COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Cole Bedford, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

DATE: March 15-16, 2023 Board Meeting

AGENDA ITEM: 21a. Water Project Loans
Board of Water Works of Pueblo
Southside Diversion Dam Improvement Project

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $9,847,500 ($9,750,000 for project costs and $97,500 for the 1% service fee) to the Board of Water Works of Pueblo for costs related to the Southside Diversion Dam Improvement Project, from the Severance Tax Perpetual Base Fund. The loan term will be 20 years at an interest rate of 2.25% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Additionally, staff recommends the following supplemental condition to be included in the loan contract:

1. This loan shall receive a second-lien priority on the Board of Water Works of Pueblo's net revenues to existing Water Revenue Bond Series 2019 obligations.

Introduction

The Board of Water Works of Pueblo (Pueblo Water) is applying for a low-income municipal rate loan for the Southside Diversion Dam Improvement (Project) reduced by 0.25% for a 20 year term. The Southside Diversion Dam is a large concrete structure spanning the Arkansas River in the City of Pueblo. It serves as a backup diversion point to deliver water to Pueblo Water's water treatment plant and is classified as a low-head dam, which can be extremely hazardous to recreators on the river. The Colorado Department of Natural Resources has made a concerted effort in recent years to eliminate low-head dams in the state, particularly in high-traffic, urban areas like the Southside Diversion Dam occupies. The proposed Project is being undertaken to alleviate this hazard and to improve the dam and surrounding area more broadly. Improvements will include a safer geometry for the dam weir, a bypass channel for boat and fish passage, and riparian restoration. Construction is expected to take place between fall 2023 and spring 2024. The total Project cost is estimated to be $11,715,000. See attached Project Data Sheet for a location map and Project summary.

Borrower – Board of Water Works of Pueblo

Pueblo Water is a public utility which supplies water to the residents of the City of Pueblo in southern Colorado. It was established in 1957 under the City of Pueblo charter, however, it operates as a stand-alone enterprise independent of the City governmental structure. Pueblo Water is led by a five-member Board elected to six-year terms by a vote of City of Pueblo residents. The Board formulates policy, reviews and approves the budget, sets rates, directs long-range planning, and is empowered to incur debt. Pueblo Water employs about 135 people including an Executive Director who is appointed by the Board.

Pueblo Water maintains an extensive and complex raw water collection system and treated water distribution network. Pueblo Water's Whitlock Water Treatment Plant is supplied with water directly from the Bureau of Reclamation's Pueblo Reservoir west of the City. After treatment, water is delivered via a distribution network of more than 580 miles of mains to 40,262 service connections. The entire system serves about 113,000 people.

Background

While the Whitlock Water Treatment Plant is typically supplied via diversionary infrastructure at Pueblo Reservoir, Pueblo Water also maintains a backup system for diverting from the river and supplying the plant if needed. One component of this redundant system is the Southside Diversion Dam.

The Southside Diversion Dam is located about 3.5 miles below Pueblo Reservoir and 0.5 miles above the treatment plant. It was built after the historic 1921 Arkansas River flood and originally served as one of the City of Pueblo's primary water diversions. In subsequent decades — especially after the completion of Pueblo Reservoir in 1975 — the Southside Diversion Dam has ceased to be used regularly for municipal supply. However, the dam is still used to provide water to the relatively small Riverside Dairy Ditch to irrigate alfalfa fields. Deliveries to the treatment plant and Riverside Dairy Ditch are made via an intake on the southern end of the dam.

The Southside Diversion Dam is a monolithic, concrete structure featuring a 200-foot-long weir with a vertical drop of about 10 feet. Structures like the Southside Diversion Dam are known as low-head dams and are extremely hazardous to recreators because of recirculating currents on their downstream sides. Nearly 400 drownings associated with low-head dams have been documented nationwide, including several at the Southside Diversion Dam. CWCB supported the Colorado Low-Head Dam Inventory Project to help identify and improve dams like the Southside Diversion Dam in 2019.

Loan Feasibility Study

Seth Clayton, Pueblo Water Executive Director, supported by Darren Shepherd P.E., with SG1 Water Consulting, Ltd., prepared the Loan Feasibility Study titled, "Feasibility of Arkansas River Southside Diversion Dam Modification and River Improvement Project" dated January 2023. The feasibility study is in accordance with CWCB guidelines and includes an analysis of alternatives, estimated costs, and annual financial reports independently audited by Schmidt, Valentine, Whittemore & Company, P.C.

Water Rights

Pueblo Water utilizes about 25,000 AF of water in an average year. About 90% of this supply is provided by native flows in the Arkansas River. The remainder comes from transmountain diversions from the Colorado River basin. Water is typically diverted directly from Pueblo Reservoir, but in the event of an emergency or maintenance shutdown, the Southside Diversion Dam can be used as a backup diversion point. Pueblo Water also regularly delivers a small amount of water diverted from the Southside Diversion Dam to the Riverside Dairy Ditch for irrigation. Pueblo Water also leases 30,000 AF to 40,000 AF to other water users each year. A summary of the most relevant water rights associated with the Project are shown in Table 1.

TABLE 1: WATER RIGHTS

Name	Amount (cfs)	Appropriation Date	Adjudication Date	Case No.
Board of Water Works of Pueblo	93.00	04/01/1861 - 07/01/1985	03/23/1896 - 12/31/1986	13CW3043 16CW3103 86CW0111A 86CW0111B 90CW0055 98CW0171 99CW0169A CA19693 CA20077 W0076 W0145
Riverside Dairy Ditch	1.00	01/01/1883	03/23/1896	CA2535

Project Description
The purpose of this Project is to reduce risk to river recreators and ensure the Southside Diversion Dam's continued ability to divert water to the Whitlock Water Treatment Plant and Riverside Dairy Ditch.

Alternative 1 – No Action: Taking no action would leave the Southside Diversion Dam in place in its existing dangerous configuration. While the least expensive option, the dam would continue to be a hazard to recreators, so this option was not selected.

Alternative 2 – Narrow Scope Improvement: This alternative would eliminate the low-head dam configuration of the Southside Diversion Dam and ensure the continued ability to divert water to the treatment plant and Riverside Dairy Ditch, but make no additional improvements. The work would likely consist of lengthening the slope of the weir so that the drop on the downstream side is more gradual as well as minor improvements to the intake. This would accomplish the Project Purpose by the narrowest possible means. However, it would not take advantage of the opportunity to make broader improvements presented by the engineering investigation and contractor mobilization. This alternative would likely cost less than half of Selected Alternative 3, but fail to capitalize on the opportunity for broader improvements whose cost would be greater if undertaken at a later date.

Selected Alternative 3 – Broad Scope Improvement: This alternative involves eliminating the low-head dam configuration of the Southside Diversion Dam, making improvements to the intake infrastructure, constructing a bypass channel for recreator and fish passage, and improving the riparian ecology in the vicinity of the dam. The primary Project Purpose will be met by lengthening the slope of the downstream side of the dam weir so that recreators may pass safely over it and by making improvements to the intake infrastructure. Additionally, this alternative takes advantage of the opportunity presented by the engineering investigation and contractor mobilization to make broader improvements to the dam and vicinity. A bypass channel with several pools will be constructed adjacent to the dam. Other improvements include bank stabilization, installation of new vegetation, and improved fish passage. A pedestrian bridge will also be installed to provide easier and safer access for recreators. The total estimated cost of this alternative is $11,715,000 as shown in Table 2.

TABLE 2: ESTIMATED PROJECT COST

Tasks	Cost
Engineering, Design, and Model	$1,200,000
Mobilization	$875,000
Earthwork	$2,700,000
Concrete and Riprap	$4,200,000
Pedestrian Bridge	$1,000,000
Miscellaneous Work (Clearing, Grubbing, Demo, Etc.)	$865,000
Contingency (13%)	$875,000
TOTAL	**$11,715,000**

Permitting: A US Army Corps of Engineers 404 Permit will be required and is currently being pursued.

Schedule: About 75% of the Project's design phase is complete. Coordination among the several financing agencies is ongoing. It is anticipated that the project will be bid in the summer of 2023 and construction started in fall 2023. Construction is expected to be complete by the time high spring flows arrive in 2024.

Financial Analysis

Table 3 provides a summary of the Project's financial aspects. In addition to the loan, project costs will be covered by contributions from Pueblo Water, the City of Pueblo, Pueblo County, and the Pueblo Conservancy District. Pueblo Water qualifies for a low-income municipal interest rate of 2.50% for a 30-year loan. Because Pueblo Water is requesting a 20-year loan, the interest rate is decreased by 0.25% for a final rate of 2.25%. All interest rate evaluations are per CWCB Financial Policy #7 (Lending Rate Determination).

TABLE 3: FINANCIAL SUMMARY

Project Cost	$11,715,000
Pueblo Water Contribution	$990,000
Partner Contributions	$975,000
CWCB Loan Amount	$9,750,000
CWCB Loan Amount (Including 1% Service Fee)	$9,847,500
CWCB Annual Loan Payment	$616,868
CWCB Annual Loan Obligation (1st Ten Years)	$678,555
Number of Service Connections	40,262
Current Average Monthly Water Bill (1" Connection)	$39.80
Monthly Loan Obligation per Connection	$1.40
Future Average Monthly Water Bill (Estimate)	$41.20[1]

[1]Pueblo Water uses a tiered rate structure based on meter size and distinguishes between operating costs and debt financing when setting service rates, so that the debt obligation will not be distributed evenly among all users. This estimate is provided for reference only.

Creditworthiness: Pueblo Water's only long-term liability is their obligation on the Water Revenue Bond Series 2019. The 2019 series issuance was $21,356,804 to refinance existing bonds at lower rates. This existing debt is described in Table 4. Pueblo Water has requested that CWCB's take a second-lien priority to its Water Revenue Bond Series 2019 obligation as loan security. Staff has determined Pueblo Water to be a strong borrower with a solid financial standing and reliable revenues far in excess of the loan obligation. For these reasons, Staff believes that a second-lien priority provides ample security on the loan. Financial ratios are shown in Table 5.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
Water Revenue Bond Series 2019	$21,356,804	$21,356,804	$3,063,933	2029	Pledged Revenues

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% | average: 100% - 120% | strong: >120%	132% (strong) $41.0M/$31.0M	129% (strong) $41.0M/$31.7M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% | average: 100% - 120% | strong: >120%	433% (strong) ($41.0M-$28.0M) $3.0M	351% (strong) ($41.0M-$28.0M) $3.7M
Current Assets to Current Expenses weak: <50% | average: 50% - 100% | strong: >100%	129% (strong) $40.0M/$31.0M	123% (strong) $39.0M/$31.7M
Debt per Tap (40,262) weak: >$5,000 | average: $2,500 - $5,000 | strong: <$2,500	$531 (strong) $21.4M/40.3K	$774 (strong) $31.2M/40.3K
Average Monthly Water Bill weak: >$60 | average: $30 - $60 | strong: <$30	$39.80 (average)	$41.20 (average)

Collateral: Security for this loan will be a pledge of revenues subordinated to the existing Water Revenue Bond Series 2019 backed by a rate covenant. This security is in compliance with the CWCB financial Policy #5 (Collateral).

cc: Seth Clayton, Executive Director, Board of Water Works of Pueblo
Jennifer Mele, Colorado Attorney General's Office

Attachments: Water Project Loan Program – Project Data Sheet

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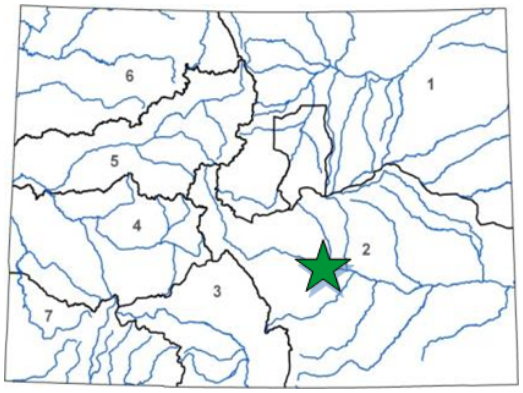
Southside Diversion Dam Improvement Project

Board of Water Works of Pueblo

March 2023 Board Meeting

LOAN DETAILS	
Project Cost:	$11,715,000
CWCB Loan (with 1% Service Fee):	$9,847,500
Loan Term and Interest Rate:	20 Yrs @ 2.25%
Funding Source:	STPBF
BORROWER TYPE	
Agriculture 0%	*Municipal* 100% Low - 0% Mid - 0% High *Commercial* 0%
PROJECT DETAILS	
Project Type:	Diversion Rehabilitation
Average Annual Diversions:	25,000 AF



Pueblo Water is a public utility which supplies water to the residents of the City of Pueblo in southern Colorado. It serves a population of about 113,000.

LOCATION	
County:	Pueblo
Water Source:	Arkansas River
Drainage Basin:	Arkansas
Division: 2	*District:* 12

While Pueblo Water's water treatment plant is typically supplied via diversionary infrastructure at Pueblo Reservoir, Pueblo Water also maintains a backup system for diverting from the river and supplying the plant if needed. One component of this redundant system is the Southside Diversion Dam. The Southside Diversion Dam is a large concrete structure spanning the Arkansas River. The dam is classified as a low-head dam, which can be extremely hazardous to recreators on the river. Nearly 400 drownings associated with low head dams have been documented nationwide, including several at the Southside Diversion Dam. The proposed project is being undertaken to alleviate this hazard and to improve the dam and surrounding area more generally. Improvements will include a safer geometry for the dam weir, a bypass channel for boat and fish passage, and riparian restoration. Construction is expected to take place between fall 2023 and spring 2024.