STATE OF COLORADO

Colorado Water Conservation Board
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TO: Colorado Water Conservation Board Members

FROM: Anna Mauss, P.E.
Mike Serlet, P.E., Chief
Water Supply Planning and Finance Section

DATE: May 12, 2009

SUBJECT: **Agenda Item 17g, May 19-20, 2009 Board Meeting**
Water Supply Planning and Finance Section – New Project Loans
Riverside Reservoir and Land Company – Spillway Project

Introduction

The Riverside Reservoir and Land Company (Company) is applying for a $2,810,000 loan to construct its Spillway Project (Project). Currently Riverside Reservoir (Reservoir) does not have a spillway and the State Engineer's Office (SEO) has imposed a nominal storage restriction until a spillway is built. The purpose of the spillway is to discharge inflows from large storm events to avoid overtopping of the dam. The estimated total cost of the project is $3,124,000. See the attached Project Data Sheet for a location map and project summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $2,838,100 ($2,810,000 for project costs and $28,100 for the 1% Loan Service Fee) to the Riverside Reservoir and Land Company to construct its Spillway Project from the Severance Tax Trust Fund Perpetual Base Account. The loan terms shall be 30 years at the agricultural interest rate of 2.5% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Background

The Company owns and operates the 64,000 acre-foot capacity Reservoir, an inlet canal known as Riverside Ditch, and a river diversion structure located near the town of Kersey, Colorado. The Company diverts water from the South Platte River approximately 10 miles downstream of Greeley, Colorado. It stores water primarily during winter months for irrigation releases during the following water season to approximately 50,000 acres of land in Weld County.

Riverside Reservoir was constructed in stages beginning in 1900. The original reservoir was constructed by the South Platte Land, Reservoir and Irrigation Company and was known as Sanborn Draw Reservoir. Initially an outlet structure was constructed at the reservoir site and minor fill dams were built to form Sanborn Draw Reservoir, which held approximately 16,000 acre-feet (AF). It first received water in about 1902. Shortly thereafter, the Riverside Reservoir and Land Company was formed and purchased Sanborn Draw Reservoir and the associated inlet canal. Riverside Irrigation District was formed at that time to purchase 1,200 of the rights in the Riverside Reservoir and Land Company. Based upon the Riverside Irrigation District contract, the Company enlarged Sanborn Draw Reservoir to the present capacity of approximately 64,000 AF and changed its name to Riverside Reservoir.

The Reservoir has been classified by the Colorado Division of Water Resources as a Large Size, High Hazard structure. This classification denotes that failure of the dam would cause extensive property damage and probable loss of human life. The Reservoir currently is not equipped with an emergency spillway, which is required by the DWR's *Rules and Regulations for Dam Safety and Dam Construction*. Construction of a spillway on the dam will reduce the risk of dam failure by over-topping during an extreme flood event, thereby enhancing the safety of downstream residents and property.

The SEO has issued a nominal storage restriction on the Reservoir of 0.05-feet (200 AF of storage loss) and has required the construction of a spillway on the dam. For this reason, the Company is undertaking this project to enhance the safety of the Reservoir.

Feasibility Studies

The Loan Feasibility Study titled *"Feasibility of the Construction of the Riverside Reservoir Emergency Spillway, March 2009"* was prepared by James Ferentchak, P.E., of W.W. Wheeler and Associates, Inc. The study was prepared in accordance with the CWCB guidelines and includes an alternative analysis, engineering design and cost estimates.

Riverside Reservoir and Land Company

The Company is a non-profit corporation formed under the laws of the State of Colorado. It was formed in April 1902 to construct and operate Riverside Reservoir and the Riverside Canal for the benefit of the shareholders. The Company diverts approximately 105,000 AF annually and releases roughly 39,000 AF of water from the Reservoir.

There are 10,020 shares of stock in the Company. For practical purposes of levying assessments and allotting water, the Company uses rights. One right in the Company represents four shares of stock. There are 2,505 rights in total.

The Company is managed by a five - member board of directors elected on an annual basis. The Company officers include a president and vice president elected by the board of directors. The secretary treasurer is hired by the board. The board also retains a superintendent to conduct the normal day-to-day operations of the Company.

Riverside Irrigation District (District) owns 8,027 shares (2,006.75 rights, 80%) of the Company and is therefore the majority owner. Four of the five board members of the Company also serve on the District board. The remaining rights are owned by other ditch companies and private individuals.

Assessments may be raised to cover debt service with approval of the stockholders. The Company may put a lien upon shares of stock and stop water delivery if assessments are not paid. The Company shareholders passed a resolution in February 2009 authorizing the board of directors to obtain a loan from the CWCB for the spillway. The board subsequently passed a resolution in March 2009 authorizing the Project.

Water Rights

Table 1. Water Rights

Water Right	Appropriation Date	Adjudication Date	Amount	Use
Reservoir Storage	4/1/1902	1/15/1914	16,070 AF	Irrigation
Reservoir Storage	8/1/1907	1/15/1914	41,437 AF	Irrigation
Reservoir Storage	10/25/1910	1/15/1914	Enough to fill to GH 34’	Irrigation
Reservoir Storage (Refill)	12/31/1929	6/8/1965	56,325 AF	Irrigation

Project Description

The purpose of this Project is to equip the Reservoir with an emergency spillway that is required by the SEO. The Project will enhance the safety of the Reservoir by allowing the safe routing of the inflow design flood without the overtopping of the dam embankment.

Three alternatives were considered prior to reaching the current spillway design. The alternatives were:

1. The no-action alternative;
2. Construct a concrete spillway near station 57+00E;
3. Construct a concrete spillway at station 9+00E or 2+00E.

Alternative No. 1 was considered unacceptable due to the fact that the SEO has imposed a storage restriction and the Company is concerned that the restriction will be progressively increased to reduce the available storage.

Selected Alternative No. 2 was selected because of the location near the east end of the embankment where the dam height is low and the dam crest ties into a natural intermediate abutment. This location will allow for the spillway structure to be constructed on a natural foundation and not on the dam embankment.

Alternative No. 3 was ruled out because these alternate spillway locations were both in areas that are prone to severe wave action due to the prevailing winds from the north. This wave action could cause a significant amount of dynamic loading and spilled water; therefore, the locations were not as ideal as the chosen location.

The Company selected Alternative 2, a concrete spillway structure at Station 57+00E. The spillway will consist of an ogee crest weir, a 30-foot wide open channel concrete chute, a 40-foot wide dissipator, and a transition section from dissipator to an excavated outfall channel. In addition, a bridge or multiple series of culverts will be installed across the spillway for the county road access to allow for safe passage of the regulatory flood (100-year) without damage to the road. The selected site provides the simplest construction, the longest construction time window, the safest construction due to the low dam height and wide abutment area for construction, minimized potential for wave induced incidental spill, and the safest operation due to limited normal wave impact.

There are a few permitting items that will need to be addressed with the construction of the Project. Spillway easement leases across Equus Farms and the State of Colorado properties are necessary. A spillway flood easement has been obtained from Equus Farms. Lease discussions are under way with the State of Colorado. In addition, a permit for a County road crossing will be required by Weld County to bridge County Road 89 by the spillway chute.

The following schedule has been proposed: final design complete by January 2010, SEO approval by May 2010, construction beginning in July 2010, and the Project being complete and operational by March 2011. (Note: The inflow design flood has been approved by the SEO.)

The engineer's estimate of probable construction costs is presented in Table 2.

TABLE 2

PROJECT COST

Construction	$ 2,470,000
Engineering	$ 284,000
Contingency	$ 370,000
TOTAL	$ 3,124,000

Financial Analysis

The total estimated cost of the Project is $3,124,000. Company water ownership is 100% agricultural. Based on the current agricultural rates for a 30-year term, the interest rate will be 2.5%.

TABLE 3

FINANCIAL SUMMARY

Total Project Cost	$3,124,000
CWCB Loan Amount	$2,810,000
CWCB Loan Amount (Including 1% Service Fee)	$2,838,100
CWCB Loan Payment	$135,598
CWCB Loan Payment (Including 10% Reserve)	$149,157
Annual Cost of Loan per Right (1st 10 years with Reserve)	$60
Current Assessment per Right	$97
Future (with Project) Assessment per Right	$157

Creditworthiness: The Company has one existing loan with the CWCB for a diversion structure project. The total project cost was $405,000. The remaining balance on the loan is $327,802 with annual payments of $23,421 and a maturity date of May 1, 2030. The collateral on the existing loan is a pledge of assessment revenues, a Certificate of Deposit in the amount of one annual loan payment ($23,421) and the diversion structure itself. All payments have been made on time and the Company is in good standing with the CWCB.

This CWCB loan will be repaid from increases in assessments. The Company will pay the additional 10% of the project cost with its cash reserves.

TABLE 4
FINANCIAL RATIOS

Financial Ratio	Past 2 Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	124% (Average) $310K/249K	109% (Average) $459K/422K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	265% (Strong) $310-249K/23K	122% (Strong) $459-248K/173K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	148% (Strong) $403K/272K	21% (Weak) $89K/422K
Annual Operating Cost per Acre-Foot (105,000 AF) weak: >$20 - average: $10 - $20 - strong: <$10	$2.59/AF (Strong) $272K/105K AF	$4.02/AF (Strong) $422K/105K AF

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

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $2,838,100 ($2,810,000 for project costs and $28,100 for the 1% Loan Service Fee) to the Riverside Reservoir and Land Company to construct its Spillway Project from the Severance Tax Trust Fund Perpetual Base Account. The loan terms shall be 30 years at the agricultural interest rate of 2.5% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

cc: Don Chapman, Superintendent, Riverside Reservoir and Land Company
James Ferentchak, P.E., W.W. Wheeler & Associates
Susan Schneider, AGO

Attachment: Project Data Sheet

CWCB Construction Loan Program
Project Data Sheet

Borrower: Riverside Reservoir and Land Co.

County: Weld

Project Name: Emergency Spillway Project

Project Type: Reservoir Rehabilitation

Drainage Basin: South Platte

Water Source: South Platte River

Total Project Cost: $3,120,000

Funding Sources: Severance Tax Trust Fund Perpetual Base Account

Type of Borrower: Agricultural

Average Delivery: 39,000 AF (from Reservoir storage) (105,000 Total AF for Company)

Loan Amount: $2,838,100 (Including 1% fee)

Interest Rate: 2.5%

Term: 30 years

The Riverside Reservoir and Land Company (Company) owns and operates the 64,000 acre-foot capacity Riverside Dam and Reservoir, an inlet canal known as Riverside Ditch, and a river diversion structure located near the town of Kersey, Colorado. The Company diverts water from the South Platte River, approximately 10 miles downstream of Greeley, Colorado. It stores water primarily during winter months for irrigation releases during the following water season. The Company, formed in 1902, delivers irrigation water to approximately 50,000 acres. The Company is applying for a loan to install a spillway at Riverside Reservoir (Reservoir). The Reservoir is not equipped with an emergency spillway, which is required by the DWR's *Rules and Regulations for Dam Safety and Dam Construction*. There is currently a nominal restriction of 0.05 feet (200 AF of storage loss) due to the lack of a spillway. In order to enhance the safety of the Reservoir and prevent further storage restrictions, the Company plans on constructing an emergency spillway. The final design is expected to be complete in January 2010 with construction occurring from July 2010 through March 2011.