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: September 16-17, 2020 Board Meeting

AGENDA ITEM: 8b. Water Project Loans
The City of Grand Junction – Purdy Mesa Flowline Replacement Project

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Staff Recommendation:

Staff recommends the Board approve a loan not to exceed $7,070,000 ($7,000,000 for Project costs and $70,000 for the 1% service fee) to the City of Grand Junction acting by and through its Water Activity Enterprise for costs related to the Purdy Mesa Flowline Replacement Project, from the Severance Tax Perpetual Base Fund. The loan terms shall be 20 years at a reduced low-income municipal interest rate of 1.50% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Introduction:

The City of Grand Junction (City) is applying for a loan for the Purdy Mesa Flowline Replacement (Project). The City provides domestic water service to about 30,000 customers. The Purdy Mesa Flowline is one of two primary raw water lines which supply the City of Grand Junction Water Treatment Plant. About 11.0 miles of this 17.5-mile line has already been replaced in recent years and the remaining 6.5 miles will be replaced as part of this project. Design efforts are already under way and construction is expected in February 2021. See attached Project Data Sheet for a location map and Project summary.

Background:
The Purdy Mesa Flowline is a 20-inch steel pipeline built in the 1940s whose alignment runs 17.5 miles from Juniata Reservoir to the City of Grand Junction Water Treatment Plant. As it had reached the end of its useful life by the '00s, the City decided to replace the line in segments. The first replacement was a 3.7-mile stretch with 20-inch PVC in 2009. Over the course of the following years, additional segments were replaced, leaving only 6.5-miles of original steel pipe remaining by 2019. The Purdy Mesa Flowline is one of two primary conveyances for raw water treated by the City's water utility. While other existing infrastructure does offer some redundancy, the failure of the Flowline would result in severe shortages to the water utility's customers.

Borrower – The City of Grand Junction
The City of Grand Junction is a Colorado Home Rule municipality which operates under its charter adopted September 14, 1909. The City's Utilities Department oversees the Water Services Division which is responsible for operation and maintenance of the water supply, treatment, and distribtuion system. This system serves a popluation of about 30,000 and is expected to increase to about 49,000 by 2069. Operations, expenses, and capital projects associated with the system are funded by the Water Enterprise Fund, the revenues for which include water service charges and tap fees.

Loan Feasibility Study:
Staff of the City's Utilities Department Water Services Division prepared the Loan Feasibility Study titled "Loan Feasibility Study: City of Grand Junction Purdy Mesa Flow Line." The feasibility study was prepared under the direction of Randi Kim, PE. and is in accordance with CWCB guidelines. It includes an analysis of alternatives, preliminary engineering design, construction cost estimates, and previous studies. Also submitted were recent years' Comprehensive Annual Financial Reports prepared under the direction of Jodi Romero, Director of the City's Finance Department.

Water Rights:
The City's primary water supply is the Kannah Creek watershed which covers 200 square miles on the top and west side of the Grand Mesa. The City has three major diversion rights and one storage right within the watershed including the most senior right on Kannah Creek. Water is conveyed from the City-owned Juniata Reservoir to the water treatment plant via the Purdy Mesa Flowline. The City's water utility also has agreements with two other water supply entities for treated water to supplement their regular supply under rare or emergency circumstances. These rights are detailed in Table 1. Other minor rights that do not contribute substantially to City operations are not included.

TABLE 1: WATER RIGHTS

Source Name	Rate or Volume	Appropriation Date	Adjudication Date	Water Court Case No.
Direct Diversion Rights				
Kannah Creek (summer)	7.81 cfs	1/11/1911	12/30/1881	1818
Kannah Creek (winter)	3.908 cfs	7/25/1941	5/1/1929	5812
Gunnison River	18.6 cfs abs. 101.4 cfs con.	7/21/1959	1/22/1957	W130 8303
Colorado River	12.38 cfs abs. 6.19 cfs abs. 2.49 cfs abs. 78.94 cfs con.	7/21/1959	2/17/1947	94CW215 85CW22 85CW37 05CW160
Storage Rights				
Juniata Reservoir 1st Enlargement 2nd Enlargement	400.094 AF 2313 AF 4156.6 AF 919 AF	11/1/1911 6/7/1953 4/2/1967 12/31/1993	7/25/1941 7/21/1959 12/31/1970 12/15/2002	5812 8303 82CW280 93CW263
Non-Decreed Treated Water Agreements				
Clifton Water District	4.5 mgd	-	-	-
Ute Water Conservancy	n/a – informal agreement	-	-	-

Project Description:
The Purpose of the Project is ensure the City's continued ability to supply water to their customers by maintaining operation of the Purdy Mesa Flowline. The following alternatives were analyzed:

Alternative 1 – No Action: This alternative would entail continuing to use the existing flowline. It was considered unacceptable because the existing steel pipe has reached the end of its useful life. The pipe was mortar lined in 1966 which extended its useful life, but the shell is still susceptible to corrosion.

Alternative 2 – Replace Remaining Section of Flowline with 24-inch PVC: This alternative would involve replacing the 6.5-mile length of flowline with 24-inch PVC. 24-inches is the smallest diameter which would offer the maximum necessary capacity needed on a peak demand day predicted for 2069. However, the city has already replaced the rest of flowline with 20-inch pipe which would also need to be replaced to realize that capacity. This alternative was not selected because it would be infeasible to replace the already installed pipeline and because the City operates other infrastructure that can supplement the flowline capacity in peak demand situations decades in the future. The capital cost of this alternative is about $11 million.

Selected Alternative 3 – Replace Remaining Section of Flowline with 20-inch PVC: This alternative was selected as the preferred as it achieves the project purpose and does so while minimizing costs. This alternative would involve replacing the remaining 6.5 miles of old flowline with 20-inch PVC pipe. While the pipe capacity would not alone meet peak day demands predicted for 2069 and beyond, the City operates other infrastructure which can supplement capacity during those times. The project

capital cost is almost five million dollars less than Alternative 2 and long-term maintenance costs would be similar.

The cost estimate of this alternative is $7,000,000 as shown in Table 2.

TABLE 2: ESTIMATED PROJECT COST

Task	Total
Pre-Construction Engineering (Geotech, Environmental, Right-of-Way)	$120,000
Mobilization	$200,000
20-Inch PVC Furnish and Install	$3,630,000
Fittings	$340,000
Air Valves	$65,000
Pressure Control Tank	$1,500,000
Contingency (20%)	$1,145,000
TOTAL	**$7,000,000**

Permitting: The City will need to submit an "Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property" to the Bureau of Land Management and a "Pre-Construction Notification" application to the United States Army Corps of Engineers for a 404 Permit.

Schedule: Engineering, permitting, and design efforts are currently underway and are expected to be completed in December 2020. Bidding for the project will take place in January 2021. Construction is expected to begin in February 2021 and finishing in August 2021.

Financial Analysis:
Table 3 provides a summary of the Project's financial aspects and Table 4 details the City's current existing debt. The City qualifies for a low-income municipal interest rate of 1.75% for a 30-year term. The City is applying for a 20-year term; therefore, the interest rate is decreased by 0.25% for a final interest rate of 1.50% per CWCB Financial Policy #7 (Lending Rate Determination).

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	$7,000,000
CWCB Loan Amount	$7,000,000
CWCB Loan Amount (Including 1% Service Fee)	$7,070,000
CWCB Annual Loan Payment	$411,797
CWCB Annual Loan Obligation (1st Ten Years)	$452,977
Monthly Loan Obligation per Tap (9,967)	$3.75

Creditworthiness: The City has four existing loans tied to its water fund revenue; three from the Colorado Water Resources and Power Development Authority and one with CWCB. CWCB Loan Contract CT2017-916 for the Hallenbeck Reservoir No. 1 Dam Rehabilitation was executed in July 2016 for $1,010,000 and went into repayment in March 2017. The City's payments on this loan are currently up-to-date. Their total current debt on all four loans is $4,954,057 and their annual debt service is $655,812. The current average monthly water bill is $22.65 and rates have been steady in recent years, however the water utility intends to increase rates in order to fund this project and several other capital improvements over the next ten years.

TABLE 4: EXISTING DEBT

Lender	Original Balance	Current Balance	Annual Payment	Maturity Date	Collateral
2002 CWRPDA	$3,566,522	$721,924	$270,000	2022	Water revenues
2010 CWRPDA	$3,783,923	$2,247,881	$244,738	2030	Water revenues
2016 CWRPDA	$1,615,100	$1,310,493	$91,315	2036	Water revenues
2017 CWCB (CT2017-916)	$764,821	$673,759	$49,759	2037	Water revenues
TOTAL		$4,954,057	$655,812		

TABLE 5: FINANCIAL RATIOS

Financial Ratio	Prior Years	Future w/ Project
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	144% (strong) $9.00M/$6.25M	134% (strong) $9.00M/6.70M
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	517% (strong) $9.00M-$5.59M $0.66M	291% (strong) $9.00M-$5.59M $1.17M
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	128% (strong) $8.00M/$6.25M	119% (strong) $8.00M/$6.70M
Debt per Tap (Based on 9,967 Taps) weak: >$5,000 - average: $2,500 - $5,000 - strong: <$2,500	$499 (strong) $4.99M/0.01M	$1,206 (strong) $12.06M/0.01M
Average Monthly Water Bill weak: >$60 - average: $30 - $60 - strong: <$30	$22.62 (strong)	$26.37 (strong)

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

cc: Randi Kim, Utilities Director, the City of Grand Junction Utilities Department
Jennifer Mele, Colorado Attorney General's Office

Attachment: Water Project Loan Program – Project Data Sheet

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Purdy Mesa Flow Line Replacement

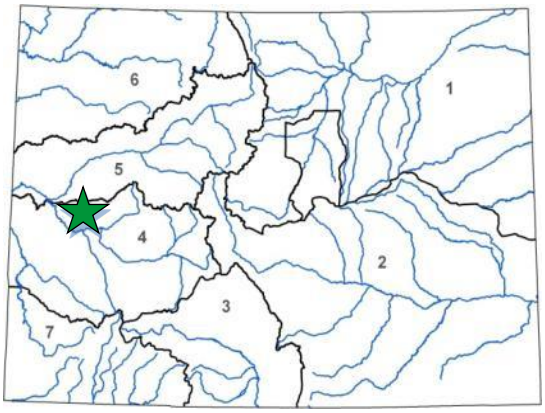
City of Grand Junction

September 2020 Board Meeting

LOAN DETAILS	
Project Cost:	$7,000,000
CWCB Loan (with 1% Service Fee):	$7,070,000
Loan Term and Interest Rate:	20 years @ 1.50%
Funding Source:	Severance Tax Perpetual Base Fund

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

PROJECT DETAILS	
Project Type:	Municipal System Rehabilitation
Average Annual Diversions:	5,300 AF



LOCATION			
County:			Mesa
Water Source:			North Fork Kannah Creek
Drainage Basin:			Gunnison
Division:	4	*District:*	42

The City of Grand Junction, through its Water Activity Enterprise, has numerous water and storage rights on the Grand Mesa, as well as water rights in the Gunnison and Colorado Rivers. These rights can be used to provide for the municipal water supply needs of a portion of the City. Due to poor water quality, however, the water rights on the Gunnison and Colorado Rivers are largely unused. The City currently serves approximately 30,000 residents, however, this number is projected to grow to 49,000 by 2069.

The Purdy Mesa flow line, completed in 1948, is a 17.5-mile gravity transmission main from Juniata Reservoir on the Grand Mesa to the City's water treatment plant. It serves as the primary source of raw water for the service area. Approximately 11 miles of the flow line have been replaced over the last 20 years, and this loan will be used to fund replacement of the last two sections totaling 6.5 miles. This will extend the useful life of the flow line and increase the flow capacity for the growing population. Construction is expected to begin in early 2021.