COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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**TO:** Colorado Water Conservation Board Members

**FROM:** Matthew Stearns, P.E., Project Manager
Kirk Russell, P.E., Finance Section Chief

**DATE:** March 10-11, 2021 Board Meeting

**AGENDA ITEM:** 19e. Water Project Loans
Grand Valley Water Users Association – Vinelands Power Plant

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**Staff Recommendation**

Staff recommends the Board approve a loan not to exceed $1,076,660 ($1,066,000 for Project costs and $10,660 for the 1.0% service fee) to the Grand Valley Water Users Association for costs related to the Vinelands Power Plant, from the Severance Tax Perpetual Base Fund. The loan terms shall be 20 years at an interest rate of 2.00% per annum. Security for the loan shall be in compliance with CWCB Financial Policy #5.

Staff additionally recommends the following loan contract conditions:

1. Prior to the disbursement of funds, the Association shall provide an executed Lease of Power Privilege, and Power Purchase Agreement.
2. Prior to disbursement of funds, the Association shall provide documentation that all non-CWCB funding is secured and adequate to cover the Project cost estimate.

**Introduction**

The Grand Valley Water Users Association (Association) is applying for a CWCB Hydroelectric interest rate loan for the Vinelands Power Plant (Project), which includes permitting, infrastructure necessary to convey that power to the electrical grid (Interconnect), and a portion of the costs to construct the power plant and necessary appurtenances. The Association is working with the Orchard Mesa Irrigation District (District) and Sorenson Engineering, Inc (Sorenson) to complete the Project. The new power plant will replace the existing Grand Valley Power Plant (GVPP) and will be safer, more efficient, and more economical to own and operate while maintaining the same environmental benefits. This Project will increase the maximum power generation from 2.75 MW to 4.5 MW. The Association is requesting a loan from the CWCB for a portion of its share of the Project cost. The District is concurrently seeking a CWCB loan to help cover its share of the Project cost (see March 2021 Agenda Item 19f). Combined, these two loans will cover approximately 23% of the total Project cost. The Association is also seeking a Water Plan Grant from the Agriculture, and the Environmental and Recreation categories in a total amount of $200,000 (see March 2021 Consent Agenda Item 3f.) The total Project cost is estimated at $9,227,825. See attached Project Data Sheet for a location map and Project summary.

**Borrower – Grand Valley Water Users Association**

The Association is a non-profit corporation formed in 1905 to manage the Bureau of Reclamation's Grand Valley Project. There are approximately 1,800 shareholders in the Association's service area. Water is allocated to the land through "Subscription for Stock" agreements. These agreements were entered into by the Association and owners of irrigable lands in the early 1900's and were recorded with the Mesa County Clerk and Recorder's office. When land ownership changes, water rights remain with the land and cannot be sold separately. Assessments are billed annually based on allotments for individual parcels of land. Each parcel is assessed a fee per acre, plus an additional assessment of $100 per account to cover the additional costs incurred from work on the Roller Dam, laterals, and other non-routine capital expenditures outside of the GVPP. Revenues are primarily derived from these assessments, but the Association also receives funds from Reclamation per a salinity control cost sharing agreement, and from the sale of electricity generated by the GVPP.

The Association is governed by an eleven-member board of directors. The board has the authority to make and levy all assessments, and has the power to enforce collection of assessments by ceasing water deliveries to delinquent shareholders, issuing liens on the shares (which become a lien on the land), and the eventual foreclosure and sale of said lands. It also has the power to make and enforce all rules and regulations concerning the distribution of water within the system. The board has the authority to enter into debt without shareholder approval as long as the annual debt service is less than $1,000,000.

The Association is the managing entity of the Bureau of Reclamation (Reclamation) owned Grand Valley Project. The Grand Valley Project facilities include the Roller Dam, the 55-mile-long Government Highline Canal, 150 miles of project-operated laterals, 100 miles of drainage ditches, and the GVPP. The Association was established to deliver water for the purpose of irrigating farmland which carries water rights appurtenant to the land.

**Background**

The GVPP was built in the early 1930's and was operated by Public Service Company of Colorado (Xcel Energy) in conjunction with the Cameo coal power plant until 2010. When the Cameo coal power plant was decommissioned, Xcel Energy decided to cease operations at the GVPP as well. As the continued operation of the GVPP is important for river flows in a stretch of the Colorado River known as the "15-Mile Reach," Reclamation encouraged the District and Association to operate and maintain the GVPP. At the end of 2010, a Lease of Power Privilege (LOPP) was entered into between Reclamation and the District and Association. Under this LOPP, the District and Association equally split GVPP operational and maintenance costs. Starting in 2011, the Association and District entered into a 10-year Power Purchase Agreement (PPA) with Xcel Energy, with revenues being equally split as well. The District operates the GVPP and invoices the Association for half its cost. Reclamation remains the owner of the GVPP and its hydropower water right.

Minimal maintenance has occurred on the GVPP since its construction in the 1930's. The turbines, generator, and electrical panels are more or less as they were originally constructed, and rely on 1930's technology. In 2015, the District and Association went through a Request for Qualifications process and selected Sorenson to provide a feasibility study for options to repair or replace the GVPP. They each were subsequently approved for a $1,717,000 CWCB loan to rehabilitate the GVPP at the November 2016 Board Meeting. Since then, they have encountered significant delays in the design and permitting process with Reclamation, and their loan contracts expired in mid-2020, with the funds being deauthorized at the November 2020 Board Meeting. In response to the delays, they began exploring the concept of constructing a new plant that could be built to generate more power but

without the same design and permitting concerns. After going through a Request for Proposal process to select a contractor, the District and Association decided to partner with Sorenson and form Grand Valley Hydropower, LLC (LLC). Sorenson, under contract with the LLC, will design and construct the VPP, while the LLC will own and operate it. This new plant will increase power generation using the same water right, while maintaining critical flows in the 15 Mile Reach critical habitat area. The District and Association are currently negotiating a revised LOPP with Reclamation, which they will allow the use of by the LLC. This revised LOPP is critical to the Project agreements and no construction will begin before it is executed. Once it is executed, the LLC will execute an already negotiated PPA with Holy Cross Energy at nearly the same rate as the existing PPA with Xcel; however, it will include an annual escalator for the power purchase price over the life of the 20 year agreement.

During the first year of VPP operation, the District and Association will not be owners of LLC, but will be paid 22% of gross power sales as a royalty. After one year of operation, the District and Association will have the option to purchase a 20% stake in the LLC along with a reduced royalty payment, and after 5 years of operations they will have the option to purchase a 51% stake in the LLC with royalty payments ceasing. This arrangement has been formalized in a convertible promissory note and puts Sorenson "at risk" as required by the Internal Revenue Service in order to be eligible for the Renewable Energy Credits (RECs). These RECs are a critical funding component to the Project, making it financially feasible for the District and Association.

**Loan Feasibility Study**

The District and Association together prepared the Loan Feasibility Study titled, "Vinelands Hydroelectric Power Plant Loan Feasibility Study," dated February 1, 2021. This study relied on a 2015 Feasibility Study titled "Grand Valley Power Plant Feasibility Study" and a 2020 "Supporting Design Report" both prepared by Sorenson. The loan feasibility study was prepared in accordance with CWCB guidelines and includes an analysis of alternatives, preliminary engineering, design, and construction cost estimates. Also submitted were recent years' Annual Financial Reports audited by Chadwick, Steinkirchner, Davis & Co., P.C.

**Water Rights**

The water rights associated with the Association are shown in Table 1. The United States, through Reclamation, is the owner of the hydropower water right, as well as the other water rights associated with the Grand Valley Project.

**TABLE 1: WATER RIGHTS**

| Source Name | Rate or Volume | Adjudication Date | Appropriation Date | Water Court Case No. |
|---|---|---|---|---|
| Grand Valley Project (*Hydropower)* | 400 CFS (irr. Season) 800 CFS (non-irr. season) | 2/27/1908 | 7/25/1941 | CA5812 |
| Grand Valley Project (*Irrigation*) | 730 CFS | 7/22/1912 | 2/27/1908 | CA1927, CA5812 |
| Grand Valley Project (*Domestic and Livestock)* | 220 CFS | 7/25/1941 | 2/27/1908 | CA5812 |

The Project water right is a part of the "Cameo Call" which is a call comprised of a series of water rights on the Colorado River owned by five entities: the District, the Association, the Grand Valley Irrigation Company, the Palisade Irrigation District, and the Mesa County Irrigation District.

**Project Description**
The purpose of the Project is to ensure continued operation of the power rights to generate power while assuring Endangered Species Act (ESA) compliance.

***Alternative 1 – No Action***: This alternative was not selected because the GVPP is projected to be operable for only a few more years if not rehabilitated or replaced. In addition to being a revenue source for the District and Association, the GVPP serves an important role in providing water to the "15-Mile Reach" which has been designated by the Upper Colorado River Endangered Fish Recovery Program as critical habitat where in-stream flows are crucial. The GVPP is directly responsible for providing up to 400 cfs of water throughout the critical base flow period.

***Alternative 2 – Rehabilitate with Upgraded Production:*** This alternative includes: (1) recoating the existing penstocks, scroll case and draft tubes; (2) replacement of the turbine components, and rewinding of the the generators; and (3) replacement of the existing controls, switchgear, and substation with equipment that meets current standards. This alternative would increase efficiency and increase power generation from 2.75 MW to 4.1 MW and is estimated to cost over $10,000,000. The District and Association have determined that the limitations of the GVPP's equipment would not provide sufficient revenue to rebuild the plant to meet Reclamation requirements for design and permitting.

***Selected Alternative 3 – Replace with New Plant:*** This alternative includes constructing a new 4.5 MW hydroelectric plant next to the existing GVPP, new buried penstocks to carry water from the existing power canal to the new plant, and a new power connection to the electrical grid (Interconnect.) The plant will be capable of producing more power and in turn generate more revenue. During construction of the VPP, the GVPP will not be accessible or operational. This alternative is estimated to cost $9,227,825 as detailed in Table 2.

**TABLE 2: ESTIMATED PROJECT COST**

| Task | Total |
|---|---|
| Design and Development | $650,000 |
| Permitting | $400,000 |
| Runner and Generator Purchase | $1,810,000 |
| Mobilization | $225,000 |
| Construction | $4,815,000 |
| Interconnect | $900,000 |
| Contingency (4.6%) | $427,825 |
| **TOTAL** | **$9,227,825** |

***Permitting:*** The Project will be permitted through a new LOPP between Reclamation and the District and Association, which is expected to be complete in the summer of 2021. Reclamation also owns a portion of the underlying land and will take the lead to ensure compliance with the National Environmental Policy Act (NEPA). Since this is a replacement of existing infrastructure, compliance issues are not anticipated.

***Schedule:*** Construction of the Project is expected to begin in the fall of 2021 with testing and commissioning complete in the fall of 2022.

**Financial Analysis**
The Project qualifies for the hydroelectric interest rate of 2.0%. The Association is requesting a 20-year loan to cover its share of the Project cost not otherwise covered by alternate sources of funds. Currently, the District, Association, and LLC have obtained, or are in the process of obtaining commitments from numerous funding sources as shown in Table 3. The District and Association are each seeking to secure a CWCB loan for their remaining construction costs to ensure the Project is fully funded.

**TABLE 3: PROJECT FUNDING**

| Source | Total |
|---|---|
| Association Loan (CWCB) | $1,066,000 |
| District Loan (CWCB) | $1,066,000 |
| Sorenson Cash Contribution | $2,405,973 |
| Endangered Species Recovery Program Grant | $1,500,000 |
| Colorado Water Trust Grant | $425,000 |
| Grand Valley Fund Grant | $1,000,000 |
| WaterSMART Grant | $964,852 |
| Species Conservation Trust Fund Grant (CWCB) | $600,000 |
| Water Plan Grant (CWCB) March 2021 Consent Agenda Item 3f | $200,000 |
| **TOTAL** | **$9,227,825** |

**TABLE 4: FINANCIAL SUMMARY**

| | |
|---|---|
| Total Project Cost | $9,227,825 |
| CWCB Loan Amount | $1,066,000 |
| CWCB Loan Amount (Including 1% Service Fee) | $1,076,660 |
| CWCB Annual Loan Payment | $65,845 |
| CWCB Annual Loan Obligation (1st Ten Years) | $72,429 |
| Annual Loan Obligation per kWh (22,380,000 kWh/year) | $0.003 |
| Project Cost per MW (4.5 MW Facility) | $2,050,628 |

***Creditworthiness:*** The Association has $143,428 in existing debt made up of a CWCB loan and is in good-standing with the Colorado Secretary of State.

This Project will provide additional revenue for both the District and the Association based on the terms in the new PPA and the Vinelands Hydro Project Agreement between the Association, District, and LLC. This is a result of the increased power generating capacity of the VPP and the higher negotiated purchase price for all but the first two years of the PPA. Estimated revenues for the plant will increase from approximately $874,000 in year 1 of operation to $1,397,838 in year 20 of operation. This revenue will be apportioned between the owners of the LLC based on percent ownership, and in certain cases royalty payments for the District and Association. Overall, the Project is expected to provide a positive cash flow to the owners of LLC over the life of the loan.

**TABLE 5: EXISTING DEBT**

| Lender | Original Balance | Current Balance | Annual Payment | Maturity Date | Collateral |
|---|---|---|---|---|---|
| CWCB (CT17-2258) | $151,500 | $143,428 | $6,353.14 | 2048 | Pledge of Assessments |

**TABLE 6: FINANCIAL RATIOS**

| Financial Ratio | Prior Years | Future w/ Project |
|---|---|---|
| Operating Ratio (revenues/expenses)<br>weak: <100% \| average: 100% - 120% \| strong: >120% | 101%<br>(average)<br>$3.74M/$3.70M | 100%<br>(average)<br>$3.78M/$3.78M |
| Debt Service Coverage Ratio<br>(revenues-expenses)/debt service<br>weak: <100% \| average: 100% - 120% \| strong: >120% | 629%<br>(strong)<br>$3.74M-$3.70M<br>$6.35K | 102%<br>(average)<br>$3.78M-$3.70M<br>$78.8K |
| Cash Reserves to Current Expenses<br>weak: <50% \| average: 50% - 100% \| strong: >100% | 60%<br>(average)<br>$2.23M/$3.70M | 59%<br>(average)<br>$2.23M/$3.78M |
| Annual Operating Cost per Acre-Foot (260,000 AF)<br>weak: >$20 \| average: $10 - $20 \| strong: <$10 | $14<br>(average) | $15<br>(average) |

***Collateral:*** Security for this loan will be a pledge of the Association's assessment revenues backed by an assessment covenant, and will provide annual financial reporting. This is in compliance with the CWCB Financial Policy #5 (Collateral).

cc: Mark Harris, Grand Valley Users Association
Jennifer Mele, Colorado Attorney General's Office

Attachment: Water Project Loan Program – Project Data Sheet

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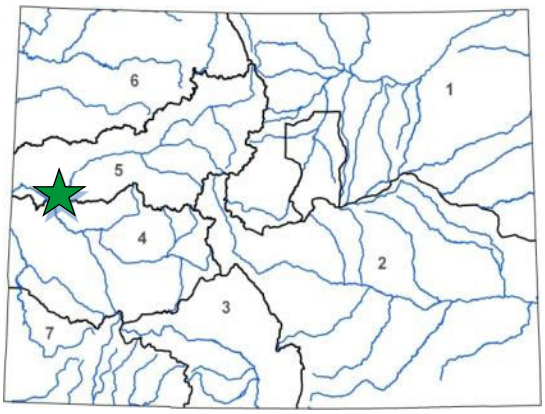
# Vinelands Power Plant

## Grand Valley Water Users Association

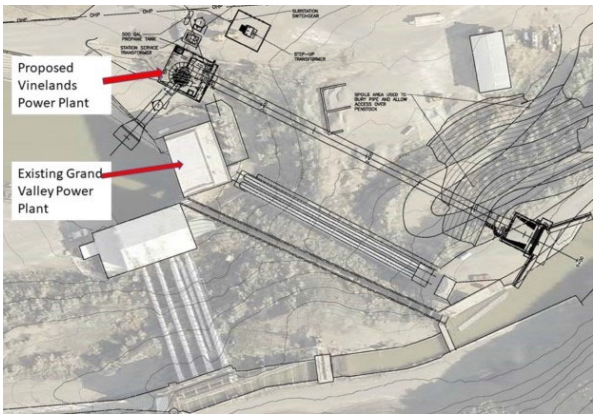
March 2021 Board Meeting

| LOAN DETAILS | |
|---|---|
| *Project Cost:* | $9,227,825 |
| *CWCB Loan (with 1% Service Fee):* | $1,076,660 |
| *Loan Term and Interest Rate:* | 20 Yrs @ 2.0% |
| *Funding Source:* | Severance Tax PBF, WPGrant |
| *Other Funding:* | SCTF, OMID, SE, ESRP, Colo Water Trust, GVF, WaterSMART |
| **BORROWER TYPE** | |
| *Water Users Association* | |
| **PROJECT DETAILS** | |
| *Project Type:* | Hydroelectric |
| *Average Annual Power Production:* | 22,380 MWh |
| *Average Annual Diversions:* | 260,000 AF |




| LOCATION | | | |
|---|---|---|---|
| *County:* | | | Mesa |
| *Water Source:* | | | Colorado River |
| *Drainage Basin:* | | | Colorado |
| *Division:* | 5 | *District:* | 72 |

The Grand Valley Water Users Association (Association) and Orchard Mesa Irrigation District (District) are each seeking a loan to cover a portion of their cost share for construction of a new Vinelands Power Plant (VPP). The VPP will replace the existing Grand Valley Power Plant (GVPP), which was built in the 1930's and is owned by the Bureau of Reclamation (Reclamation). It was originally operated by Public Service Company of Colorado (Xcel Engergy) in conjunction with the Cameo coal fired power plant. In 2010 the Association and District took operational control of the GVPP when Xcel decided to cease its operations. The Association and District equally split costs and revenues from the GVPP under a Lease of Power Privilege (LOPP) with Reclamation and a Power Purchase Agreement (PPA) with Xcel Energy. In addition to being a revenue source, the GVPP also serves an important role in providing water to the "15-Mile Reach" which has been designated by the Upper Colorado River Endangered Fish Recovery Program as critical habitat.




The Project is a new hydropower plant to be built adjacent to the existing plant in order to maintain the same environmental benefits while being safer, producing more power, and being more economical to own and operate. The VPP will be constructed and owned by Grand Valley Hydropower, LLC, which will be jointly owned by the Association, District, and the engineering and construction firm, Sorenson Engineering, Inc. The project will combine private capital with grants from federal, state, and non-profit sources, with the loan filling the funding gap for the Association and District, including construction of a new interconnect from the VPP to the power grid. A new LOPP with Reclamation, and a new PPA with Holy Cross Energy will be included.