



**COLORADO**

**Colorado Water  
Conservation Board**

Department of Natural Resources

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**TO:** Colorado Water Conservation Board Members

**FROM:** Jonathan Hernandez, P.E., Project Manager  
Kirk Russell, P.E., Finance Section Chief

**DATE:** November 18-19, 2015 Board Meeting

**CONSENT AGENDA ITEM:** 1a - Change to Existing Loans  
Greeley and Loveland Irrigation Company - Irrigation System Improvements

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### Guidance

At the May 2005 Board Meeting, the Board authorized staff to present as Consent Agenda items increases to existing loans that are less than 20% of the original loan request. This request is for an increase of 19% of the original loan amount.

### Introduction

The Greeley and Loveland Irrigation Company (Company) received approval of a \$3,154,230 CWCB loan (CT2015-022) at the September 2013 Board Meeting to finance the Irrigation System Improvements (Project). The purpose of the Project is to meet the State Engineer's Office Dam Safety Branch requirements, improve water management efficiencies, reduce high maintenance costs, and prevent continued outlet deterioration at Boyd Lake and Horseshoe Lake Reservoirs. The Project was split into four phases: Boyd Lake, Horseshoe Phase 1, Horseshoe Phase 2A, and Horseshoe Phase 2B. The Company has completed all phases except Horseshoe Phase 2B which is currently under construction. Final Project costs are estimated to exceed the original loan application estimate by 19%. The Company is requesting a loan increase for 90% of the increased Project costs. See attached Project Data Sheet for a location map and Project summary.

### Staff Recommendation

Staff recommends the Board approve a loan increase of \$590,850 (\$585,000 for Project cost and \$5,850 for the 1% Loan Service Fee), for a total loan not to exceed \$3,745,080 (\$3,708,000 for Project cost and \$37,080 for the 1% Loan Service Fee) to the Greeley and Loveland Irrigation Company for engineering and construction costs related to the Irrigation System Improvements Project, from the Construction Fund. The loan terms shall remain 30 years at a blended interest rate of 2.15% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.



## Background

The Company's service area includes approximately 14,000 acres of farm land in Larimer and Weld Counties extending from Loveland east to the cities of Greeley and Evans. The Company has an extensive irrigation system consisting of two diversions from the Big Thompson River (Big Barnes Ditch diversion and Greeley and Loveland Canal diversion), canals, and a total of nine reservoirs. Of these reservoirs, the Company owns four and the Seven Lakes Reservoir Company (Seven Lakes) owns five. Seven Lakes is a reservoir company that uses the Company's irrigation system and operates in conjunction with the Company to afford greater use of the water.

Boyd Lake, owned by the Company, is the largest reservoir in the irrigation system and has a surface area of 1,750 acres with a storage capacity of 48,871 AF. The reservoir was constructed around 1905 and has a Class 1 embankment dam with a dam height of 40 ft and a crest length of 10,729 ft. In 2006, the spillway was upgraded from a natural swale to a labyrinth spillway and discharges into the Greeley and Loveland Canal (CWCB Loan C150161). Boyd Lake has a low-level and a high-level outlet. The high-level outlet is believed to be the original outlet structure. Only three of the original six gates were operational, and the outlet leaked significantly when all gates were fully closed.

Horseshoe Lake, owned by Seven Lakes, has a surface area of 650 acres and a storage capacity of 8,115 AF. The reservoir was constructed around 1902 and has two dams. Horseshoe No. 1 Dam is the southernmost dam and has a low-level outlet that discharges into Heinrich Lake. Horseshoe No. 2 Dam is north of No. 1 Dam and has a low-level outlet and a spillway that discharges into Boyd Lake. This Project increases the conveyance capability from Horseshoe Lake into Boyd Lake from 200 cfs to 1,100 cfs by adding a high-level outlet to the spillway, removing a significant water conveyance bottleneck within the Company's irrigation system.

## Water Rights

Tables 1 and 2 list the Company's direct flow and storage rights. This project will not require any additional water rights or water supplies.

**TABLE 1: DIRECT FLOW WATER RIGHTS**

| Name                            | Amount (CFS) | Appropriation Date | Adjudication Date |
|---------------------------------|--------------|--------------------|-------------------|
| Big Barnes Ditch                | 18.56        | 10/20/1865         | 8/28/1883         |
| Louden Irrigation Canal Company | 40.00        | 10/01/1871         | 5/28/1883         |
| Chubbuck Ditch                  | 39.04        | 10/20/1870         | 5/28/1883         |
| Chubbuck Ditch                  | 35.5         | 10/25/1873         | 5/28/1883         |
| Chubbuck Ditch                  | 8.36         | 11/01/1865         | 5/28/1883         |
| Louden Irrigation Canal Company | 123.00       | 11/01/1877         | 5/28/1883         |
| Chubbuck Ditch                  | 15.20        | 11/01/1878         | 5/28/1883         |
| Louden Irrigation Canal Company | 7.00         | 11/10/1861         | 5/28/1883         |
| Greeley and Loveland Canal      | 297.44       | 4/01/1881          | 5/28/1883         |
| Big Barnes Ditch                | 12.06        | 6/01/1867          | 5/28/1883         |
| Big Barnes Ditch                | 19.93        | 6/23/1873          | 5/28/1883         |
| Louden Irrigation Canal Company | 0.008        | 9/17/1883          | 5/29/1884         |

**TABLE 2: STORAGE WATER RIGHTS**

| Name                                      | Storage (AF) | Appropriation Date | Adjudication Date |
|-------------------------------------------|--------------|--------------------|-------------------|
| Greeley and Loveland Reservoir            | 14,238.7     | 1/14/1893          | 6/29/1916         |
| Seven Lakes Reservoir System <sup>1</sup> | 8,432.0      | 4/28/1902          | 6/29/1916         |
| Boyd Lake                                 | 48,564.0     | 4/28/1902          | 6/29/1916         |
| Greeley and Loveland Reservoir            | 14,239.0     | 1/14/1893          | 6/27/1978         |
| Seven Lakes Reservoir System <sup>1</sup> | 8,432.0      | 4/28/1902          | 6/09/1978         |
| Boyd Lake                                 | 44,031.2     | 4/28/1902          | 6/27/1978         |

<sup>1</sup> Includes Horseshoe Lake as well as Westerdoll Lake, Hoffman Reservoir, & Heinrich Reservoir

Average annual diversions are 45,000 AF.

### **Project Update**

#### **Boyd Lake**

The construction contract for the Boyd Lake High-Level Outlet Structure was awarded to Moltz Constructors in December 2014 and construction occurred from January 2015 to May 2015. The construction contract exceeded the engineer's final design estimate by \$33,587. Construction was completed on schedule and included two change orders totaling \$24,090.

#### **Horseshoe Phase 1**

Horseshoe Phase 1 included the installation of the high-level outlet gate. The Company agreed to allow Larimer County's contractor to install the gate as a part of the County's adjacent spillway box culvert and county road bridge replacement project. Therefore Phase 1 was performed by the County and its selected contractor, with the Company reimbursing the County for work associated with the gate. Construction was completed over schedule resulting in an increased construction cost of \$116,737 and increased construction observation cost of \$188,260.

#### **Horseshoe Phase 2A & 2B**

Horseshoe Phase 2 includes connecting the new high-level outlet gate installed in Phase 1 into Boyd Lake. The construction contract was awarded to Moltz Constructors in March 2015. In cooperation with Boyd Lake State Park, it was agreed to build Phase 2 in two phases to avoid summertime construction. Phase 2A consisted of the outfall into Boyd Lake and was constructed between March 2015 and June 2015. Phase 2B consists of tying the gate built in Phase 1 into the Boyd Lake outfall built in Phase 2A. Construction began in September 2015 and is on schedule for completion in December 2015. After work was nearly complete on Phase 2A, a miscalculation in excavation amounts, additional select fill, and additional rip-rap were discovered in the contract documents resulting in a change order in the amount of \$189,300. Additionally, the splitting of Phase 2 into two phases resulted in a change order in the amount of \$88,658.

The current cost estimate is shown in Table 3.

**TABLE 3: UPDATED COST ESTIMATE**

| Task                              | Original Estimate | Updated Cost         |
|-----------------------------------|-------------------|----------------------|
| Design & Construction Engineering | \$585,000         | \$912,247            |
| Boyd Lake Outlet                  | \$675,000         | \$847,688            |
| Horseshoe Outlet Phase 1          | \$1,835,000       | \$522,733            |
| Horseshoe Outlet Phase 2          |                   | \$1,636,896          |
| Construction Contingency          | \$375,000 (12%)   | \$200,000 (5%)       |
| Total                             | \$3,470,000       | \$4,120,000(Rounded) |

**Schedule:** Boyd Lake, Horseshoe Phase 1, and Horseshoe Phase 2A have been successfully completed. Horseshoe Phase 2B is under construction and is scheduled for completion in December 2015. Final site cleanup activities including repaving and reseeding will occur by April 2015.

#### Financial Analysis

Table 4 provides a summary of the Project's financial aspects. The Company's blended interest rate of 2.15% for a 30-year term (Ownership: 34% Agricultural, 53% Low Municipal, 12% Mid Municipal, <1% High Municipal, <1% Commercial) will remain as per the terms of the original contract.

**TABLE 4: FINANCIAL SUMMARY**

|                                              | Original Approval | Current Request |
|----------------------------------------------|-------------------|-----------------|
| Total Project Cost                           | \$3,470,000       | \$4,120,000     |
| Borrower Match (10% of total Project costs)  | \$347,000         | \$412,000       |
| CWCB Loan Amount                             | \$3,123,000       | \$3,708,000     |
| CWCB Loan Amount (Including 1% Service Fee)  | \$3,154,230       | \$3,745,080     |
| CWCB Annual Loan Payment                     | \$143,757         | \$170,686       |
| CWCB Loan Obligation (Including 10% Reserve) | \$158,133         | \$187,755       |
| Number of Shares                             | 1,648             | 1,648           |
| Annual Loan Obligation Per Share             | \$96              | \$114           |
| Current Assessment per Share                 | \$260             | \$260           |
| Future Assessment per Share                  | \$352             | \$374           |

**Creditworthiness:** The Company has \$2,220,006 in existing debt made up of two CWCB loans as summarized in Table 5. These loans are in good standing.

**TABLE 5: EXISTING DEBT**

| Lender                      | Original Balance | Current Balance | Annual Payment | Maturity Date | Collateral                                                            |
|-----------------------------|------------------|-----------------|----------------|---------------|-----------------------------------------------------------------------|
| CWCB<br>(Contract C153835A) | \$299,817        | \$174,495       | \$18,269       | 2029          | 100% interest in Equalizer Reservoir<br>Pledge of Assessment Revenues |
| CWCB<br>(Contract C150161)  | \$2,600,899      | \$2,045,511     | \$132,697      | 2036          | 100% interest in Boyd Lake<br>Pledge of Assessment Revenues           |

**TABLE 6: FINANCIAL RATIOS**

| <i>Financial Ratio</i>                                                                                                | <b>Past 2 Years</b>                         | <b>Future<br/>w/ Project</b>                 |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------|
| Operating Ratio (revenues/expenses)<br>weak: <100% - average: 100% - 120% - strong: >120%                             | 107%<br>(Average)<br>\$780K/\$732K          | 105%<br>(Average)<br>\$968K/\$920K           |
| Debt Service Coverage Ratio<br>(revenues-expenses)/debt service<br>weak: <100% - average: 100% - 120% - strong: >120% | 132%<br>(Strong)<br>\$780K-\$581K<br>\$151K | 114%<br>(Average)<br>\$968K-\$581K<br>\$339K |
| Cash Reserves to Current Expenses<br>weak: <50% - average: 50% - 100% - strong: >100%                                 | 30%<br>(Weak)<br>\$218K/\$732K              | 12%<br>(Weak)<br>\$114K/\$920K               |
| Annual Operating Cost per Acre-Foot (45,000 AF)<br>weak: >\$20 - average: \$10 - \$20 - strong: <\$10                 | \$16<br>(Average)<br>\$732/45K AF           | \$20<br>(Average)<br>\$920K/45K AF           |

**Collateral:** Security for the loan will remain a pledge of assessment revenues backed by an assessment covenant and the Project itself (Boyd Lake High-Level Outlet and Horseshoe Lake High-Level Outlet). This is in compliance with the CWCB Financial Policy #5 (Collateral).

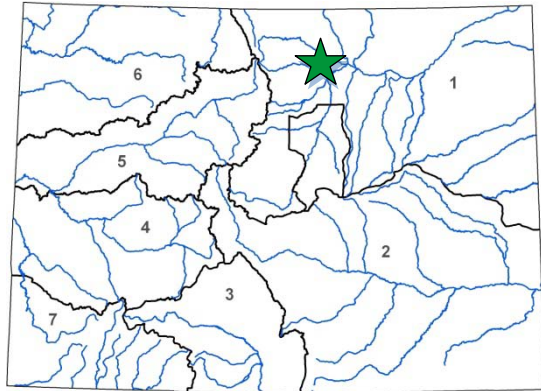
cc: Ron Brinkman, General Manager, Greeley and Loveland Irrigation Company  
Susan Schneider/Jennifer Mele, Colorado Attorney General's Office

Attachment: Water Project Loan Program - Project Data Sheet



(Loan Increase)

| L O A N   D E T A I L S       |                              |
|-------------------------------|------------------------------|
| Project Cost:                 | \$4,120,000                  |
| CWCB Loan (with Service Fee): | \$3,745,080                  |
| Loan Term and Interest Rate:  | 30 Years @ 2.15%             |
| Funding Source:               | Construction Fund            |
| B O R R O W E R   T Y P E     |                              |
| Agriculture                   | Municipal                    |
| 34%                           | 53% Low - 12% Mid - <1% High |
|                               | <1%                          |
| P R O J E C T   D E T A I L S |                              |
| Project Type:                 | Reservoir Rehabilitation     |
| Average Annual Delivery:      | 45,000 AF                    |
| Storage Preserved:            | 56,986 AF                    |



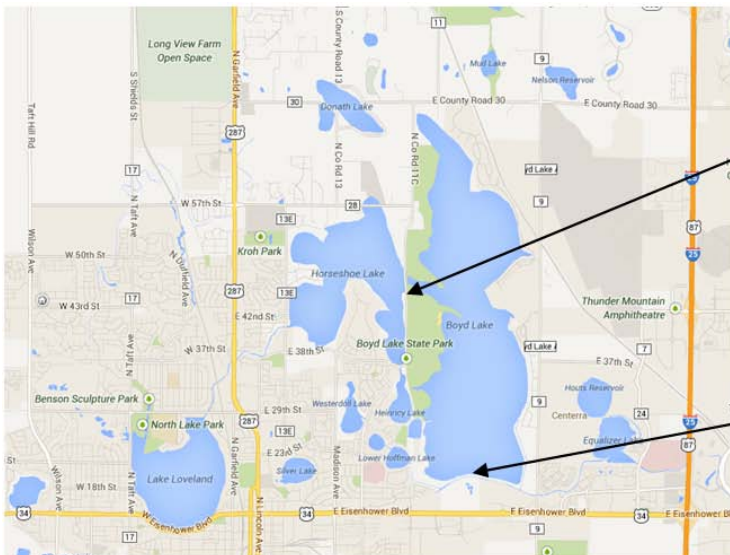
| L O C A T I O N |                    |
|-----------------|--------------------|
| County:         | Larimer            |
| Water Source:   | Big Thompson River |
| Drainage Basin: | South Platte       |
| Division:       | 1                  |
| District:       | 4                  |

The Greeley and Loveland Irrigation Company (Company) is a mutual ditch company established in 1900. Together with the Seven Lakes Reservoir Company (Seven Lakes), they own and operate nine reservoirs, and control the Greeley and Loveland Canal.

Boyd Lake, owned by the Company, is the largest reservoir in the irrigation system and has a surface area of 1,750 acres with a storage capacity of 48,871 acre-feet. The Boyd Lake project will replace the high-level reservoir inlet and outlet from the Greeley and Loveland Irrigation Canal so that the Company can discharge water into Boyd Lake for storage during low reservoir levels, or discharge water back into the canal for deliveries during high reservoir levels.

Horseshoe Lake, owned by Seven Lakes, has a surface area of 650 acres and a storage capacity of 8,115 acre-feet. The Horseshoe Lake project will increase the conveyance capability from Horseshoe Lake into Boyd Lake to 1,100 cfs, at higher reservoir levels, so the Company and Seven Lakes can more efficiently provide irrigation water to shareholders.

As of October 2015, construction has been completed on Boyd Lake, Horseshoe Phase 1, and Horseshoe Phase 2A. Horseshoe Phase 2B is the last phase for this Project and is currently under construction. The Company is seeking this increase to account for actual construction costs which exceeded the original engineering estimate.



Existing Horseshoe Lake High-Level Outlet



Existing Boyd Lake High-Level Outlet