

# STATE OF COLORADO

## Colorado Water Conservation Board

### Department of Natural Resources

1313 Sherman Street, Room 721  
Denver, Colorado 80203  
Phone: (303) 866-3441  
Fax: (303) 866-4474  
www.cwcb.state.co.us



November 19, 2010

Mr. Wayne Harding  
Huerfano-Cucharas Irrigation Company  
2000 South Colorado Blvd, Annex #200  
Denver, CO 80222

Bill Ritter, Jr.  
Governor

Mike King  
DNR Executive Director

Jennifer L. Gimbel  
CWCB Director

Re: Cucharas Dam Rehabilitation Project  
Phase I Contract Number C150313

Dear Mr. Harding:

I am pleased to inform you that on November 16, 2010 the Colorado Water Conservation Board approved your loan request for the Cucharas Dam Rehabilitation Project as described in the application and approved Loan Feasibility Study titled "*Cucharas Dam Rehabilitation CWCB Loan Request*," dated October 2010. The Board approved a loan not to exceed \$9,999,000 (\$9,900,000 for project costs and \$99,000 for the 1% Loan Service Fee). The loan shall be contracted in two phases. Phase I will be \$218,160 (\$216,000 for project costs and \$2,160 for the 1% Loan Service Fee) for the engineering and construction related to the spillway modification phase of the Project. Phase I loan terms shall be 20 years at the agricultural interest rate of 2.5% per annum. Phase II will be \$9,780,840 (\$9,684,000 for project costs and \$96,840 for the 1% Loan Service Fee) for the engineering and construction costs related to the RCC dam construction (or existing dam rehabilitation) phase of the Project. Phase II loan terms shall be 20 years at the commercial interest rate of 6.0% per annum. I have attached a copy of the updated Board memo dated November 19, 2010, that includes the Board's approval.

After the Board approves a loan there are a few steps that remain in the loan process including:

A) Board Approval Conditions: Requirements prior to contracting or disbursements.

*The CWCB will not enter into a contract for Phase II until an acceptable Loan Feasibility Study is submitted and a follow-up presentation is made to the Board, no later than the November 2011 Board meeting. The Board may impose additional loan conditions for Phase II at the follow-up presentation.*

B) Contracting: An approved contract must be in place before funds can be disbursed. Vaughn McWilliams will initiate the loan contracting process for this project. When all of the contract conditions are met and the contract is executed the Company may request loan funds to cover eligible project expenses.

You can contact Vaughn at (303) 866-3441 x 3227 regarding the requirements. The Phase I contract will include the following provision:

*The CWCB will not disburse funds until the SEO has approved Phase I of the Project.*

- C) Design/Construction: You must adhere to the CWCB Design and Construction Administration Procedures. Kirk Russell will contact you regarding this phase of the process. Kirk will make construction site visits, which will be the basis of pay estimates for disbursement of your loan funds. You can contact Kirk at his desk at (303) 866-3441 x 3232 or cell phone (303) 956-5653.

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

Sincerely,



Tim Feehan, P.E., Chief  
Finance Section  
Colorado Water Conservation Board



Anna Mauss, P.E.  
Finance Section  
Colorado Water Conservation Board

Attachment: Updated Board Memo

E-mail Copy (Including Attachments)

Reed Dils, Board Member - Arkansas River Basin  
Patricia DeChristopher, AGO  
CWCB Finance Section Staff

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Bill Ritter, Jr.  
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Jennifer L. Gimbel  
CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Anna Mauss, P.E. *AM*  
Tim Feehan, P.E., Chief *TF*  
Finance Section

DATE: November 5, 2010 (Updated November 19, 2010)

SUBJECT: **Agenda Item 10a, November 15-17, 2010 Board Meeting**  
**Finance Section – New Project Loans**  
**Huerfano Cucharas Irrigation Company – Cucharas Dam Rehabilitation Project**

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### Introduction

The Huerfano-Cucharas Irrigation Company (Company) is requesting a loan from the CWCB in the amount of \$9,900,000 for the Cucharas Dam Rehabilitation Project (Project). The Cucharas Reservoir (Reservoir) has a storage restriction and pending breach order from the State Engineer's Office (SEO). The Company is planning a two-phased approach to repair the dam. Phase I will be a spillway modification to allow a temporary reduced level of storage in the Reservoir. Phase II will be the construction of a new roller compacted concrete (RCC) dam downstream of the existing dam or rehabilitation of the existing dam, restoring the full capacity of the Reservoir. The total estimated cost of the Project (Phase I and Phase II) is \$26,983,000. This loan request is for 37% of the estimated Project cost. See attached Project Data Sheet for a location map and a project summary.

### Staff Recommendation (Staff approved Board recommendation November 16, 2010)

Staff recommends the Board approve a loan not to exceed \$9,999,000 (\$9,900,000 for project costs and \$99,000 for the 1% Loan Service Fee) to the Huerfano-Cucharas Irrigation Company for the Cucharas Reservoir Rehabilitation Project from the Construction Fund. The loan shall be contracted in two phases. Phase I will be \$218,160 (\$216,000 for project costs and \$2,160 for the 1% Loan Service Fee) for the engineering and construction related to the spillway modification phase of the Project. Phase I loan terms shall be 20 years at the agricultural interest rate of 2.5% per annum. Phase II will be \$9,780,840 (\$9,684,000 for project costs and \$96,840 for the 1% Loan Service Fee) for the engineering and construction costs related to the RCC dam construction (or

existing dam rehabilitation) phase of the Project. Phase II loan terms shall be 20 years at the commercial interest rate of 6.0% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Additional contract condition for Phase I: The CWCB will not disburse funds until the SEO has approved Phase I of the Project.

Additional approval conditions for Phase II: The CWCB will not enter into a contract for Phase II until an acceptable Loan Feasibility Study is submitted and a follow-up presentation is made to the Board, no later than the November 2011 Board meeting. The Board may impose additional loan conditions for Phase II at the follow-up presentation.

## **Background**

The Company owns and operates the Cucharas Reservoir (aka Cucharas No. 5 Dam), nearly 50 miles of ditches, and the Huerfano Valley Lake. The Reservoir is located in northeastern Huerfano County on the Cucharas River, approximately 16 miles northeast of the City of Walsenburg. The Reservoir supplies irrigation water to cultivated lands in southeast Pueblo County, north of the Huerfano River.

The dam is a 145-foot high rock fill dam that has undergone several enlargements since the original construction in 1914. The Reservoir (without the SEO restriction) has a capacity of 35,395 acre-feet to the spillway crest elevation of 5766.0 feet, gauge height 120.5 feet.

In May 1987, while the Reservoir was full to the spillway crest, the dam developed extensive seepage along the toe abutments of the dam. Immediate action was taken to lower the water level and avoid complete dam failure. It was discovered that the upstream concrete facing on the rock fill dam had failed and was allowing large quantities of seepage to flow through the embankment. The water surface was lowered by notching the spillway.

Portions of the concrete facing were repaired in 1987 and 1988; however, during initial filling, the Reservoir dam again began to seep and the Reservoir was drained to its present restricted gauge height of 100 feet or 7,500 acre-feet of storage. The storage restriction has remained in effect since 1988. The dam has performed adequately at the restricted level with only moderate increases in seepage flow at higher storage levels being recorded, but the spillway is inadequate and there remains uncertainty concerning the condition of the embankment and foundation.

Despite the SEO restriction, the Company did not repair the dam. Faced with a pending breach order, Company shareholders sought out a purchaser to buy Company shares and repair the dam and aging canal system.

In February 2010, Two Rivers purchased a controlling interest in the Company and changed the makeup of the five-member board. Two Rivers installed three board members, and two existing board members were retained. The new board immediately adopted resolutions for special assessments and set about developing plans for repairing and rebuilding of the dam.

Two Rivers is a publicly traded company, traded under the symbol TURV, and was incorporated in December 2002. Two Rivers' interests are in the reintroduction of agricultural production in the

Arkansas basin and in the development and distribution of water. Two Rivers also believes there is an opportunity to serve both Huerfano and Pueblo counties through the rehabilitation of the Reservoir.

Two Rivers is made up of two subsidiaries: Two Rivers Water, LLC and Two Rivers Farming LLC. Two Rivers Water, LLC holds the shares of the Huerfano-Cucharas Irrigation Company.

In 2010, Two Rivers Farming, LLC purchased 2,000 acres of previously irrigated farmland under the Reservoir and planted 500 acres of crops. Two Rivers Farming, LLC has contracted to purchase another 1,000 acres and expects to plant up to 2,000 acres of farmland in 2011. Over the next ten years, the farming operation is expected to increase to 15,000 acres.

With the new ownership, the Company immediately began making capital improvements for the first time in five decades including: laying new roads; installing new head, waste and lateral gates; repairing the diversion point and putting in new metering systems. All the improvements were paid for with increased assessments from Company shareholders. The Company also contracted with Applegate Group, LLC (Applegate) for plans to mitigate dam safety issues and GEI Consultants, Inc. (GEI) for plans to rehabilitate the Reservoir.

With guidance from Applegate and GEI, the Company is now planning a two-phased approach to rehabilitate the dam. The first phase involves lowering the spillway to provide public safety protection and still allow a restricted level of storage in the Reservoir while Phase II is developed. This will temporarily remove the SEO's breach order and allow for farming operations to continue until Phase II is constructed. Phase II will be the construction of a new RCC dam (or other selected alternative), allowing for full Reservoir storage.

### **Loan Feasibility Study**

Two Rivers, Applegate, and GEI collectively prepared the Loan Feasibility Study titled "*Cucharas Dam Rehabilitation CWCB Loan Request*," dated October 2010. The study outlines preliminary work for Phase I and Phase II of the Project. Phase I was prepared in accordance with the CWCB loan feasibility study guidelines and includes preliminary engineering design and cost estimates. Phase II did not meet CWCB standards; therefore, the Company will submit an updated feasibility study with more details and that information will be presented to the Board no later than the November 2011 Board meeting.

Additional studies that have been performed in recent years include:

1. Feasibility study by Applegate evaluating lowering the existing spillway to allow a reduced Reservoir storage level - completed in March 2009. (Note: A \$1,622,060 CWCB loan was approved for this project at the May 2009 board meeting but a contract was never signed. This May 2009 loan approval is recommended for deauthorization. See November 2010 Consent Agenda Item 2a.)
2. Feasibility study by URS Corporation evaluating replacing the existing dam with a new RCC downstream of the existing dam - completed in September 2006.
3. "Evaluation of Yield from Cucharas No. 5 Reservoir," dated December 2005 by Lytle Water Solutions, Bruce Lytle, P.E. with a supplement - completed in November 2006.

4. Storage capacity survey work - completed in October 2002 – Clyde B. Young & Co.

### **The Huerfano – Cucharas Irrigation Company**

The Company was organized in 1944 as a non-profit mutual ditch company. The Company was formed for the purpose of enhancing agriculture by delivering irrigation water to shareholders. The Company has the power to take on debt and to pledge collateral. Currently, there are five shareholders, with Two Rivers owning 91% of the Company. There are 5,932 shares assessed at \$72.25 per share. Assessments are voted on by the majority of shares at the annual meeting (or special assessment meeting). The Company may place a lien on delinquent stock payments and stop delivery of water and may sell delinquent stock in order to pay for back assessments.

### **Water Rights**

The Company has direct flow rights and reservoir storage rights as shown in Table 1:

**Table 1. Water Rights**

<b>Name</b>	<b>Amount</b>	<b>Adjudication Date</b>	<b>Priority Date</b>	<b>Decreed Use</b>	<b>Water Source</b>
Huerfano Valley Ditch	42 cfs	2/23/1898	2/2/1888	Irrigation	Huerfano River
Huerfano Valley Ditch	18 cfs	10/3/1921	2/23/1898	Irrigation	Huerfano River
Huerfano Lake	2,017 AF	2/23/1898	2/2/1888	Irrigation	Huerfano River
Cucharas Reservoir	31,958 AF (absolute)	10/3/1921	3/14/1906	Irrigation	Cucharas River
Cucharas Reservoir	35,404 AF (conditional)	10/3/1921	3/14/1906	Irrigation	Cucharas River

The average yield of the Reservoir is 6,800 AF. Based upon the Company's irrigation demands, the average delivery has been 3,000 AF.

### **Project Description**

#### **Phase I**

The purpose of Phase I of the Project is to prevent breach order from being imposed and to maintain the restricted level of storage in the Reservoir while the engineering and planning for Phase II are completed. This will allow for farming operations to continue in the interim. Phase I is only a temporary fix until the dam is either replaced or restored.

***Phase I - Alternative No. 1 – No-action:*** The no-action alternative has a significant cost associated with the breaching of the dam and effectively shows intent to abandon a viable and valuable storage right. This is an unacceptable alternative because of the high cost and no benefit associated with this action.

***Phase I - SELECTED ALTERNATIVE No. 2 - Lower the emergency spillway to allow storage at a reduced storage level:*** The selected alternative is to structurally lower the existing emergency spillway, temporarily limiting the reservoir storage capacity to a level that will safely pass the SEO required inflow design flood.

While there are significant structural issues with the present dam embankment that make permanent Reservoir storage at higher elevations not feasible, the dam has performed adequately for the past twenty years at the current restricted level of gauge height 100. The proposed modification of the existing spillway consists of removing the ogee crest down to the current rock foundation.

Phase I engineering is currently under way and construction is expected to take place between February and March of 2011.

**Table 2. Phase I Cost Estimate**

Engineering	\$20,000
Construction	\$200,000
Contingency	\$20,000
<b>TOTAL</b>	<b>\$240,000</b>

## **Phase II**

The purpose of Phase II of the Project is to design and implement a larger reservoir that will restore storage to the 40,000 AF level. The alternatives being considered by the Company are: rehabilitation of the existing dam or building a new RCC dam downstream. The selected alternative will depend on timing, economics, budget, and technical feasibility.

Two previous feasibility studies concluded that the RCC dam would likely be the most cost-effective solution. The estimated cost for a new RCC dam is \$26,743,000 for design and construction.

The Company cannot afford to complete Phase II on its own, so Two Rivers will guarantee the CWCB loan. Two Rivers will raise capital for the Phase II through its existing resources, new equity issued and additional financing. In order to pay back debt financing on Phase II, Two Rivers will be relying on revenue generated from current and future farming operations.

In addition, Two Rivers has entered into a memorandum of understanding with Petroglyph, a coal bed methane operator. Through the coal bed methane extraction, water is produced. Two Rivers believes it can treat the Petroglyph water naturally by introducing it into the surface water using the Company ditch and storage system. (Wright Water Engineers is currently studying this proposal.) This produced water will help Two Rivers expand its farming operation. (Bishop Brogden & Associates is currently evaluating the expected yield of the Petroglyph water. It is estimated to be around 9,500 AF annually.)

Additional Petroglyph water not needed for agricultural production will be used to serve the surrounding communities via the proposed Spanish Peaks Metropolitan District (District). The

District is in the formation process at this time. The service area will be within Huerfano County. The purpose of the District will be to provide retail water service to residential and commercial customers, and wholesale water to municipalities, counties, ditch companies, and private entities. The District's revenue will come from taxes and service fees.

In addition to securing funding to complete Phase II, working out the details of the water quality issues with the produced water, and forming the District, the Company must also acquire the land in front of the existing dam so that it can construct the new RCC dam (if that remains the preferred alternative).

Phase II schedule is proposed as follows:

- Engineering & SEO coordination: November 2010 through March 2011
- Environmental permitting: March 2011 through August 2011
- Contractor selection: January 2012 through March 2012
- Dam construction: April 2012 through August 2013

Given the complexity of the details that still need to be addressed in order to complete Phase II, staff is recommending that the CWCB sign two loan contracts, one for Phase I and another for Phase II. Before the Phase II contract is signed, the Company will submit a complete Loan Feasibility Study and staff will present the information to the Board. At that time, the Board will have the option to impose additional loan conditions on Phase II of the Project.

### Financial Analysis

Table 3 shows a summary of the financial aspects of the loan request. The Phase I interest rate will be the agricultural interest rate of 2.5% for a 20-year term per Financial Policy #7. (This is reduced from 2.75% for the standard 30-year term.) The Phase II interest rate will be the commercial interest rate of 6.0% for a 20-year term (also reduced by .25% from the 6.25% for a 30-year term).

**Table 3. Financial Summary**

	Phase I	Phase II
Total Project Cost	\$240,000	\$26,743,000
CWCB Loan Amount	\$216,000	\$9,684,000
CWCB Loan Amount (Including 1% Service Fee)	\$218,160	\$9,780,840
CWCB Loan Payment	\$13,994	\$852,738
CWCB Loan Payment (Including 10% Reserve)	\$15,394	\$938,012
Borrower Contribution (10% on Phase I, 68% on Phase II)	\$24,000	\$17,059,000
Previous Assessment per share (prior to Two Rivers purchases)	\$10	-
Current Assessment per share	\$72.25	-
Annual cost of loan per share	\$2.60	\$158

**Creditworthiness:** The Company currently has no debt. Repayment of Phase I of the loan will be accomplished utilizing shareholder assessments. Assessments were raised significantly after the Two Rivers purchase so that the previously mentioned system improvements could be funded.



**Table 4. Financial Ratios – Phase I**

Financial Ratio	Past 2 Years	Future
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	100% (Average) \$63K/63K	100% (Average) \$78K/78K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	N/A (No ex. debt service)	100% (Average) \$78-63K/15K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	52% (Average) \$34K/63K	43% (Weak) \$34K/78K
Annual Operating Cost per Acre-Foot (3,000 AF avg. delivery) weak: >\$20 - average: \$10 - \$20 - strong: <\$10	\$21/AF (Weak) \$63K/3K AF	\$26/AF (Weak) \$78K/3K AF

Note: These ratios are based on the past (pre-Two Rivers) assessments of \$10/share. The future condition ratios are based on an increase of \$2.60/share.

The Phase II financial ratios will be presented to the Board at a follow up meeting once more of the funding and project details are known.

**Collateral** - Security for the Phase I loan shall be the Company's pledge of assessment revenues backed by a rate covenant, annual financial reporting, and a first lien on the Company's water rights as identified in Table 1. An appraisal of the water rights was completed by Wright Water Engineers, Inc. The water rights were valued at \$9.3 million. Additional collateral, as required to cover the debt service, will be added to secure the Phase II loan. Phase II collateral will be addressed at the follow up presentation to the Board. The debt service will be guaranteed by Two Rivers. This is in compliance with CWCB Financial Policy #5 (Collateral).

#### **Staff Recommendation (Staff approved Board recommendation November 16, 2010)**

Staff recommends the Board approve a loan not to exceed \$9,999,000 (\$9,900,000 for project costs and \$99,000 for the 1% Loan Service Fee) to the Huerfano-Cucharas Irrigation Company for the Cucharas Reservoir Rehabilitation Project from the Construction Fund. The loan shall be contracted in two phases. Phase I will be \$218,160 (\$216,000 for project costs and \$2,160 for the 1% Loan Service Fee) for the engineering and construction related to the spillway modification phase of the Project. Phase I loan terms shall be 20 years at the agricultural interest rate of 2.5% per annum. Phase II will be \$9,780,840 (\$9,684,000 for project costs and \$96,840 for the 1% Loan Service Fee) for the engineering and construction costs related to the RCC dam construction (or existing dam rehabilitation) phase of the Project. Phase II loan terms shall be 20 years at the commercial interest rate of 6.0% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Additional contract condition for Phase I: The CWCB will not disburse funds until the SEO has approved Phase I of the Project.

Additional approval conditions for Phase II: The CWCB will not enter into a contract for Phase II until an acceptable Loan Feasibility Study is submitted and a follow-up presentation is made to the Board, no later than the November 2011 Board meeting. The Board may impose additional loan conditions for Phase II at the follow-up presentation.

cc: John McKowen, Two Rivers Water  
Susan Schneider, AGO  
Patricia DeChristopher, AGO

Attachment: Water Project Loan Program – Project Data Sheet

## CWCB Water Project Loan Program Project Data Sheet

**Borrower:** Huerfano-Cucharas Irrigation Co.

**County:** Pueblo/ Huerfano

**Project Name:** Cucharas Dam Rehabilitation

**Project Type:** Reservoir Rehabilitation

**Drainage Basin/District:** Arkansas / 16

**Water Source:** Cucharas River

**Total Project Cost:** \$26,983,000

**Funding Source:** Construction Fund

Phase I Total: \$240,000 Phase II Total: \$26,743,000

**Type of Borrower:** Agricultural (Phase I)  
Commercial (Phase II)

**Average Delivery:** 3,000 acre-feet

**New Storage:** 31,958AF (Restricted)

**Loan:** \$9,999,000 (Including 1% fee)

**Interest Rate:** 2.5% (I) & 6.0% (II) **Term:** 20 years

The Huerfano-Cucharas Irrigation Company (Company) owns and operates the Cucharas Reservoir and provides irrigation water to farmers in the Arkansas valley. The Irrigation Company was organized in 1944; however, 91% of the shares were recently purchased by Two Rivers. Two Rivers is in the process of reintroducing agricultural production to the area. In order to do this, the Cucharas dam must be repaired. The dam is a 145-foot high rock fill dam that has been under a SEO mandated storage restriction since 1988. The Company (with financial assistance from Two Rivers) plans on rehabilitating the dam, to restore the full storage capacity of the reservoir. The project will be completed in two phases. Phase I consists of lowering the existing spillway to pass the SEO required design flood for a restricted volume of storage. This will allow the agricultural production to continue while Phase II is developed. Phase II is to design and construct a larger reservoir that will restore storage up to 40,000 AF. The details of Phase II are still being finalized. The alternatives being considered are: a new roller compacted concrete dam to be built downstream of the existing dam or the existing dam will be rehabilitated. Other components of Phase II include the formation of a new District in the area and the introduction of water produced by coal bed methane production to be stored in the reservoir. A second presentation will be made to the Board to expand upon the Phase II details once they are finalized. Phase I construction is expected to be completed between February - March 2011 and Phase II design and construction will take place November 2010 – August 2013.

