COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Derek Johnson, P.E., Project Manager
Kirk Russell, P.E. Finance Section Chief

DATE: May 17-18, 2017 Board Meeting

AGENDA ITEM: 27c. Water Project Loans
City of Walsenburg – City Lake Dam Rehabilitation & Enlargement

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Introduction

The City of Walsenburg (City), acting by and through its water activity enterprise, is applying for a loan for the City Lake Dam Rehabilitation & Enlargement (Project). The City seeks to construct repairs and improvements to its City Lake dam and reservoir, which provides the primary water supply and storage for the City's water treatment plant, located downstream of the dam embankment. This dam has been subject to a State Engineer's Office (SEO) safety compliance plan since September of 2014 and a formal storage restriction since April 2017 as a result of identified dam safety deficiencies. As part of this Project, reservoir storage will be increased by 120 acre-feet to store recently obtained water rights by raising the dam embankment three feet. Estimated Project costs are $6,821,000. The City is requesting a loan from the CWCB for 100% 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 $6,889,210 ($6,821,000 for Project costs and $68,210 for the 1% service fee) to the City of Walsenburg, acting by and through its water activity enterprise, for costs related to the City Lake Dam Rehabilitation & Enlargement Project from the Construction Fund. Loan terms shall be 30 years at the reduced municipal low income interest rate of 2.05% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Background
The City owns and operates a system of five reservoirs and six dams, including City Lake Dam. The City operates a water treatment plant located approximately three miles west of the City and a short distance downstream of the City Lake Dam. Treated water is pumped to a storage tank adjacent to the plant and distributed to water tap customers via the City's water distribution network.

City Lake Dam has been subject to a State Engineer's Office (SEO) dam safety compliance plan since September of 2014 as a result of identified dam safety deficiencies, including factors of safety for seepage and stability, and the inability of the existing spillway capacity to carry the required Inflow Design Flood. The dam safety compliance plan required the City to complete a number of specific actions to address the deficiencies. This compliance plan imposes a 1-foot storage restriction on April 1, 2017, a 2-foot storage restriction on November 15, 2017, and a 3-foot storage restriction on May 1, 2019. Out of a current City Lake storage capacity of 480 acre-feet, the accumulated loss of storage associated with each progressive storage restriction are, progressively, 41.8 acre-feet, 81.4 acre-feet, and 119.1 acre-feet. The City became subject to a formal Storage Restriction Order on April 17, 2017, restricting the water surface to a level one foot below the spillway crest, consistent with the terms of the dam safety compliance plan. The storage restriction not only reduces the amount of available water supply to the treatment plant and pressure head to push water through the treatment plant's filters.

Loan Feasibility Study
Michael Graber, P.E. of RJH Consultants prepared the Loan Feasibility Study titled "Feasibility Evaluation - Walsenburg City Lake Dam Rehabilitation and Enlargement", dated March 2017. Audited financial statements were prepared by RubinBrown LLP. The feasibility study, prepared in accordance with CWCB guidelines, includes an analysis of alternatives, preliminary engineering design, and construction cost estimates. The study was funded by a $49,000 CWCB Feasibility Study Grant that was approved at the January 2017 Board meeting.

Borrower – City of Walsenburg
The City was the first statutory City in Territorial Colorado, incorporated in 1873, and is the county seat of Huerfano County. The City operates both a water activity and sewer activity enterprises. The water activity enterprise provides potable water to 2,900 customers and 1,700 taps, of which 1,511 are residential taps, the remainder being business, municipal, and industrial users.

Water Rights
The City's most senior water rights are diverted from the Cucharas River, at a location upstream from the Town of La Veta. Water diverted at this location can be stored within or conveyed through two of the City's smaller reservoirs to the Walsenburg City Pipeline. The pipeline delivers water from the upper reservoirs to City Lake, where it can either be stored, delivered to the water treatment plant, or flow through to the City's downstream storage in Lake Miriam and Lake Oehm (also known as the "Coler System Reservoirs"). This is the City's primary method of delivering water to the treatment plant. The associated water rights are listed in Table 1 below, under the 'Walsenburg Pipeline Direct Flow Rights' and 'Walsenburg Pipeline Storage Rights' sections. Deliveries from the Walsenburg Pipeline to City Lake for water treatment plant use have averaged 730 acre-feet/year over the past five years. The City anticipates that its recently changed Gomez Ditch water will be stored in the additional City Lake capacity resulting from this Project. Under the City's Gomez Ditch change of use decree, with administrative approval, the City can exchange Gomez Ditch water that is stored within the Coler System Reservoirs to City Lake, which can then be delivered to the water treatment plant.

The City owns the following decreed water rights conveyed to City Lake under typical operations:

TABLE 1: IMPACTED WATER RIGHTS

Name	Adjudication Date	Appropriation Date	Water Court Case No's	Decreed Rate or Volume
Walsenburg Pipeline Direct Flow Rights (CFS)[1]				
Francisco & Daigre Mill Ditch No. 1	6/12/1889	5/30/1863	W-3266 W3848	0.2917 CFS
Calf Pasture Ditch No. 2	6/12/1889	6/15/1863	W-3266 W3848	0.50 CFS
Calf Pasture Ditch No. 2	6/12/1889	5/01/1871	W-3266 W3848	0.50 CFS
Francisco & Daigre Mill Ditch No. 1 (1st Enlargement)	6/12/1889	6/30/1864	W-3266 W3848	4.0833 CFS
Guillen Ditch No. 4	6/12/1889	5/15/1865	W-3266 W3848	1.00 CFS
Guillen Ditch No. 4	6/12/1889	5/15/1865	W-3266 W3848	0.50 CFS
Walsenburg Pipeline	10/3/1921	5/2/1904	CA-1414	7.00 CFS
Walsenburg Pipeline Storage Rights (AF)				
City Lake (Walsenburg Reservoir)	10/3/1921	5/2/1904	W-3266 W3848	411.46 AF
Gomez Ditch Water Rights (CFS) [1]				
Gomez Ditch	6/12/1889	6/08/1868	2011CW56	0.533 CFS
Gomez Ditch	2/23/1898	4/10/1888	2011CW56	1.167 CFS

(1) Water can be stored when not needed immediately for municipal uses.

Project Description

The purpose of this Project is to make repairs to the City Lake Dam, removing the SEO storage restriction, and constructing 120 acre-feet of additional storage for the recently changed Gomez Ditch water rights. Alternatives analyses performed toward these goals include:

Alternative 1 – No-Action: The no-action alternate was not selected, as the SEO storage restriction would remain in-place and long-term loss of reservoir storage and associated storage rights in City Lake Dam would be a likely eventuality. Any reduction of the storage level in the reservoir has a negative effect on the pressure head delivering water to the treatment plant's filters. While it may be possible to install an auxiliary pumping system to boost pressure and flow rate, this would require a plant modification and the encumbrance of a long term operating expense, pending investigations by water treatment plant design engineers to determine if this option is feasible.

Alternative 2 – Storage via Alternate Reservoir Sites: The City analyzed the use of other storage reservoirs already owned by the City, but none could readily supply the water treatment plant without the construction of extensive pumping, underground delivery systems, and attendant operation and maintenance costs. While there exists an existing 8 inch pipeline from Martin Reservoir located approximately 2 miles northeast of City Lake to the treatment plant, water from Martin Lake must be pumped to the treatment plant and is limited to a maximum capacity of 0.9 million gallons per day

(MGD) which is far short of the currently needed 3.67 MGD. A much larger pipeline and pumping system would be required to pump water from Martin Lake to the water treatment plant. Negatives towards developing this delivery system to the treatment plant include initial design and construction costs, continuous operations and maintenance costs for the pumping system, and a much lower raw water quality that would in turn increase treatment costs.

Selected Alternative 3 – Dam Rehabilitation and Enlargement: The City chose to rehabilitate the existing City Lake Dam to maintain the required level of storage for water treatment plant capacity in their most important reservoir, with the added benefit of being able to raise the dam crest higher to provide additional storage for a fractional increase in costs to the overall project.

The City will rehabilitate and enlarge the existing City Lake Dam, removing the existing dam embankment to bedrock level, rebuilding the embankment blending existing removed embankment material with imported borrow embankment material, constructing a new outlet works, and constructing a new 50-foot wide principle service spillway on the east side of the dam embankment. The new dam embankment will be constructed three feet higher, in generally the same location, with slight alignment changes to improve clearance issues with overhead power lines and the State Highway 160 right-of-way, tapering farther upstream to accomplish the additional three feet dam height. Additional design elements include acquisition of rights-of-way or easements for access to the west side of the reservoir, replacing current access that will be inundated by the new storage water level, and an easement or purchase of privately owned land for stockpiling, blending, and processing imported embankment material. To accommodate loss of water supply while the reservoir is drained for construction, a temporary reservoir water supply pipeline will be constructed within the current reservoir footprint to convey water to the water treatment plant.

Project costs are shown in Table 2 below, the estimates for which were developed from a completed 30% design.

TABLE 2: PROJECT COST

Task	Cost
General Site Work	$631,800
Embankment	$3,755,200
Outlet Works	$382,200
Auxiliary Spillway	$209,800
Construction Subtotal	$4,979,000
Contingencies	$747,000
Design Engineering	$498,000
Construction Engineering and Testing	$597,000
TOTAL	**$6,821,000**

Permitting: The United States Army Corps of Engineers has given preliminary approval to a nationwide maintenance permit for Section 404 of the Clean Water Act. The State Engineers Office is currently reviewing the 30 percent design documents and has agreed to fast-track their review and approval to accommodate the current schedule. The need to haul embankment material across US Highway 160 from Lathrop State Park requires a permit from the Colorado Division of Mine Safety (10 days processing) and the Colorado Department of Transportation, which has indicated a highway access permit for the crossing will be granted. The Huerfano county planning department has indicated they

will accept a FEMA Letter of Map Amendment (LOMAR) to the designated floodplain for the increased reservoir water surface elevation. The City is currently working with the Huerfano County Planning Department to define the extent of the 1041 land use permit. The City expects, based on work completed to date, to have all permits approved by the scheduled start of construction.

Schedule: Final Design will commence upon loan contract approval. Review and approval of the dam construction plans is expected to occur over the summer of 2017, followed by the conclusion of permitting and a bid process in advance of construction over the 2017/2018 winter.

Financial Analysis

The City qualifies for a low-income municipal interest rate of 2.55% for a 30-year term. Due to the SEO storage restriction imposed on April 1, 2017, the City qualifies for an additional 0.5% interest rate reduction per Financial Policy #7, with a resulting interest rate of 2.05%.

Table 3 provides a summary of the Project's financial aspects.

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	$6,821,000
CWCB Loan Amount	$6,821,000
CWCB Loan Amount (Including 1% Service Fee)	$6,889,210
CWCB Annual Loan Payment	$309,722
CWCB Annual Loan Obligation (including reserve account)	$340,694
Monthly Cost of Loan per Tap (1,700 taps)	$16.70
Project cost per acre-foot storage (as enlarged to 601 AF)	$11,350

Creditworthiness: The City carries debt tied to both its water activity enterprise and sewer activity enterprise. The annual obligation for the $714,000 annual principal and interest payment is split evenly between these two entities, as shown in the table below. The Series 2007 Bonds were issued by George K. Baum and Company for the construction of the water treatment plant and the wastewater treatment plant. The City will need to increase its water rates by an average of $6.07 per month per tap to support the additional debt from this project.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
Series 2007 Revenue Bonds	$9,700,000	$6,900,000	$357,000	2032	Water and sewer revenues

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Past Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% average: 100% - 120% strong: >120%	127% (strong) $1.33M / $1.05M	105% (average) $1.46M(1) / $1.39M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% average: 100% - 120% strong: >120%	180% (strong) ($1.33M-$690K) $357K	110% (average) ($1.46M-$690K) $697.7K
Cash Reserves to Current Expenses weak: <50% average: 50% - 100% strong: >100%	77% (average) $807K / $1.05M	63% (average) $877K / $1.39M
Debt per Tap (Based on 1,700 Taps) weak: >$5,000 - average: $2,500 - $5,000 - strong: < $2,500	$2,029 (strong) $6.9M / 1,700	$6,042 (weak) $13.79M / 1,700
Average Monthly Water Bill weak: >$60 - average: $30 - $60 - strong: >$30	$62.31 (weak)	$68.38 (weak)

(1) Assumes a $6.07 per month increase to monthly water bills.

(2) Half of the Series 2007 Revenue Bonds annual payment is attributed to the this Coverage Ratio

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

cc: Leslie Klusmire, City Administrator, City of Walsenburg
Jennifer Mele, Colorado Office of the Attorney General

Attachment: Water Project Loan Program – Project Data Sheet

COLORADO
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City Lake Dam Rehabilitation & Enlargement

City of Walsenburg

May 2017 Board Meeting

LOAN DETAILS	
Project Cost:	$6,821,000
CWCB Loan (with Service Fee):	$6,889,210
Loan Term and Interest Rate:	30 years @ 2.05%
Funding Source:	Construction Fund

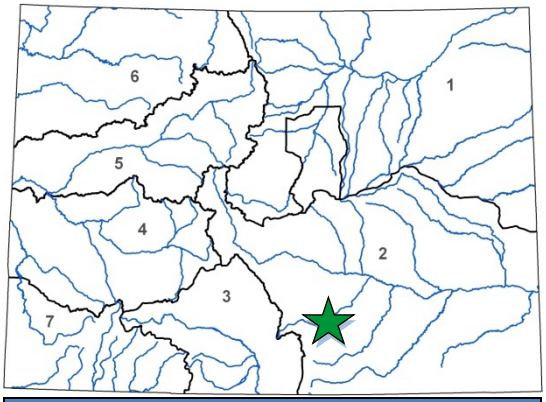
BORROWER TYPE		
Agriculture	*Municipal*	*Commercial*
0%	100% Low - 0% Mid - 0% High	0%

PROJECT DETAILS	
Project Type:	Reservoir Rehabilitation
Average Annual Delivery:	730 AF
Total Reservoir Storage:	601 AF
Water Storage Developed:	120 AF

The City of Walsenburg's City Lake dam and reservoir provides the primary water supply and storage for the City's water treatment plant located downstream of the dam embankment. This dam has been subject to a State Engineer's Office (SEO) safety compliance plan since September of 2014, and a formal storage restriction since April 2017 as a result of dam safety deficiencies including seepage, stability, and spillway capacity. The dam safety plan requires the City to complete a number of specific actions to address the deficiencies. This plan imposes a 1-foot storage restriction on April 1, 2017, a 2-foot storage restriction on November 15, 2017, and a 3-foot storage restriction on May 1, 2019.

The City needs the full storage capacity of City Lake to adequately supply their water treatment plant and to ensure future water supplies.

Elements of the Project include dam embankment reconstruction, new outlet works, new spillway construction, riprap channel lining, and a temporary bypass conduit to route water to the water treatment plant. The improvements will accommodate an increase of existing storage by 120 acre-feet by raising the dam embankment three feet. Construction is planned for 2017/2018.



LOCATION			
County:	Huerfano		
Water Source:	Cucharas River		
Drainage Basin:	Arkansas River		
Division:	2	*District:*	*16*