 1****Grantee Name: Fort Lyon Canal Company**

<u>Task No.</u>	<u>Description</u>	<u>Start Date</u> ⁽¹⁾	<u>End Date</u>	<u>Matching Funds</u> (cash & in-kind) ⁽²⁾	<u>WSRF Funds</u> (Basin & Statewide combined) ⁽²⁾	<u>Total</u>
1	Final Design	1/1/2018	6/15/2018	\$650,000	\$0	\$650,000
2	Permitting Assistance/ Bidding/ Construction	9/1/2018	4/15/2019	\$7,450,000	\$1,100,000 ⁽³⁾	\$8,550,000
						\$0
						\$0
						\$0
						\$0
						\$0
						\$0
						\$0
						\$0
						\$0
						\$0
						\$0
Total				\$8,100,000	\$1,100,000	\$9,200,000

(1) Start Date for funding under \$100K - 45 Days from Board Approval; Start Date for funding over \$100K - 90 Days from Board Approval.**(2)** Round values up to the nearest hundred dollars.**(3)** Grant funds will be available after January 21, 2018.

Reimbursement eligibility commences upon the grantee's receipt of a Notice to Proceed (NTP)

NTP will not be accepted as a start date. Project activities may commence as soon as the grantee enters contract and receives formal NTP if prior to the listed "Start Date"

CWCB will withhold the last 10% of the entire grant budget until the Final Report (Deliverable) is completed and accepted (2016 WSRF Criteria & Guidelines).

Additionally, the applicant shall provide a progress report every 6 months, beginning from the date of contract execution