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Colorado Water Conservation Board
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Anna Mauss, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

DATE: May 20-21, 2015 Board Meeting

AGENDA ITEM: 14a - Water Project Loans
Uncompahgre Valley Water Users Association – Drop 5 Hydroelectric Project

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Introduction

The Uncompahgre Valley Water Users Association (Association) is applying for a loan to design and construct a 2.2 Megawatt (MW) hydroelectric facility, known as the Drop 5 Hydroelectric Project (Project), on an existing canal drop structure. The Project, with an estimated cost of $7.7 million, is located near Montrose, Colorado on the Uncompahgre Project canal system. The power will be purchased by the Delta-Montrose Electric Association (DMEA) under a Power Purchase Agreement (PPA). The Association is applying for a loan to cover 90% of the Project's cost with a 20-year CWCB loan. See attached Project Data Sheet for a location map and a Project summary.

Staff Recommendation

Staff recommends the Board approve a loan not to exceed $6,999,300 ($6,930,000 for Project costs and $69,300 for the 1% Loan Service Fee) to the Uncompahgre Valley Water Users Association for costs associated with the design and construction of the Drop 5 Hydroelectric Project from the Severance Tax Perpetual Base Fund. The loan terms shall be 20 years at the hydroelectric interest rate of 2.0% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Staff further recommends that no funds be disbursed until the following contract conditions have been satisfied:

1) Execution of the Lease of Power Privilege Agreement (LOPP)
2) Execution of an agreement that provides payment to the Uncompahgre Valley Water Users Association from the Drop 5 hydroelectric revenues

Background

The Uncompahgre Project Area (UPA) is one of the oldest Bureau of Reclamation (Reclamation) projects in the country. It encompasses most of Delta and Montrose counties. Authorized for construction in March of 1903, it was one of the first projects funded by President Roosevelt under the Reclamation Act.

The Uncompahgre Project operates in Reclamation's Upper Colorado Region and contains one storage dam at Taylor Park Reservoir in Gunnison County, seven diversion dams, 128 miles of canals, and 438 miles of laterals and 216 miles of drains.

Approximately 85,000 acres are irrigated under the Association's system. The irrigable area is a broad flat river valley with some adobe hills adjacent to the valley on the eastside of the river and wide flat mesas west of the river valley. The area economy is based mostly on crop production of alfalfa hay, small grains, row crops, and pasture that supports the local beef and sheep industry.

The Association currently has four small-scale hydroelectric facilities, three located on the South Canal at Drops #1, #3, and Drop #4 (with anticipated power production in mid 2015), and one located on the M&D Canal at Drop #6 called the Shavano Falls Plant (also expected to be online in mid 2015). South Canal Drop #2 is still in the planning stages for future construction.

TABLE 1: Hydroelectric Facilities

Hydro Site	Owner/Operator	Power Production	Canal
Drop #1	DMEA	3.4 MW	South
Drop #2	To Be Determined	1.0 MW	South
Drop #3	DMEA	2.8 MW	South
Drop #4	Shavano Falls Hydro LLC	4.8 MW	South
Drop #5	Association (this loan)	2.2 MW	South
Drop #6	Shavano Falls Hydro LLC	2.8 MW	M & D

The South Canal begins at the outlet of the Gunnison Tunnel, approximately five miles east of Montrose. It was the first large-volume canal built to transport water from the Gunnison Tunnel for distribution throughout the Uncompahgre Valley. It is eleven miles long and was designed to carry 1,300 cfs. Based on an estimated annual South Canal flow of 385,000 acre-feet, the Association anticipates annual power production of 9,000 MWHr between April and October.

Loan Feasibility Study

Steve Fletcher, Manager, prepared the Loan Feasibility Study, titled "Feasibility of Hydroelectric Generation on the South Canal at Site #5," dated March 2015. Technical support was provided by Ted Sorenson, P.E., Sorenson Engineering, Idaho Falls, Idaho. The study includes preliminary design and construction cost estimates. In addition, Sorenson Engineering gathered hydrological data and modeled energy generation projections for the Project. The Loan Feasibility Study was prepared in accordance with the CWCB guidelines.

Borrower – Uncompahgre Valley Water Users Association

The Association is a 501(c)(12) not for profit entity. It was incorporated in 1903 and is contracted with the Bureau of Reclamation to operate and maintain the UPA facilities. The Association's Board of Directors are elected by the 3,500 shareholders. The Board is made up of nine members, three from the Montrose area, three from the Olathe area, and three from the Delta area. Each director serves a three-year term. The Board of Directors may: acquire water and real property, acquire facilities for the purpose of providing use of water, make and enforce rules regarding the distribution of water, borrow money and incur indebtedness, and levy assessments. Liens may be recorded on the lands of shareholders if assessments are unpaid.

Water Rights
The Association's ten-year average annual water demand is 870,000 acre-feet. Water in the UPA system includes a 1913 Gunnison Tunnel Water Right from the Gunnison River (1,300 cfs), an 1882 Uncompahgre River Right (1225.64 cfs), and a 1937 Taylor Park Reservoir Storage Right of 106,230 acre-feet. The total direct flow water rights sum to 2,525.64 cfs.

The Association purchases 11,200 acre-feet of Ridgway Reservoir water annually from Tri-County Water Conservancy District (with an agreement that allows up to 15,000 acre-feet to be purchased). The Association also has the Taylor Park Reservoir Operation and Storage Exchange Agreement (1975 Agreement) that allows second fill rights in Taylor Park Reservoir and to move Taylor first fill credits into Blue Mesa Reservoir.

Specific to this Project, the South Canal carries 1,175 cfs of water decreed for irrigation, municipal, stock water and power generation. On average, the South Canal diverts 385,000 acre-feet/year of which approximately 70% reaches the Uncompahgre River for distribution throughout the entire UPA. There are six direct lateral water diversions off the South Canal serving 320 water users and irrigating 13,600 acres in the southeast part of the UPA.

Project Description
The Association is proposing construction of a 2.2 MW hydroelectric facility on an existing irrigation drop structure on the South Canal known as Drop #5. While alternatives in design were considered, ultimately the decision to build the Project was made due to the long-term financial benefit the facility provides to the Association's irrigators. The proposed Project includes:

Diversion/Bypass - A diversion/bypass gate will be placed in the existing canal to divert water into the intake/power house structure. Flows will be returned to the existing canal and will not affect the delivery of irrigation water.

Intake/Powerhouse Structure - The structure will house the generator and mechanical/electrical auxiliaries. The turbine will be a vertical double regulated Kaplan turbine. These Kaplan units have been installed in the Uncompahgre Valley at Drops #1, #3 and #4.

Substation and Transmission Line - The power will be sold to DMEA and delivered via an underground line. A switchyard will be constructed at the powerhouse with a transformer capable of stepping up the power generated to the necessary interconnection voltage.

Permitting: The Project is being performed under Reclamation's Lease of Power Privilege (LOPP) process that allows for the development of hydropower at existing Reclamation facilities. Therefore, the Project is exempt from Federal Energy Regulatory Commission (FERC) permitting requirements.

TABLE 2: ESTIMATED PROJECT COSTS

Task	Cost
Powerhouse & Intake	$3,330,000
Canal Work	$350,000
Mechanical Power Systems	$2,000,000
Electrical	$550,000
DMEA Interconnect	$250,000
Engineering & Permitting	$800,000
Contingency	$420,000
Total	**$7,700,000**

Schedule: Final design and engineering for this Project will be performed by Sorenson Engineering of Idaho Falls, Idaho. The design will be reviewed and approved by Reclamation prior to authorizing construction. The following are milestones and anticipated completion dates:

May 2015 – Order the turbine and generator
June 2015 - LOPP anticipated approval
May 2016 - Delivery of turbine and generator
July 2016 – Construction complete- power delivery

Financial Analysis
The Association's Project qualifies for the CWCB's hydroelectric interest rate which is currently 2.0% for a 20-year term. Table 3 provides a financial summary of the Association's Loan.

TABLE 3: FINANCIAL SUMMARY

Total Project Cost	$7,700,000
Borrowers Contribution	$770,000
CWCB Loan Amount	$6,930,000
CWCB Loan Amount (Including 1% Service Fee)	$6,999,300
CWCB Annual Loan Payment	$426,200
CWCB Annual Loan Obligation (1st Ten Years)	$468,800
Current Assessment	$33 to $42/share
Annual shareholder commitment (35,000 shares)*	$13/share

* The Association does not expect to raise assessments to pay for the Project as the hydro revenues are expected to offset the shareholders cost of the project.

In addition, the Association intends to apply for a WaterSMART grant from Reclamation. Grant limits have not been released by Reclamation, so the application amount has not been determined. Further information is expected in the fall of 2015.

Creditworthiness: The Association has no debt at this time. In the past it had numerous repayment contracts with Reclamation including: the Uncompahgre Valley Project Construction Repayment Contract for the Gunnison Tunnel, distribution system, and Taylor Park Reservoir; and several Rehabilitation and Betterment (R&B) Contracts. It also had a CWCB loan to consolidate and reduce the interest payments on the R&B debt.

In September 2011, the Association entered into a Water Lease Agreement with DMEA on two Hydroelectric Facilities (Drop #1 and #3) on the South Canal. Under this Agreement, DMEA owns and operates these facilities and pays the Association 50% of the net profit from the facilities. These funds are deferred to a reserve account until the debt is paid (20 years), at which time the Association may become 50% owners in the facilities.

In 2014, the Association entered into a Water Lease Agreement with Shavano Falls Hydro, LLC for use of the Association's canal water for hydroelectric facilities at Drop #4, #5, and #6. The Association receives royalty payments based on the gross power sales. The Association has the option to purchase the hydroelectric facilities at the end of five years.

Currently, DMEA and Shavano Falls Hydro, LLC have a 20-year PPA in place for drops #4, #5, and #6. Because the Association is ultimately going to become the owner/operator of Drop #5 (this Project), Shavano Falls Hydro and the Association are working out details on a sub-agreement to the PPA to route Drop #5 hydro revenues to the Association. In order to align the loan terms with the revenues from the power sales, the CWCB loan contract will be limited to 20-years.

TABLE 4: FINANCIAL RATIOS

Financial Ratio	Association Financials Past 3 Years	Drop 5 Hydro Projections (1)
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	108% (Average) $5.6M/$5.2M	100% (Average) $575K/$575K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	N/A (no debt)	100% (Average) ($575K-$149K) $426K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	31% (Weak) $1.6M/$5.2M	N/A(2)

(1) Initial Project revenue projections range from $485,000 to $642,000, with the average year projection of approximately $575,000. Hydro expenses are projected to be $149,000 + CWCB debt service.

(2) The Project itself will not have cash reserves initially. The Association will contribute 10% of the Project cost from its $1.6M in cash reserves.

Collateral: Security for this loan will be a pledge of the Association's assessment revenues backed by an assessment covenant and the Drop 5 Hydroelectric Facility. This is in compliance with the CWCB Financial Policy #5 (Collateral).

cc: Steve Fletcher, Manager, Uncompahgre Valley Water Users Assoc.
Susan Schneider/Jennifer Mele, Colorado Attorney General's Office

Attachment: Water Project Loan Program – Project Data Sheet

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

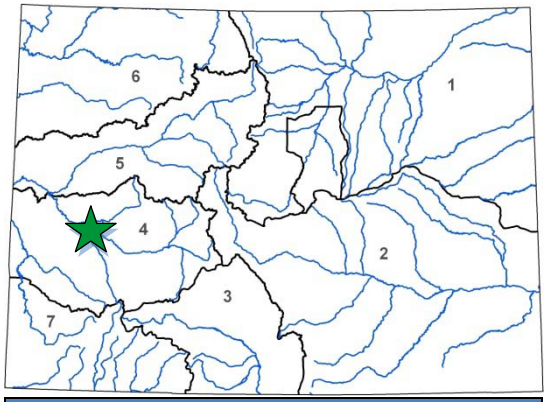
Drop 5 Hydroelectric Project

Uncompahgre Valley Water Users Association

May 2015 Board Meeting

LOAN DETAILS	
Project Cost:	$7,700,000
CWCB Loan (with Service Fee):	$6,999,300
Loan Term and Interest Rate:	20-years @ 2.0%
Funding Source:	Severence Tax Perpetual Base Fund
BORROWER TYPE	
Agricultural	
PROJECT DETAILS	
Project Type:	Hydroelectric
Average Annual Power Production	2.2 MW

The Uncompahgre Valley Water Users Association provides irrigation water to over 85,000 acres in Montrose and Delta Counties. It intends to develop a 2.2 MW hydroelectric project known at the Drop 5 Hydroelectric Project alongside an existing canal. The existing canal will be used as a by-pass during non-power generation times. The power will be sold to Delta Montrose Electric Association and will be used locally. Power production is anticipated by summer of 2016.



LOCATION			
County:	Montrose & Delta		
Water Source:	Gunnison River		
Drainage Basin:	Gunnison		
Division:	4	*District:*	41