

# STATE OF COLORADO

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## 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 21, 2011

Mr. Leonard Arnold  
Big Elk Meadows Association  
P.O. Box 440  
Lyons, Colorado 80540

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John W. Hickenlooper  
Governor

Mike King  
DNR Executive Director

Jennifer L. Gimbel  
CWCB Director

Re: Raw Water System Improvements Project  
Contract Number C150327

Dear Mr. Arnold:

I am pleased to inform you that on November 16, 2011 the Colorado Water Conservation Board approved your loan request for the Raw Water System Improvements Project as described in the application and approved Loan Feasibility Study titled "*A Loan Application For: Raw Water Projects*," dated September 27, 2011. The Board approved a loan not to exceed \$272,700 (\$270,000 for project costs and \$2,700 for the 1% Loan Service Fee). The loan terms shall be 30 years at an interest rate of 4.50% per annum. I have attached a copy of the updated Board memo dated November 21, 2011, 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) 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.
- B) Design/Construction: You must adhere to the CWCB Design and Construction Administration Procedures. Ryan Edwards has been assigned as the Project Manager for this project. Ryan will contact you regarding this phase of the process and he will make construction site visits, which will be the basis of pay estimates for disbursement of your loan funds. You can contact Ryan at (303) 866-3441 x 3234.

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

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kirk Russell'.

Kirk Russell, P.E., Chief  
Finance Section  
Colorado Water Conservation Board

A handwritten signature in blue ink, appearing to read 'Ryan Edwards'.

Ryan Edwards, P.E.  
Finance Section  
Colorado Water Conservation Board

Attachment: Updated Board Memo

E-mail Copy (Including Attachments)

Eric Wilkinson, Board Member – South Platte River Basin  
Peter Johnson, AGO  
CWCB Finance Section Staff

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CWCB Director

TO: Colorado Water Conservation Board Members

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

DATE: November 4, 2011 (Updated November 21, 2011)

SUBJECT: **Agenda Item 34b, November 15-16, 2011 Board Meeting**  
**Finance Section – New Project Loans**  
**Big Elk Meadows Association – Raw Water System Improvements Project**

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### Introduction

The Big Elk Meadows Association (Association) is applying for a loan for the Raw Water System Improvements Project (Project). The purpose of the Project is to perform three separate water system improvement tasks necessary to achieve compliance with the Association's augmentation decree and to ensure safe and reliable water service for residences in Big Elk Meadows, located in Boulder and Larimer counties. The loan request is for 90% of the estimated \$300,000 total cost of the Project. See the attached Project Data Sheet for a location map and project summary.

### Staff Recommendation (Board approved staff recommendation November 16, 2011)

Staff recommends the Board approve a loan, from the Construction Fund, not to exceed \$272,700 (\$270,000 for project costs and \$2,700 for the 1% Loan Service Fee) to the Big Elk Meadows Association for the Raw Water System Improvements Project. The loan terms shall be 30 years at a middle-income municipal rate of 4.50% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

### Background

Big Elk Meadows is fed from the West Fork of the Little Thompson River (West Fork), where five online reservoirs: Sunset Lake, Inbow Lake, Willow Lake, Mirror Lake and Meadow Lake (listed from upstream to downstream), are designed to collect and store raw water. The raw water is treated within the subdivision for potable use by its residents. The Association also owns shares of stock in the Boulder and Larimer County Irrigation and Manufacturing Company (B&L) which allows for storage in ISH Reservoir, located 18 miles east (downstream) of Big Elk Meadows, intended to augment flows for Big Elk Meadows.

The State Engineer's Office (SEO) performed an inspection of the Association's raw water system on November 7, 2008, and initiated an ongoing review of its water accounting practices in 2010. The SEO determined the outlet conduit from Meadow Lake Dam was collapsing and there was no way to control discharge flows. The SEO also determined that the Association has no accurate means to measure and control West Fork flows entering and leaving Big Elk Meadows, and is not in compliance with the terms of its 1995 decree regarding historic return flows. The SEO has required that the Association improve its raw water system and accounting protocol in order to function safely and in compliance with its decrees.

### **Loan Feasibility Study**

The loan feasibility study, titled "A Loan Application For: Raw Water Projects", dated September 27, 2011, was prepared by the Association. Technical assistance was provided by John Gauthiere, from Gauthiere Engineering, Inc., and Chuck Haines, from Wright Water Engineers, Inc. The study was prepared in accordance with CWCB guidelines, and includes preliminary engineering and a cost estimate used to establish total project cost.

### **Big Elk Meadows Association**

The Association is a nonprofit corporation, formed August 2, 1966, to serve the Big Elk Meadows subdivision, located 10 miles northwest of Lyons. The Association owns and maintains the raw water system, roadways and common space within Big Elk Meadows, in addition to the equipment necessary to operate and maintain these facilities. The treated water system serving the residences of Big Elk Meadows is owned by Big Elk Meadows Water Association (BEWA). Under the management of the Association, through a joint board of directors, BEWA operates the annual water treatment and distribution of up to 6.1 AF of drinking water.

The community includes 205 private lots and 163 residences distributed across 460 acres, and 198 acres of common space. Maximum build-out is not expected to exceed 172 residences. The Association and BEWA are governed by a board of directors that has the ability to set water usage rates as deemed appropriate and to incur debt. Voter approval is required to increase assessments for both the Association and BEWA. A fairshare agreement between the two associations requires that the Association and BEWA share operation and maintenance expenses.

### **Water Rights**

When in priority, typically November through March, the Association fills its reservoirs from the West Fork. When out of priority, the release from Meadow Lake must equal the inflow from the West Fork. The Association is decreed 108.98 AF of storage in these lakes; however, capacity exists to store up to 118 AF. The storage rights are summarized in the following table.

**TABLE 1: PROJECT WATER RIGHTS**

<b>Name</b>	<b>Case No.</b>	<b>Adjudication Date</b>	<b>Appropriation Date</b>	<b>Amount</b>
Rainbow Lake	W1771	12-31-1971	11-10-1952	28.133 AF
Mirror Lake	W1772	12-31-1971	11-10-1952	17.147 AF
Meadow Lake	W1768	12-31-1971	8-13-1953	32.300 AF
Willow Lake	W1770	12-31-1971	8-13-1953	22.000 AF
Sunset Lake	W1766	12-31-1971	8-13-1953	8.600 AF
<b>TOTAL</b>				<b>108.98 AF</b>

In addition to its Big Elk Meadows storage rights, the Association owns 12 shares of stock in B&L. The water represented by these shares may be stored in Big Elk Meadows or ISH Reservoir per a 1995 augmentation plan, Case No. 95CW238. The plan allows for additional storage and exchange with its 12 shares in B&L; however, no means currently exists for the Association to control and administer the return of flows between ISH Reservoir and the Little Thompson River, as required by the augmentation plan.

### **Project Description**

Following the SEO evaluation, the Association hired Wright Water Engineers to perform an exhaustive assessment of their system and provide recommendations to improve aging infrastructure and achieve compliance with decrees. Three system improvements were suggested, and analyzed, with the intent of addressing underlying issues with a long term, yet cost effective solution. Below is a summary of the selected alternatives for each improvement.

#### **A. Meadow Lake Dam Outlet Replacement**

The existing 6-inch CMP outlet conduit is deteriorated, preventing the control of downstream releases to the West Fork. The Association contracted Gauthiere Engineering to explore rehabilitation alternatives. An over dam siphon alternative was selected. The installation of a 12-inch siphon will restore the ability to meet release rates in a controlled manner. Final engineering drawings have been prepared and submitted to the SEO for review. Design approval is anticipated as early as November 2012. The estimated cost of this task is \$205,000.

#### **B. Raw Water Monitoring Facility**

The existing West Fork flow monitors, located at the upstream and downstream perimeter of Big Elk Meadows, are antiquated and in need of replacement. Following a system analysis by Wright Water Engineers, it was determined that two Sutron monitoring and recording devices should be installed. The devices will enable the Association to monitor and record West Fork flow rates in compliance with SEO requirements. The estimated cost of this task is \$70,000.

#### **C. ISH Reservoir Augmentation Improvements**

Under order from the SEO, the Association must comply with historic return flow provisions outlined in its decree, requiring the ability to return up to 13.15 AF of water from ISH Reservoir to the Little Thompson River. The river is miles downstream from the reservoir and the most favorable alternative is to utilize a neighboring irrigation system serving the Riverglen subdivision. This requires connecting to the Riverglen system and extending an 8-inch outfall pipe to the Little Thompson River, 420 LF downstream. This task also includes the installation of several 8-inch valves and an agreement with the Riverglen subdivision. A verbal agreement has been reached with Riverglen and a formal agreement is in process. The estimated cost of this task is \$25,000.

The design and permitting of all three tasks is ongoing. The Association anticipates having easements secured, and SEO approval, in time to start construction during the beginning of 2012. Construction is expected to take up to 4 months, pending weather. The total Project cost is estimated to be \$300,000, as summarized in Table 2.

**TABLE 2: TOTAL PROJECT COST SUMMARY**

Task	Cost
Engineering	\$120,000
Construction	\$158,000
Contingency	\$22,000
Total	\$300,000

### **Financial Analysis**

The Association qualifies for the middle-income municipal interest rate of 4.50% 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	\$300,000
CWCB Loan Amount (90% of total Project cost)	\$270,000
CWCB Loan Amount (including 1% Service Fee)	\$272,700
CWCB Annual Loan Payment	\$16,741
CWCB Loan Obligation (including 10% debt reserve funding)	\$18,416
Number of Association Members	163
Current Assessment (per member)	\$1,288
Cost of Project per member (including 10% reserve)	\$112

### ***Creditworthiness:***

The Association generates operating revenue from assessments on its 163 members. Current assessments average \$1,288 per member annually. The Association also derives revenue from its fairshare agreement with BEWA, averaging \$99,000 per year. BEWA generates its revenue from annual assessments of its members and water usage fees. The Association has sufficient cash reserves on hand to cover its contribution to the project. The Association does not anticipate an immediate increase in assessments as it intends to cover its debt obligation with an excess in revenues generated from current assessment rates and its fairshare payment from BEWA. It is anticipated; however, that both Association and BEWA assessments, in addition to usage rates, will be increased in the near future to replenish cash reserves.

The Association has two outstanding loans for the purchase of maintenance equipment. One was a \$50,000 loan for a road grader. The monthly payment is \$680 (\$8,160 per year) and has a remaining balance of \$20,272. The other is a \$12,000 loan for a weedcutter boat. The monthly payment is \$329 (\$3,948 per year) and has a remaining balance of \$3,212.

**TABLE 4: FINANCIAL RATIOS for BIG ELK MEADOWS ASSOCIATION**

Financial Ratio	2009 – 2011	Future w/ Project
Operating Ratio (operating revenues/operating expenses) weak: <100% - average: 100% - 120% - strong: >120%	101% (average) \$327K/\$323K	101% (average) \$345K/\$341K
Debt Service Coverage Ratio (total eligible revenues-operating expenses)/total debt service weak: <100% - average: 100% - 120% - strong: >120%	224% (strong) (\$327K-\$311K)/\$12K	110% (average) (\$345K-\$311K)/\$31K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	224% (strong) \$725K/\$323K	203% (strong) \$695K/\$342K
Average Residential Water Bill (monthly) <sup>1</sup> weak: >\$60 - average: \$30 - \$60 - strong: <\$30	\$27.01 (strong)	\$37.01 <sup>2</sup> (average)
Debt Per Tap (total debt service/taps) weak: >\$5,000 - average: \$2,500 - \$5,000 - strong: <\$2,500	\$146 (strong) \$23K/157 <sup>3</sup>	\$1815 (strong) \$285K/157 <sup>3</sup>

<sup>1</sup> Bills for water usage are collected by BEWA.

<sup>2</sup> Future water bill is a theoretical value and assumes exclusively usage fees are increased to offset the entire debt obligation of loan and reflects no increase in annual assessments.

<sup>3</sup> There are 157 taps assessed and served by BEWA; however, there are 163 members assessed per the Association.

**Collateral:** As security for the loan, the Association will pledge its assessment revenues backed by a rate covenant, annual financial reporting, and a 40-acre parcel of land within Big Elk Meadows. This is in compliance with the CWCB Financial Policy #5 (Collateral).

**Staff Recommendation (Board approved staff recommendation November 16, 2011)**

Staff recommends the Board approve a loan, from the Construction Fund, not to exceed \$272,700 (\$270,000 for project costs and \$2,700 for the 1% Loan Service Fee) to the Big Elk Meadows Association for the Raw Water System Improvements Project. The loan terms shall be 30 years at a middle-income municipal rate of 4.50% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

cc: Leonard Arnold, Second Vice President, Big Elk Meadows Association  
Susan Schneider, AGO  
Peter Johnson, AGO

Attachment: Water Project Loan Program – Project Data Sheet

## Water Project Loan Program – Project Data Sheet

**Borrower:** Big Elk Meadows Association

**County:** Boulder/Larimer

**Project Name:** Raw Water System Improvements

**Project Type:** System Rehabilitation

**Drainage Basin:** South Platte, District 4

**Water Source:** West Fork of the Little Thompson River

**Total Project Cost:** \$300,000

**Funding Source:** Construction Fund

**Type of Borrower:** Middle-Income Municipal

**Storage:** 108.98 AF

**CWCB Loan:** \$272,700 (w/ 1% service fee)

**Interest Rate:** 4.50% **Term:** 30 years

The Big Elk Meadows Association is requesting a loan for improvements to its raw water system which serves Big Elk Meadows, a 205-lot subdivision with 160 residences distributed across 460 acres. During SEO inspection of the Association's raw water system and review of its water accounting practices it was determined the outlet conduit from Meadow Lake Dam was collapsing and there was no way to control release rates. It was also determined that the Association has no accurate means to measure flows and accurately control reservoir releases, violating the terms of its 1995 decree regarding return flows. The SEO has required that the Association improve their raw water system and accounting protocol in order to function safely and in compliance with its decrees. Project improvements include: Meadow Lake Dam outlet replacement, raw water monitoring, and ISH Reservoir augmentation outfall. This project will provide the Association with a means to monitor and control reservoir releases while satisfying downstream obligations per their augmentation plan.

**Location Map**

