STATE OF COLORADO

Colorado Water Conservation Board
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TO: Colorado Water Conservation Board Members

FROM: Ryan Edwards, P.E. RME
Kirk Russell, P.E., Chief KLR
Finance Section

DATE: May 4, 2012

SUBJECT: **Agenda Item 25a, May 15-16, 2012 Board Meeting**
Finance Section – New Construction Fund Loan
McDonald Ditch Company – McDonald Ditch Diversion and Headgate Replacement Project

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Introduction
The McDonald Ditch Company (Company) is applying for a loan for the McDonald Ditch Diversion and Headgate Replacement Project (Project). The purpose of the Project is to replace the existing diversion structure and headgate as part of phase two of the McDonald Ditch and Plaza Project (Plaza Project). The Plaza Project is a partnership between the Colorado Rio Grande Restoration Foundation and the Company. The total cost for the diversion structure replacement is estimated to be $650,000. The Company has requested a loan for $70,000 and has secured $580,000 from alternative funding sources. See the attached Project Data Sheet for a location map and Project summary.

Staff Recommendation
Staff recommends the Board approve a loan, from the Construction Fund, not to exceed $70,700 ($70,000 for Project costs and $700 for the 1% Loan Service Fee) to the McDonald Ditch Company for the McDonald Ditch Diversion and Headgate Replacement Project. The loan terms shall be 20 years at the agricultural rate of 2.50% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Background
The diversion structure and ditch headgate, located seven miles northwest of Monte Vista, Colorado, were constructed over forty years ago. They were poorly designed and are rapidly deteriorating, presenting a growing maintenance burden for the Company. The diversion structure was constructed from concrete rubble, dirt, wooden debris, and a bridge pier from the old Sevenmile Plaza Bridge. The diversion is inefficient, aging, and functions poorly. In addition, the positioning of the diversion is at an awkward angle to the river, creating a current that has battered

the banks, resulting in erosion and stability concerns. The headgate consists of a rusted single slide gate that is set back from the river and uses a section of an old metal fence as a screening device. Sediment and debris are prone to build up around the gate, decreasing its efficiency while increasing maintenance costs. Both the diversion and headgate were highlighted as rehabilitation priorities in a 2001 study titled "Rio Grande Headwaters Restoration Project." The study analyzed the condition of riparian habitats and structures along a 91-mile reach of the Rio Grande from the town of South Fork to Alamosa that triggered a more localized effort known as the Plaza Project.

The Plaza Project is a multi-phased project intended to restore and conserve the historical functions and vitality of the Rio Grande River. Phase I was a planning phase funded by a $40,000 grant from the Rio Grande Basin. It consisted of a five month collaborative scoping and feasibility study of potential biological and structural approaches to rehabilitate the stream banks, diversion structure, and wetlands within a 2.8-mile reach of the Rio Grande near Sevenmile Plaza. The "Plaza Plan" was finalized in August 2011 and includes a scope and preliminary design for improvements within the basin. Phase II of the Plaza Project is the first phase of implementation of the Plaza Plan, and includes final design and construction of three primary elements: the McDonald Ditch diversion and headgate replacement, channel and stream bank stabilization, and wetland reclamation.

Phase II of the Plaza Project has an estimated cost of $908,000, in which $650,000 (72%) is associated with the Project, and includes the final engineering design and construction of the new diversion and headgate. The remaining cost is for stream bank stabilization, wetland reclamation, monitoring, outreach and education and administrative expenses (not part of the Project). Proposed funding for Phase II of the Plaza Project is comprised of a variety of grants, CWCB loan, and in-kind services. Funding specifically targeted for Project related expenses consists of the following:

• CWCB Loan	$70,000
• WSRA Grant	$160,000[1]
• NRCS Environmental Quality Incentives Program (EQIP)	$150,000
• NRCS Colorado Partnership Program (CPP)	$50,000
• NRCS Cooperative Conservation Partnership Initiative (CCPI)	$200,000
• San Luis Valley Rural Electric (SLVREC)	$20,000[2]
Total Project Funding	$650,000

[1] *A WSRA Grant was approved in the amount of $295,000; $160,000 of which is allocated to this Project and $135,000 is for the remaining design, channel stabilization, wetland reclamation, monitoring, outreach and education, and administrative expenses related to Phase II of the Plaza Project.*

[2] *Provided in the form of in-kind services for the relocation of existing power poles.*

Loan Feasibility Study

The loan feasibility study, titled "The Plaza Project – Phase II: McDonald Ditch Implementation Project," was prepared by Heather Dutton, Coordinator, Rio Grande Headwaters Restoration Project (RGHRP). Technical support was provided by Laurie Clark, P.E., Natural Resources Conservation Service (NRCS). Additional support was provided by James Hart, President, McDonald Ditch Company. The study was prepared in accordance with CWCB guidelines and includes preliminary engineering and an engineer's estimate of probable cost that were used in determination of the total Project cost.

McDonald Ditch Company

The Company was incorporated as a mutual irrigation ditch company in 1921. The Company diverts water from the Rio Grande at the Sevenmile Plaza Bridge, located five miles north and seven miles west of the town of Monte Vista. The irrigation system is approximately 2.5 miles long and services eight shareholders, totaling 14.4 shares, for purposes of irrigating approximately 1,320 acres.

The Company is governed by a three-member board of directors and generates revenues through annual shareholder assessment dues. The board is responsible for managing the operation and maintenance responsibilities of the ditch and has the authority to restrict water deliveries on delinquent shares. Shareholder approval is required for assessment increases and for the Company to take on debt.

Water Rights

The Company is located in the Rio Grande River Basin, Water District 20. The Company owns two McDonald Ditch water rights, totaling 14.4 cfs, which it diverts from the Rio Grande. On average, the Company diverts approximately 5,018 AF annually. Table 1 provides a summary of the water rights.

TABLE 1: PROJECT WATER RIGHTS

Name	Case No.	Adjudication Date	Appropriation Date	Amount	Use
McDonald Ditch #11	CA0493	May 1, 1896	May 1, 1872	13.4 cfs	Irrigation
McDonald Ditch #18	CA0554	May 1, 1896	May 31, 1873	1.0 cfs	Irrigation
			Total	**14.4 cfs**	

Project Description

The objective of this Project is to replace the deteriorating and inefficient McDonald Ditch diversion structure and headgate as a part of Phase II of the Plaza Project. The NRCS performed preliminary surveys of the project elements and developed initial design and cost estimates for a variety of alternatives. Diversion alternatives consisted of a concrete diversion, steel and grouted rock diversion, hybrid rock and concrete diversion, and relocation of the headgate upstream of the existing diversion; and headgate replacement options included a wide range of electronic and manual devices. The following alternatives were selected:

Diversion Structure: A hybrid rock and concrete diversion structure was selected. The concrete portion will be adjacent to the headgate and extend half way across the river. The rocks will comprise the other half of the dam and include a series of drop structures, allowing for fish and boat passage. The diversion will have a sluice to move sediment and debris past the headgate. The angle of the diversion will be altered to extend perpendicularly across the river at its most narrow point, preserving channel and streambank stability. This alternative was selected on its ability to greatly improve diversion efficiency and reduced impacts on riparian habitat.

Headgate: A two-gate concrete headgate structure was selected. The gates will be in series, with a manual gate closest to the river and a solar-powered automated gate immediately downstream. The manual gate will control flows from the river, protecting the automated gate from ice and freezing in winter months. The automated gate will regulate ditch flows during the irrigation season, improving diversion accuracy and accounting.

Should loan funding permit, the Company will make minor repairs of cracked panels along the existing concrete lined ditch.

The final engineering design for the Plaza Project – Phase II is expected to be complete by September 2012, with construction of the diversion and headgate to commence in November. Replacement of the diversion and headgate is expected to take up to four months to complete. The remainder of the construction phase of the Plaza Project – Phase II is expected to extend through 2013. Table 2 provides a summary of the costs related to the Project.

TABLE 2: TOTAL PROJECT COST SUMMARY

Task	Cost
Construction – Diversion Dam	$427,500
Construction - Headgate	$222,500
Total	**$650,000**

Note: Engineering is provided by NRCS in the form of in-kind services.

Financial Analysis

The Company qualifies for an agricultural interest rate of 2.50% for a 20-year term (reduced from a 2.75% agricultural rate for a 30-year term). Table 3 provides a summary of the financial criteria of the loan request.

TABLE 3: PROJECT FINANCIAL SUMMARY

Total Project Cost	$650,000
Additional Funding Sources	$580,000
WSRA Grant	*$160,000*
EQIP (from NRCS)	*$150,000*
CPP (from NRCS)	*$50,000*
CCPI (from NRCS)	*$200,000*
SLVREC	*$ 20,000*
CWCB Loan Amount	$70,000
CWCB Loan Amount (including 1% Service Fee)	$700
CWCB Annual Loan Payment	$4,535
CWCB Loan Obligation (including 10% debt reserve funding)	$4,989
Number of Shares	14.4
Current Assessment (per Share)	$500
Annual Cost of Project (per Share)	$346

CWCB will disburse funds at a rate of no greater than 90% of invoice amount for construction activities related to the Project, up to the approved limit of $70,000.

Creditworthiness:

The Company generates revenue from annual shareholder assessments, currently set at $500 per share. The Company has no outstanding debt and a high ratio, relative to other irrigation ditch companies, of cash reserves to current expenses. The majority of the current assessments are used to cover diversion and headgate maintenance and bolster cash reserves in anticipation of this Project. This project is expected to significantly reduce annual maintenance expenses; thereby,

strengthening the Company's ability to cover the CWCB debt obligation with minimal impact on current assessment rates. Table 4 provides a summary of the financial ratios of the loan request.

TABLE 4: FINANCIAL RATIOS

Financial Ratio	2010 - 2011	Future w/ Project
Operating Ratio (operating revenues/operating expenses) weak: <100% - average: 100% - 120% - strong: >120%	110% (average) $8.7K/$7.9K	106% (average) $13.7K/$12.9K[1]
Debt Service Coverage Ratio (total eligible revenues-operating expenses)/total debt service weak: <100% - average: 100% - 120% - strong: >120%	No Current Debt	116% (average) ($13.7K-$7.9K)/$5.0K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	176% (strong) $13.9K/$7.9K	108% (strong) $13.9K/$12.9K
Annual Operating Cost per Acre-Foot (based on 5,018 AF) weak: >$20 - average: $10 - $20 - strong: <$10	$1.58 (strong) $7.9K/5,018 AF	$2.58 (strong) $12.9K/5,018 AF

[1] *The future operating ratio with Project includes a $346/share assessment increase; however, it is anticipated that assessment increases, if needed, will be significantly lower based on a reduction of annual maintenance expenses.*

Collateral: As security for the loan, the Company will pledge its assessment revenues backed by a rate covenant and the Company's water rights included in Table 1. This is in compliance with the CWCB Financial Policy #5 (Collateral).

The pledge and covenant are contractual provisions requiring the Company to pay its CWCB debt obligation from assessment revenues; and requires the Company to set its assessment rates sufficient to fund its debt obligation, in addition to operation and maintenance expenses.

cc: James Hart, President, McDonald Ditch Company
Susan Schneider, AGO
Peter Johnson, AGO

Attachment: Water Project Loan Program – Project Data Sheet

Water Project Loan Program - Project Data

Borrower: The McDonald Ditch Company

County: Rio Grande

Project Name: McDonald Ditch Diversion and Headgate Replacement Project

Project Type: Ditch Rehabilitation

Drainage Basin: Rio Grande, District 20

Water Source: Rio Grande River

Total Project Cost: $650,000 (Construction) Engineering provided by NRCS

Funding Source: Construction Fund

Type of Borrower: Agricultural

Avg. Annual Diversion: 5,018 AF

CWCB Loan: $70,700 (incl. 1% loan fee)

Interest Rate: 2.50% **Term:** 20 years (reduced from a 2.75% 30-year ag. rate)

The existing diversion structure and ditch headgate, constructed over forty years ago, were poorly designed, are rapidly deteriorating, and present a growing maintenance burden for the Company. The diversion structure was constructed from concrete rubble, dirt, wooden debris, and an old bridge pier. The diversion is inefficient, aging, and functions poorly. The headgate consists of a rusted single slide gate that is set back from the river and uses a section of an old metal fence as a screening device. Sediment and debris are prone to build up around the gate, decreasing its efficiency while increasing maintenance costs. Both the diversion and headgate were highlighted as rehabilitation priorities in a study performed in 2001. The study analyzed the condition of riparian habitats and structures along a 91-mile reach of the Rio Grande from the town of South Fork to Alamosa that triggered a more localized effort known as the Plaza Project. This project provides an environmentally sensitive solution for increasing the efficiency of the ditch with a less maintenance intensive diversion and headgate. Construction is scheduled to begin in November of 2012.

Location Map