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

TO: Colorado Water Conservation Board Members

FROM: Kirk Russell, PE
Tim Feehan, PE, Chief
Finance Section

DATE: May 11, 2010

SUBJECT: **Agenda Item 14c May 18-19, 2010 Board Meeting**
Finance Section – New Project Loans
Parkville Water District – Canterbury Tunnel Repair

Introduction

The Parkville Water District (District) is applying for a loan for the Canterbury Tunnel Repair Project (Project). The Project includes the construction of a vertical bore, installation of a well pump station and 1.5 miles of 12 inch pipeline. The total design and construction cost estimate for the Project is $2,520,000. The Project will allow the District to access water from the Canterbury Tunnel which provided a high quality and reliable water supply until the late 1990's. The loan request is for approximately 70% of the total Project cost. The District has received a $500,000 grant from the Colorado Department of Local Affairs (DOLA) and a $200,000 grant from the California Gulch/Upper Arkansas River Superfund Program. See attached Project Data Sheet for a location map and Project summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $1,838,200 ($1,820,000 for project costs and $18,200 for the 1% Loan Service Fee) to the Parkville Water District for the Canterbury Tunnel Repair Project from the CWCB Construction Fund. The loan terms shall be the Low-Income Municipal interest rate of 4.0% per annum for 30 years. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Background

The portal of the Canterbury Tunnel is located approximately two miles northeast of Leadville along the East Fork of the Arkansas River. The tunnel was constructed during the late 1920's to provide mine drainage. The tunnel was constructed through glacial till material with timber cribbing wall reinforcements for the first 1,200 feet of its length. The remainder of the tunnel was driven into hard rock that did not require continuous structural support. It is believed that the timber cribbing has begun to fail. The tunnel collected deep-seated water and transported it approximately one mile to the portal where the water discharged into the Arkansas River. In 1961, the District constructed a wet well, pump station, and pipeline from the portal to collect the water and pump it into the existing District's distribution system. The tunnel produced high quality groundwater at a constant rate and a year-round temperature of approximately 50 degrees Fahrenheit. Beginning in the late 1990's, the water discharged from the portal experienced turbidity spikes and the flow rate gradually decreased from about 600 gpm to less than 200 gpm. In 2003, the District stopped using the supply because of its diminished flow rate and unpredictable quality. Without the Canterbury Tunnel water supply the District has struggled to meet current water demands during peak summer use and in winter months when the yield of its surface water rights decline.

Loan Feasibility Study

Greg Teter, District Manager, has been the primary contact regarding this loan application. The Loan Feasibility Study, titled "Feasibility Study for the Repair of the Canterbury Tunnel Water Supply", dated April, 2010, was prepared by Bret Swigle, PE, of W.W. Wheeler & Associates. The study includes an engineer's cost estimate and annual financial statements prepared by Kenneth L. Olsen, CPA, PC, of Leadville. The study was prepared in accordance with the CWCB guidelines.

The Parkville Water District

In 1879, the City of Leadville granted a franchise to the Leadville Water Company (Company). The Company acquired water rights and constructed a water supply system which served Leadville for approximately 85 years. The population of Leadville in 1880 was 15,000 and by 1960 it dropped to 4,000. In 1965, the District acquired the Company through condemnation proceedings for $895,130. The District's service area is approximately four square miles and serves 1,964 residential taps and 372 commercial taps (2,336 total customers). The Colorado State Demographers Office has indicated that Leadville may return to a population of 15,000 residents (500% increase) by 2035. The potential reopening of the Climax Mine will have a significant impact on the community.

The District is a Title 32 District with five Directors that have the power to set rates, incur debt and enforce water service assessments. Most of the District's revenues come from monthly metered service charges and connection charges. On May 4, 2010, the District voters passed a ballot question approving debt issuance for the Project and to accept the $700,000 in grant funding.

Water Rights

The District's primary source of water is Evans Gulch. The District has incorporated an additional source of supply from three wells along the East Fork of the Arkansas River. Other sources from

Iowa Gulch, Empire Gulch, and the Canterbury Tunnel are currently inoperable due to the conditions of the facilities or federal treatment regulations. The District's current annual demand is approximately 1,500 AF. The following table shows a summary of the District's water rights and approximate yields available from each water right:

Water Right	Decreed Yield	Actual Yield May-Aug AF	Actual Yield Nov-Apr AF	Actual Yield Total AF
Evans Gulch	8.65cfs	179	79.5	1540
Evans Gulch - Storage	191.3AF			
Elkhorn Shaft	1.46cfs			
Iowa Gulch (1)	11.7cfs	43	24	450
Empire Gulch (1)	2cfs	0	41	245
Arkansas Wells	1.5cfs	23.4	23.4	280
Canterbury Tunnel (2)	1.5cfs	83	83	1,000

(1) Not in operable condition due to the condition of the structures and treatment requirements.
(2) Tunnel is currently in disrepair and the water supply is not available.

Project Description

The District considered three alternatives related to the Project.

No Action Alternative – Take No Action. Without the Canterbury Tunnel supply, the District's source of supply consists of direct flow and storage diversions from Evans Gulch and groundwater provided from the Arkansas Wells. This puts the District at risk of failing to meet demands in the winter and during peak use periods in the summer. During the winter months surface flow in Evans Gulch is minimal and the District relies on supplemental flows from the Arkansas Wells and storage in its Evans Gulch Reservoirs. If there is a late spring runoff, the District could potentially diminish its entire storage supply and fail to meet demand with its groundwater and minimal surface flow sources.

Alternative No. 1 SELECTED - Canterbury Pump Station and Delivery Pipeline to the Evans Gulch Water Treatment Plant. This Alternative involves the installation of a vertical bore, or well, into the tunnel at a location where the tunnel is believed to be sound. A pump will be installed in the well to withdraw water from the tunnel. A pipeline will be installed to convey the tunnel water to the Evans Gulch Reservoir. The vertical bore will be located approximately 1,600 feet from the tunnel portal. According to the geologic profile, the shaft is located in the portion of the tunnel driven through a hard rock formation. At this location, the depth to the tunnel is approximately 250 feet. It is anticipated that the bore will be about 20 to 24 inches in diameter. A small enclosure will be constructed over the well that will house the pump and electrical equipment. Power will be provided to the site by constructing a distribution line from a nearby Xcel power transmission line. Access to the well site will be provided by an existing roadway that parallels the railroad. Minor improvements to this roadway will likely be required as part of the Project. The pipeline conveying the water to Evans Gulch will be approximately 8,200 feet long and will consist of a buried 12-inch

HDPE pipe. To minimize disturbance the pipeline will follow an existing abandoned power-line easement. The pipeline will end at a connection to an existing District pipeline that extends from Evans Gulch Reservoir to the treatment plant. Water from this Project can be delivered either directly to the treatment plant or to storage in Evans Gulch Reservoir. The cost estimate for Alternative No. 1 is $2,520,000.

Alternative No. 2 - Canterbury Pump Station and Use of Existing Wet Well and Pipeline. This Alternative is similar to Alternative No. 1 with the exception that water will be delivered via a 1,800 ft long 12-inch diameter pipeline to the historic portal of the Canterbury Tunnel. The District has an existing wet well at this location where the water was historically captured by the District and delivered to its distribution system. This option does not allow flow through the upper zones of the distribution system and is more expensive. The cost estimate for Alternative No. 2 is $2,820,000.

Engineering and construction component costs for the selected alternative are estimated as follows:

Pump & Well	$ 1,381,000
Powerline	$ 86,000
Pipeline	$ 881,000
Engineering Fees	$ 172,000
TOTALS	$ 2,520,000

Final design is expected to be complete in the summer of 2010 and construction is projected is to occur in the fall/winter of 2010.

Financial Analysis

Table 1 shows a summary of the financial aspects of the loan request. The District is considered a Low-Income Municipal borrower and therefore will receive an interest rate of 4.0% for a 30-year term (Financial Policy #7).

Table 1. Project Financial Summary

PROJECT/LOAN	
Project Cost	$2,520,000
CWCB Loan	$1,820,000
CWCB Loan (Including 1% Service Fee)	$1,838,000
CWCB Annual Loan Payment	$106,300
CWCB Loan Obligation (including 10% debt reserve funding)	$116,900
Project Cost per Acre-Foot (1,086 AF recovered)	$2,320/AF
Number of Taps	2,336
Debt Service per Tap per month	$4.17/mo.

Creditworthiness: The District currently has one short-term loan with Deere Credit, Inc. with a balance of about $80,000 ($35,000 annually) with a maturity date of November 2012. This debt service will expire around the time of the first CWCB loan repayment.

Table 2. Financial Ratios for the Reservoir District

Financial Ratio	Past Years	Future (2012)
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	114% (Average) $980K/860K	100% (Average) $980K/977K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	443% (Strong) $980-825/35K	102% (Average) $980-825K/152K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	23%* (weak) $200K/860K	20%* (weak) $200K/977K
Average Monthly Residential Water Bill weak: >$60 - average: $60 - $30 - strong: <$30	$26/Month (Strong)	$29/Month (Strong)

* Low due to a recent dam improvement project and significant number of watermain breaks

Collateral - Security for the CWCB loan will be a pledge of its water revenues backed by a rate covenant and annual financial reporting. This is in compliance with CWCB Financial Policy #5 (Collateral).

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $1,838,200 ($1,820,000 for project costs and $18,200 for the 1% Loan Service Fee) to the Parkville Water District for the Canterbury Tunnel Repair Project from the CWCB Construction Fund. The loan terms shall be the Low-Income Municipal interest rate of 4.0% per annum for 30 years. Security for the loan shall be in compliance with CWCB Financial Policy #5.

cc: Greg Teter, District Manager
Bret Swigle, PE, WW Wheeler & Associates, Project Manager
Susan Schneider, AGO

Attachment: Water Project Loan Program – Project Data Sheet

CWCB Water Project Loan Program
Project Data Sheet

Borrower: Parkville Water District

County: Lake

Project Name: Canterbury Tunnel Repair

Project Type: Rehabilitation

Drainage Basin: Colorado River

Water Source: East Fork Arkansas

Total Project Cost: $2,520,000

Funding Sources: Construction Fund

Type of Borrower: Low Income - Municipal

Project Diversions: 1,086 AF

Loan Amount: $1,838,200 (Including 1% fee)

Interest Rate: 4.0%

Term: 30 years

The Parkville Water District provides municipal water for the Town of Leadville and surrounding areas. The District provides service to about 2300 taps. The Canterbury Tunnel has been a critical water supply source to the District for over 45 years. The Tunnel originally served as mine drainage; however, because it was of such good quality and reliability the District added it to its water supply system. About 15 years ago, the flow of water was significantly reduced due to a collapse in the tunnel. The District proposes to drill a new well to access the functioning part of the tunnel and pump the water to the District's distribution system. The Project design is nearly complete and construction is projected for the fall/winter 2010.