STATE OF COLORADO

Colorado Water Conservation Board
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TO: Colorado Water Conservation Board Members

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

DATE: September 13, 2013

SUBJECT: **Agenda Item 30b, September 24-25, 2013 Board Meeting**
Finance – Water Project Loans
Greeley and Loveland Irrigation Company – Irrigation System Improvements

Introduction

The Greeley and Loveland Irrigation Company (Company) is applying for a loan for the Irrigation System Improvements Project (Project). The purpose of the Project is to meet the State Engineer's Office (SEO) Dam Safety Brach requirements, improve water management inefficiencies, reduce high maintenance costs, and prevent continued outlet deterioration at Horseshoe and Boyd Lake. The total Project cost is estimated to be $3,470,000. The Company is requesting a loan from the CWCB for approximately 90% of Project costs. See attached Project Data Sheet for a location map and project summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $3,154,230 ($3,123,000 for project cost and $31,230 for the 1% service fee) to the Greeley and Loveland Irrigation Company for engineering and construction cost related to the Irrigation System Improvements Project from the Construction Fund. The loan terms shall be 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 4,874 acre-feet. 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. The spillway was recently upgraded from a natural swale to a labyrinth spillway and discharges into the Greeley and Loveland Canal. Boyd Lake has a low-level outlet and a high-level outlet. The high-level outlet is believed to be the original outlet structure.

Horseshoe Lake, owned by Seven Lakes, has a surface area of 650 acres and a storage capacity of 8,051 acre-feet. 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 Heinricy 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.

Loan Feasibility Study

Ed Toms, P.E. with URS Corporation, prepared the Loan Feasibility Study titled "*Greeley and Loveland Irrigation System Improvement Project*," dated August 2013. The study includes an alternative analysis and preliminary engineering design and cost estimates. The study was prepared in accordance with the CWCB guidelines.

Borrower – Greeley and Loveland Irrigation Company

The Company is a mutual ditch company that was established in 1900, though the original irrigation company (Loveland and Greeley Irrigation and Land Company) formed in 1881. The Company's office is located in Greeley. It operates as a nonprofit corporation and is in good standing with the Colorado Secretary of State. Together with Seven Lakes, they own and operate nine reservoirs, and control the Greeley and Loveland Canal. The Company's revenues are derived principally from assessments charged on shares of stock owned by the stockholders with a small percentage of revenue coming from leasing rights for recreational use of several reservoirs.

The Company is made up of 1,648 shares of which 34% are agricultural owners, 53% are low-income municipal owners, 12% are mid-income municipal owners, less than 1% are high-income municipal owners, and less than 1% are commercial owners. The two largest shareholders by ownership are the City of Greeley (51%) and the Town of Evans (9%) although approximately 70% of those shares are currently leased for agricultural production.

The Company's by-laws (2008) allow the Board of Directors to borrow money for the purposes of the corporation and to pledge corporation property to secure loan repayment. Should the stockholders fail to authorize an assessment for any given year, the Board has the power to make any such assessment and 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

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[1]	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[1]	8,432.0	4/28/1902	6/09/1978
Boyd Lake	44,031.2	4/28/1902	6/27/1978

[1] Includes Horseshoe Lake as well as Westerdoll Lake, Hoffman Reservoir, & Heinricy Reservoir

Average annual diversions are 45,000 AF.

Project Description

The Project includes the improvement of the existing Horseshoe High-Level Outlet and the Boyd Lake High-Level Outlet. Both Projects are required to meet the SEO dam safety requirements, improve water management inefficiencies, reduce high maintenance costs, and prevent continued outlet deterioration.

The existing Horseshoe Lake low-level outlet is a water conveyance bottleneck within the Company's irrigation system as it can only convey approximately 200 cfs. The existing high-level outlet can only be used as an emergency spillway as there is currently no direct or controlled way to discharge these flows into Boyd Lake through the spillway. The Horseshoe Lake project will be used to 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. This work will include providing a conveyance structure underneath County Road 11C and so will have direct involvement with Larimer County (County).

The Boyd Lake project will replace the high-level reservoir inlet and outlet from the Greeley and Loveland Irrigation Canal (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. This existing high-level outlet is believed to be over 100 years old and only three of the six gates are in operable condition. Further, even when the gates are fully closed, significant water leaks from the Canal into Boyd Lake though this outlet structure. Based on inspections by the SEO and the Company's consulting engineer URS, this structure is beyond repair and poses a dam safety concern. The box culverts are separating from the canal, have large voids along the culverts, and there is no evidence of reinforcing in the concrete culverts.

Three alternatives were considered as part of the feasibility report:

Alternative 1 – Do Nothing: This alternative was deemed not viable due to the potential loss of system operations and dam safety issues.

Alternative 2 – Temporary Repairs: This alternative included pumping grout in the undermined portions of the Boyd Lake outlet structure and patching cracks. Based on URS's inspection, any attempt to raise or move these culverts would likely cause them to deteriorate further. Therefore this alternative was deemed not viable. Any attempt to increase capacity of the Horseshoe Lake outlet would be futile without replacing the box culvert/bridge of County Road 11. The replacement of the box culvert would also require a replacement of the outlet structure therefore a temporary repair of the Horseshoe Lake structure was deemed not viable as the structure was not intended to serve in the now desired function.

Selected Alternative 3A – Horseshoe High-Level Outlet Replacement: This alternative is to replace the entire high-level outlet structure, including the box culvert/bridge under County Road 11C. This project includes a 5-foot tall by 44-foot wide hinged crest gate with a 1,100 cfs capacity upstream of a new concrete box bridge crossing. Downstream of the new box culvert, a 108-inch RCP pipe will be installed to convey flows downstream to a baffle chute structure and into Boyd Lake. The County will design, install, and fund the box culvert bridge of County Road 11C. Although the Company and Seven Lakes share responsibility and ownership of this outlet structure, the Company has agreed to take on sole responsibility for the CWCB loan as the Project Sponsor.

Selected Alternative 3B – Boyd Lake High-Level Outlet Replacement: This alternative is to replace the entire high-level outlet structure, including the aged gate structures. The project includes the removal of six concrete box gate outlets and replacing them with two 48-inch steel pipes encased in concrete. The flow will be regulated by two 48-inch by 48-inch slide gates that will be installed out of the dam and adjacent to the canal. The new oulet will pass a design flow of 240 cfs into the canal and also back into Boyd Lake, when required.

Alternatives 3A and 3B meet the goals of this project with costs as summarized in Table 3:

TABLE 3: TOTAL PROJECT COST SUMMARY

Task	Cost
Design Engineering	$240,000
Horseshoe Outlet Construction	$1,835,000
Boyd Outlet Construction	$675,000
Construction Engineering Support	$345,000
Construction Contingency (15%)	$375,000
Total	$3,470,000

Schedule: Construction of the Horseshoe project is expected to commence in February 2014 with the Boyd project commencing construction in September 2014. Project completion is estimated to occur by the end of 2014.

Financial Analysis

Table 4 provides a summary of the Project's financial aspects. The term of the loan will be 30-years and the interest rate will be a blended rate of 2.15%. (Ownership: 34% Agriculture, 53% Low Municipal, 12% Mid Municipal, <1% High Municipal, <1% Commercial.)

TABLE 4: FINANCIAL SUMMARY

Total Project Cost	$3,470,000
Borrower Match (10% of total Project cost)	$347,000
CWCB Loan Amount (90% of total Project cost)	$3,123,000
CWCB Loan Amount (Including 1% Service Fee)	$3,154,230
CWCB Annual Loan Payment	$143,757
CWCB Loan Obligation (Including 10% Reserve)	$158,133
Number of Shares	1,648
Annual Cost Per Share for Loan	$96
Current Assessment per Share	$260
Future Assessment per Share	$352

Creditworthiness: The District has $2,451,963 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	2013 Payment	Maturity Date	Collateral
CWCB (Contract C153835A)	$299,817	$204,683	$18,269	2029	100% interest in Equalizer Reservoir Pledge of Assessment Revenues
CWCB (Contract C150161)	$2,600,899	$2,247,280	$132,697	2036	100% interest in Boyd Lake Pledge of Assessment Revenues

TABLE 6: FINANCIAL RATIOS

Financial Ratio	Past 3 Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	106% (Average) $669K/$632K	104% (Average) $821K/$790K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	125% (Strong) $669K-$481K $151K	110% (Average) $821K-$481K $309K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	32% (Weak) $205K/$632M	13% (Weak) $103K/$792K
Annual Operating Cost per Acre-Foot (45,000 AF) weak: >$20 - average: $10 - $20 - strong: <$10	$14 (Average) $632M/45K AF	$16 (Average) $729k/45K AF

Collateral: As security for the loan, the Company will pledge its assessment revenues backed by a rate covenant and the Boyd Lake High-Level Outlet Project. The Company and Seven Lakes will pledge the Horseshoe Lake High-Level Outlet Project. 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's Attorney General Office

Attachment: Water Project Loan Program – Project Data Sheet

CWCB Water Project Loan Program
Project Data Sheet

Borrower: Greeley and Loveland Irrigation Company

County: Larimer

Project Name: Irrigation System Improvements

Project Type: Reservoir Rehabilitation

Drainage Basin/ District: South Platte / 4

Water Source: Big Thompson River

Total Project Cost: $3,470,000

Funding Source: Construction Fund

Type of Borrower: Agricultural

Average Annual Diversion: 45,000 AF

CWCB Loan: $3,154,230
(with 1% service fee)

Interest Rate: 2.15% **Term:** 30-years
(34% Ag, 53% Low, 12% Mid, <1% High, <1% Com)

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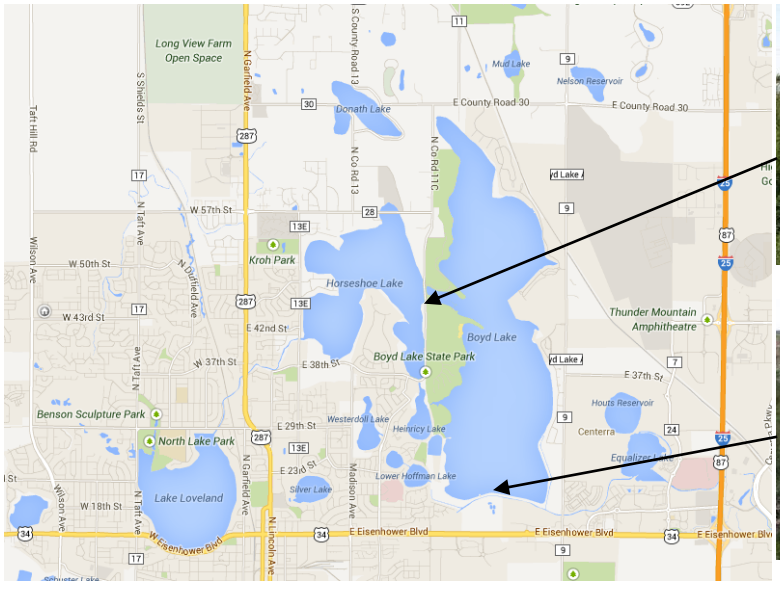


Existing Horseshoe Lake High-Level Outlet


Existing Boyd Lake High-Level Outlet