



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 10-11, 2021 Board Meeting

AGENDA ITEM: 19c. Water Project Loans
Logan Irrigation District - Prewitt Reservoir Rehabilitation

Staff Recommendation:

Staff recommends the Board approve a loan not to exceed \$1,578,630 (\$1,563,000 for Project costs and \$15,630 for the 1% service fee) to the Logan Irrigation District for costs related to the Prewitt Reservoir Rehabilitation Project, from the Construction Fund. The loan terms shall be 30 years at an interest rate of 0.70% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Introduction:

The Logan Irrigation District (LID) is applying for a CWCB blended interest rate loan, reduced due to a dam safety storage restriction, for the Prewitt Reservoir Rehabilitation (Project). The storage capacity of Prewitt Reservoir (Reservoir) is currently restricted and does not have access to 5,059 AF of storage space due to risk presented by wave action against the dam. LID has worked with the Dam Safety Branch of the State Engineer's Office (SEO) to develop the Project, which will satisfy SEO's concerns allowing them to lift the restriction. This Project will consist of installing a toe drain and wave breaks on certain lengths of the dam face. The Reservoir is operated through the Prewitt Operating Committee (Operating Committee) made up of the three entities which share ownership in the Reservoir, LID, Iliff Irrigation District, and Morgan Prewitt Reservoir Company. LID is requesting this loan on behalf of the Operating Committee. The total Project cost is estimated to be \$1,563,000. See attached Project Data Sheet for a location map and Project summary.



Borrower - Logan Irrigation District:

LID was formed on December 19, 1910 by order of the Logan County Commissioners and operates as an irrigation district under the Irrigation District Law of 1905. The LID office is located in Sterling and is managed by three elected governing board members. LID provides water for both irrigation and augmentation. Irrigated acreage within the service area is primarily used to grow corn, alfalfa, sugar beets, pinto beans, and feed crops.

Typically, about 50% of the LID revenues comes from acreage assessments and 50% from State recreation leases. The Logan County Treasurer serves as the ex officio LID Treasurer and collects and distributes assessments in the same manner as property taxes are collected. There are 125 landowners and 12,818.9 acres in LID.

Following adoption of a budget resolution in October, LID certifies the required levy to the Logan County Commissioners, with copies to the State Treasurer and Department of Local Affairs. LID may also refuse delivery of water to lands until all past due or delinquent assessments have been paid in full.

Because this loan contract exceeds \$400,000, the Irrigation District Law of 1905 requires LID to hold a special election of the legal electors in the District to authorize and ratify the contract.

Iliff Irrigation District (Cooperating Entity): IID was formed on March 6, 1911 also under the Irrigation District Law of 1905. Its service area extends from about midway between Sterling and Iliff east to about 3 miles east of Crook.

Morgan Prewitt Reservoir Company (Cooperating Entity): MPRC was organized as a Colorado non-profit corporation on February 10, 1923. MPRC serves various properties in Morgan and Logan Counties.

Background

The Reservoir is located in Washington and Logan Counties and is a State Wildlife Area. Ownership of the Reservoir is shown in Table 1 below. Together the owners formed the Prewitt Operating Committee in 2006. The Operating Committee is a management organization used to perform Reservoir operations. Though it was officially formed in 2006, the three entities have worked in this manner for over 90 years and have demonstrated an excellent working relationship. Currently, the Manager for the Operating Committee also serves as the Manager of all three Cooperating Entities.

TABLE 1: PREWITT RESERVOIR OWNERSHIP

Name	Ownership Interest
Logan Irrigation District (LID)	17/31 (54.8%)
Iliff Irrigation District (IID)	8/31 (25.8%)
Morgan Prewitt Reservoir Company (MPRC)	6/31 (19.4%)

LID has agreed to be the loan contract Borrower and accept full financial responsibility for the execution and repayment of this loan. IID and MPRC will be cooperating entities, providing a pro-rata share of the loan payment to LID through a special agreement among the three owner entities.

The Reservoir was built in 1910 and has a current available capacity of 29,000 AF. In 1991, the SEO restricted the Reservoir for lack of an adequate spillway and concerns with wave overtopping in extreme wind events. Under the storage restriction, the Reservoir is not allowed to fill the top 1.5 feet resulting in a storage loss of 3,300 AF. In 2006, LID on behalf of the Operating Committee, obtained a CWCB loan to construct an emergency spillway. This was successfully completed; however, the storage restriction remains in place due to the wave concerns.

Loan Feasibility Study

The Loan Feasibility Study titled “Feasibility of the Prewitt Reservoir Rehabilitation Project” dated January 2021 was prepared under the direction of James T. Yahn, P.E., Manager of the Logan Irrigation District. It is in accordance with CWCB guidelines and includes an analysis of alternatives, preliminary engineering design, and a construction cost estimate. Also submitted were recent years’ Annual Financial Reports prepared by Littjohann, Kauffman, and Pederson CPAs.

Water Rights

Prewitt Reservoir’s water rights are shown in Table 2. The Reservoir’s water is a supplemental supply for over 250 landowners/shareholders irrigating approximately 30,000 acres and an augmentation source for over 550 wells. The average annual diversion of the Reservoir is 40,160 AF.

TABLE 2: PREWITT RESERVOIR WATER RIGHTS

Name	Amount (AF)	Appropriation Date	Adjudication Date	Water Court Case No.
Prewitt Res (Priority 75A)	32,300	5/25/1910	1/15/1914	CA2142
Prewitt Res (Priority 75R, Refill)	34,960	12/31/1929	10/18/1965	CA16704

Project Description

The objective of the Project is to remove the storage restriction on the Prewitt Reservoir allowing it to utilize its full 32,300 acre-feet of storage space:

Alternative 1 - No Action: This alternative was considered unacceptable. Development of this storage space elsewhere in the lower South Platte Basin is very limited and expensive. This space already has an existing diversion and conveyance capabilities. Improving Prewitt Reservoir represents a very efficient means of restoring lower basin storage.

Alternative 2 - Connect the Prewitt Reservoir Dead Pool: This alternative would dredge sediment that is currently blocking 1,604 AF in the reservoir bottom from being connected to the Reservoir’s outlet works. It’s estimated that 162,500 cubic yards (101 AF) of material would need to be dredged in order to connect the dead pool to the outlet structure. Different methods of dredging were considered and hydraulic cutterhead dredging was identified as the most cost-effective option. While this alternative would create and renew some storage in the reservoir, it would not address the core issue of the storage restriction. For this reason, this alternative was also considered unacceptable at this time. A Water Project Loan of \$1.8 million and a Water Plan Grant of \$1.4 million were previously approved for this alternative by the Board in May 2019, however, neither has yet been contracted. In light of the current loan request, LID and the Operating Committee intend to revisit this alternative and decide whether to proceed with the dredging project.

Selected Alternative 3 - Remove the Storage Restriction: This alternative will make improvements to mitigate wave runoff on the structure. Successful mitigation will remove the storage restriction, allowing the use of 3,300 AF on ‘top’ of the reservoir. Wave mitigation methods studied included: (1) beaching dredge material on the dam face, (2) placing soil cement in a stair-step or plating method on the dam face, (3) constructing parapet walls on the dam to increase its freeboard, and (4) installing breakwaters to reduce wave energy. This last alternative was determined to be the most cost effective and the SEO has indicated that installing the breakwaters in combination with a toe drain will be sufficient to remove the storage restriction.

The total Project cost associated with installing the toe drain and wave breakers is \$1,563,000 as shown in Table 3.

TABLE 3: ESTIMATED PROJECT COST

Task	Total
Toe Drain	\$241,000
Concrete Piers	\$222,000
Drill, Set, and Epoxy Concrete Piers	\$291,000
Precast Concrete Top Plates	\$345,000
Set and Weld Top Plates	\$299,000
Other (Mobilization, Unloading, Layout, Modifications, Tools)	\$45,000
Contingency (10%)	\$120,000
TOTAL	\$1,563,000

Permitting: Work will take place within the Reservoir’s footprint and no new rights-of-way or easements will be required. It is anticipated that work will be either exempt from US Army Corps of Engineers permits or fall within a nationwide permit. SEO has been closely involved in the development of the project and has approved it as adequately eliminating the need for the storage restriction.

Schedule: Design efforts are complete. Construction is expected to begin in summer 2021 and continue for about four months.

Financial Analysis

Table 4 provides a summary of the Project’s financial aspects. Based on the current ownership of the Reservoir the blended interest rate of 0.95% for a 30-year term (Ownership: 91% Agricultural, 2% Low-Income Municipal, 7% High-Income Municipal). This rate is reduced by 0.25% due to its Reservoir’s storage restriction, per Policy Number 7. This results in an interest rate of 0.70% for a 30-year term.

As discussed above, LID, IID, and MPRC will enter into a special agreement that will obligate each entity to pay a portion of the annual loan payment based on its pro-rata ownership share. Because LID will be fully responsible to CWCB for the full loan debt, CWCB staff prepared the financial analysis assuming no financial contributions are received from IID or MPRC. However, ratios based on LID’s pro-rata obligation are also shown for reference.

TABLE 4: FINANCIAL SUMMARY

Total Project Cost	\$1,563,000
CWCB Loan Amount	\$1,563,000
CWCB Loan Amount (Including 1% Service Fee)	\$1,578,630
CWCB Annual Loan Payment	\$58,523
CWCB Annual Loan Obligation (1 st Ten Years)	\$64,375
LID Pro-Rata Annual Loan Obligation (17/31 ownership)	\$35,302
LID Assessed Acres	12,818.9
Annual Loan Obligation per Acre	\$5.02
LID Pro-Rata Annual Loan Obligation per Acre	\$3.53
Current Acreage Assessment per Acre	\$4.00
Estimated Acreage Assessment per Acre	\$7.53
Project Cost per AF of Storage Recovered (3,300 AF)	\$478

Creditworthiness: The District has \$195,588 in existing long-term debt from one CWCB loan as shown in Table 5. That loan was used to construct an emergency spillway in 2006 at Prewitt Reservoir and the emergency spillway loan was taken out by LID on behalf of the Operating Committee. That loan is in good standing. Additionally, a Water Project Loan of \$1.8 million and a Water Plan Grant of \$1.4 million were previously approved by the Board in May 2019 for dredging work. Neither the loan nor the grant, however, has yet been contracted. In light of the current loan request, LID and the Operating Committee may not proceed with the dredging project and therefore it was not considered in the LID’s financial ratios.

TABLE 5: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
CWCB (C150229)	\$498,676	\$195,588	\$31,937	2027	Annual Acreage Assessment Revenues

TABLE 6: FINANCIAL RATIOS

Financial Ratio	Prior Years	Future w/ Project (100% Obligation)	Future w/ Project (Pro-Rata Obligation)
Operating Ratio (revenues/expenses) weak: <100% average: 100% - 120% strong: >120%	100% (average) \$112K/\$112K	100% (average) \$176K/\$176K	100% (average) \$147K/\$147K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% average: 100% - 120% strong: >120%	100% (average) (\$112K-\$94K) \$18K	100% (average) (\$176-\$94K) \$82K	100% (average) (\$147K-\$94K) \$53K
Cash Reserves to Current Expenses weak: <50% average: 50% - 100% strong: >100%	63% (average) \$70K/\$112K	40% (weak) \$70K/\$176K	48% (weak) \$70K/\$147K
Annual Operating Cost per Acre-Foot (40,160 AF) weak: >\$20 average: \$10 - \$20 strong: <\$10	\$2.80 (strong) \$112K/40K AF	\$4.40 (strong) \$176K/40K AF	\$3.68 (strong) \$147K/40K AF

Collateral: Security for this loan will be a pledge of revenues collected through the annual tax levy upon the lands of the Logan Irrigation District. This security is in compliance with the CWCB Financial Policy #5 (Collateral).

cc: Jim Yahn, Manager: Logan Irrigation District, Iliff Irrigation District, Morgan Prewitt Reservoir Company, and Prewitt Operating Committee
 Jennifer Mele, Colorado Attorney General’s Office

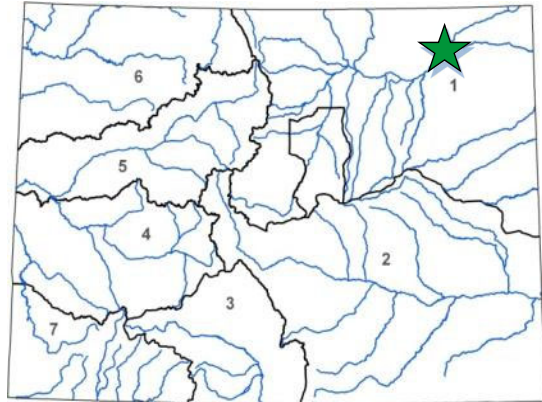
Attachment: Water Project Loan Program - Project Data Sheet



Prewitt Reservoir Rehabilitation

Logan Irrigation District
 March 2021 Board Meeting

L O A N D E T A I L S	
Project Cost:	\$1,563,000
CWCB Loan (with 1% Service Fee):	\$1,578,630
Loan Term and Interest Rate:	30 Yrs @ 0.70%
Funding Source:	Construction Fund
B O R R O W E R T Y P E	
Agriculture	Municipal
91%	2% Low - 0% Mid - 7% High
Commercial	0%
P R O J E C T D E T A I L S	
Project Type:	Reservoir Rehabilitation
Preserved Storage:	32,300 AF
Recovered Storage:	3,300 AF
Average Annual Diversions:	40,160 AF



L O C A T I O N	
County:	Logan
Water Source:	South Platte River
Drainage Basin:	South Platte
Division: 1	District: 64

The Logan Irrigation District (District) was formed in Logan County in 1910, and currently provides water for irrigation and augmentation to 125 landowners on approximately 12,800 acres. The District delivers water for Well User groups such as South Platte, Pawnee, and Logan, and the City of Sterling for well pumping replacement. Irrigated acreage in the District grows corn, alfalfa, sugar beets, pinto beans, and feed crops.

The dam was constructed in 1910 and measures 3.5 miles long and 36 feet high. It is owned and operated by the Prewitt Operating Committee (POC) which includes the Iliff Irrigation District, the Morgan Prewitt Reservoir Company, and the District. As the majority shareholder, the District is assuming financial responsibility for the loan and will be responsible for collecting from other POC members. The project involves installing wave breaks and a toe drain in order to remove a State Engineer Office (SEO) Dam Safety storage restriction restoring 3,300 AF to the reservoir. Construction is expected to begin in the summer of 2021, and finish before the spring of 2022.

