



— BUREAU OF —
RECLAMATION



Carlsbad Irrigation District

Main Canal Automation

Applicant Contact:

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5117 Grandi Rd
Carlsbad, NM 88220

CFDA Number: 15.507

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Technical Proposal and Evaluation Criteria

Executive Summary

Applicant Information

Application Date: July 28th, 2022

Applicant Name: Coley Burgess

City, County, State: Carlsbad, Eddy County, New Mexico

Project Manager:

Coley Burgess

Carlsbad Irrigation District

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Requested Reclamation Funding: \$1,300,000; **Total Project Cost:** \$2,600,000

Project Summary

Provide a one paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits and how those benefits relate to the water management issues you plan to address.

Carlsbad Irrigation District (CID) is a Category A funding group II applicant seeking funding to improve operational efficiency along its laterals. At present manual operation and lack of metering of gates along the canal creates operational inefficiencies which routinely result in over deliveries and unrecoverable spillage. This project seeks to increase the operational efficiency of agricultural water conveyance over a section of the district's total of 212 miles of canals and laterals. This project proposes the installation of automated, metered Rubicon Water SlipMeter head gate, installation of Rubicon Water FlumeGate within the main canals (see Appendix B) to maintain consistent upstream water levels, and integration of all the automated head gates into the Rubicon SCADA system for remote monitoring and control. The installation of automated gates will ensure consistent deliveries of irrigation water to each grower, and increase the metering accuracy of the water delivered onto each field. Automation is expected to reduce the amounts of irrecoverable water spilled at the canal ends and from the grower's fields.

Automation is also expected to reduce the occurrences of over or under deliveries to grower fields caused by changing water elevations in the main canals and on the grower fields. Further, the ability to schedule deliveries to growers outside of normal working hours is expected to reduce spills and potential over deliveries onto fields. It is expected that upon completion the project will save between 2,245-4,042 acre feet of water each year through the elimination of spillage and accurate water monitoring and budgeting. Project start date proposed to start May 2023 with an end date of July 2024.

Project Location

Provide detailed information on the proposed project location or project area including a map showing the geographic location.

Carlsbad Irrigation District’s Canal Automation and Metering project is located in Eddy County, New Mexico approximately 25 miles from the Texas border in the southeastern portion of the state. The project location will take place on CID’s main canal just north of the city of Carlsbad and spanning 37 miles south to the city of Malaga, start at 32.490729 -104.252194 end at 32.231025 -104.140768, as shown in Figure 1 and Figure 2 below.

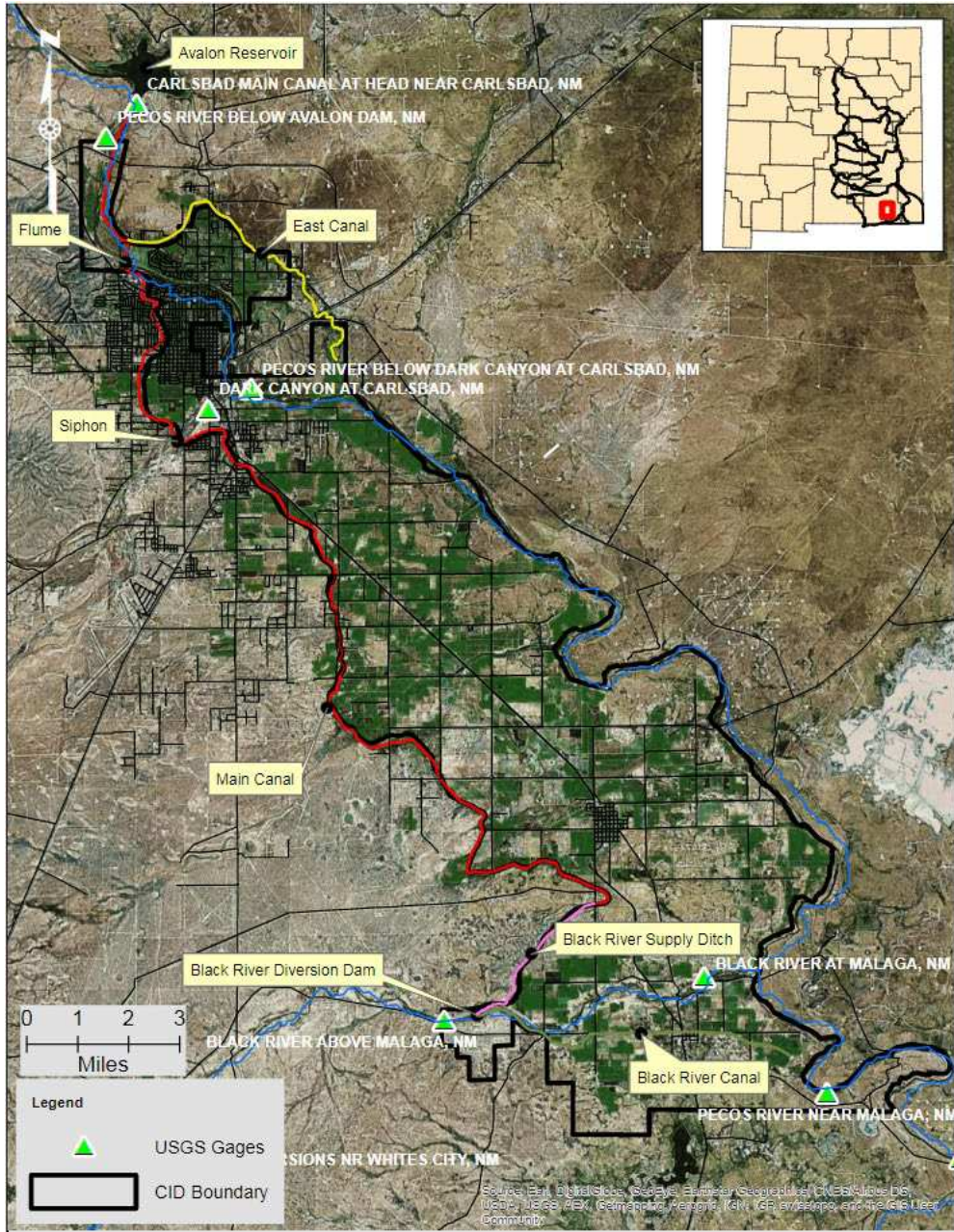


Figure 1 Map of CID's service area

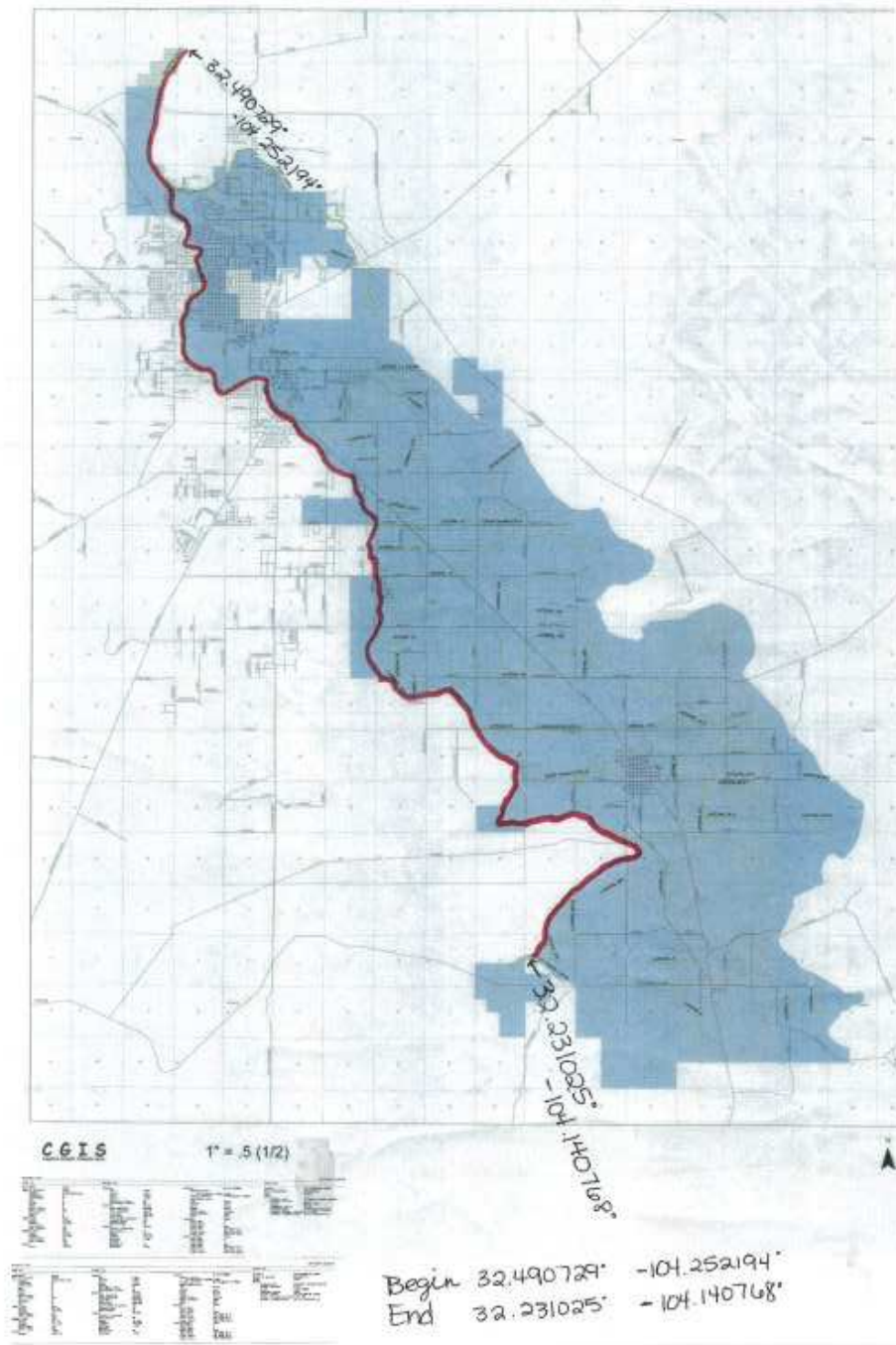


Figure 2 Location of proposed project

Technical Project Description

Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work.

CID seeks to improve the main canal within the project area by installing a total of 58 automated Rubicon gates (see Appendix B) along with implementing the manufacturer’s SCADA system to seamlessly interface with the newly installed automation. The goal of this project is to improve operational efficiency and decrease water lost through irrecoverable spillage while increasing the ability to provide stable service levels to agricultural customers and increase the amount of water able to be held in storage.

Each of the 58 proposed sites along the main canal will require the same general work but to varying extents for each step. The picture to the right depicts the typical gates along the Main Canal. The first objective at each site will be to cut the concrete of the existing board-slot check structure. This will be accomplished using the district’s gas-powered concrete saw. The concrete will then be removed and disposed by District’s crew using prybars, mini excavator, and dump truck. The site will be prepped with any fill and compaction thereof needed for the placement of the concrete structure to house the new gate. District crews will fabricate concrete forms out of plywood, 2x4’s and snap ties for the placement of the concrete. The frame of the new automated check gate will then be affixed to the concrete using concrete anchor bolts drilled into the new structure and secured with adhesive. Any gaps between the frame and the structure will be filled with speed plug concrete mortar. The solar panel will be set into the concrete pad and the gate will be installed in the frame. Lastly, with the help of a technician from the gate manufacturer the gate will be wired and calibrated.



Background Information

CID started as a private enterprise in 1887 during the territorial period. The federal government took it over in 1905, prior to statehood, and used the new power of the United States

Reclamation Service to complete it. Even with statehood achieved in 1912, the federal government continued to manage the irrigation project, as it did many others across New Mexico and the Southwest. Even though CID acquired all the land rights from the United States covering the distribution and drainage system in 2001, the Reclamation still remains involved in the ownership and operation of the facilities (dams, reservoirs, and river reaches) associated with the operation of the CID.

Source of Water Supply & Uses

The Pecos River Basin has a drainage area of approximately 15,220 square miles and extends over much of southeastern New Mexico. Beginning at an elevation of over 12,000 feet, the Pecos watershed extends from the north-central Sangre de Cristo Mountains and continues south and east traversing approximately 225 miles before reaching the New Mexico-Texas state line at an elevation of approximately 2,800 feet.

The Carlsbad Project stretches from northeastern New Mexico near Ft. Sumner to south of the city of Carlsbad. The Project's water supply comes from the Pecos and Black Rivers. The Project, by permit from the State Engineer, stores water in Santa Rosa (U.S. Army Corp of Engineers), Sumner (Reclamation), Brantley (Reclamation), and Avalon Dams (Reclamation) to provide water within the Carlsbad Irrigation District. The maximum combined storage is 176,500 acre-feet, which is governed by the Pecos River Compact and the New Mexico Office of the State Engineer storage permit, Filing Number 6.

Irrigated agriculture accounts for 85% of the total regional Pecos River water use. The Project was originally designed as an irrigation project with features including a distribution and drainage system to irrigate 25,055 acres of land in the Project area. Many of the features used to deliver water throughout the Project were built in the early 1900s, including Avalon Dam, for storage and diversion, the main canal, laterals and sub-laterals. Sumner Dam and Brantley Dam, constructed in 1937 and 1989 respectively, are instrumental in controlling seasonal flooding along the Pecos River. Avalon Dam, constructed in 1907, continues to serve as a distribution dam, providing water for irrigation and for urban and suburban, residential, and commercial, lands.

Water Rights

State law governs the appropriation of water in New Mexico. With few exceptions, Surface water rights in the Carlsbad Project are transferred automatically by the district upon conveyance of the land to which the water rights are appurtenant. New Mexico's state engineer, who is appointed by the governor, maintains authority to supervise, measure, appropriate and distribute the state's water, including Project supplemental groundwater rights. Surface water rights of Carlsbad Project members have been the subject of a Settlement Agreement with the NM Interstate Stream Commission (ISC), the United States and the Pecos Valley Artesian Conservancy District (PVACD), signed in 2003. The Settlement is a landmark compromise of disputed water rights claims in the Pecos River Basin and successful resolution of a long-time

water delivery issue between New Mexico and Texas. The final settlement also identified operational elements necessary for delivery of water downstream through Carlsbad Project reservoirs to the Texas state line and further provisions to ensure a more reliable water supply to CID farmers. As part of this agreement ISC purchased 4,661 acres with the Project to be “dried up.” On a state level, the effects of the settlement agreement are already apparent in the 137,900 acre-feet water credit accrued by New Mexico for water deliveries to Texas.

CID Members receive a pro-rata share of surface water available in the Project that is distributed by the District among all of the 25,055 irrigated acres. The Partial Final Judgment and Decree on Surface Rights and Supplemental Rights in the Membership Phase of the CID section of the Pecos River Stream System Adjudication was entered on December 10, 2004. This adjudication outlined the following conditions applicable to every water right in the Carlsbad Irrigation District.

Priority Dates:

Carlsbad Project water has some of the most senior water rights along the Pecos River. The amounts listed below are for water diverted from the Pecos River and are not to be exceeded in any given year.

July 31, 1888 - 101,283 acre feet (AF)

April 10, 1915 - 22,625 AF

June 24, 1919 - 1,292 AF.

Amounts of Water for surface water only, for Black River Canal surface water, and for surface water with supplemental groundwater combined:

Consumptive irrigation requirement: not to exceed 2.218 AF per water right acre per annum

Farm delivery requirement: not to exceed 3.697 AF per water right acre per annum at the farm headgate

Project diversion requirement: not to exceed 4.997 AF per water right acre per annum

CID holds the Fourth Right on Black River. This right was adjudicated by The Black River Decree (aka U.S. v. Judkins) with a priority date of 1889. Under this right CID cannot divert more than 2,800 acre-feet between January 1 and December 31 of any given year for Black River Water Right deliveries.

Evaluation Criteria

Evaluation Criteria A – Quantifiable Water Savings

Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.

- ❖ Annually there are major fluctuations in allotments that CID is able to provide to their growers, making it difficult to calculate a baseline for annual comparisons. Given these temporal fluctuations, CID estimates that automation of the main canal would provide an increase of water use efficiency of 20-25% annually,

eliminate water lost through spillage, and increase the ability to store water in the canal. The resulting water conserved when utilizing the past 12 irrigation seasons as a baseline would be approximately 4,353 acre feet per year.

Describe current losses: Please explain where the water that will be conserved is currently going and how it is being used. Consider the following:

- Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch seeping into the ground)?
 - ❖ Currently water lost from the canal is being spilled at the end and seeping into the ground, over deliveries into agricultural customer's property resulting in unrecoverable water loss.
- If known, please explain how current losses are being used. For example, are current losses returning to the system for use by others? Are current losses entering an impaired groundwater table becoming unsuitable for future use?
 - ❖ Current water losses are spilled from the end of the canal into the Black River, rendering it unrecoverable with no known usage.
- Are there any other known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?
 - ❖ There are no known benefits from the associated water loss.

Describe the support/documentation of estimated water savings: Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Please be sure to consider the questions associated with your project type when determining the estimated water savings, along with the necessary support needed for a full review of your proposal.

- ❖ Quantifiable water savings have been calculated by leveraging the available USGS gauging stations, one is upstream and one is downstream of the wastewater. CID staff calculates an estimated average of 4,490 acre feet per year lost from the end of the canal. Implementing full automation of the project canal is estimated to eliminate spillage between 50-90%, resulting in an estimated average annual savings of 2,245-4,042 acre feet per year.

Please address the following questions according to the type of infrastructure improvement you are proposing for funding. Irrigation Flow Measurement: Irrigation flow measurement improvements can provide water savings when improved measurement accuracy results in reduced spills and over-deliveries to irrigators. Applicants proposing irrigation flow measurement projects should address:

- How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.
 - ❖ Yes, quantifiable water savings have been determined by establishing an annual average baseline of water spilled from the main canal by leveraging two USGS

gauging stations upstream and downstream of the project canal. Twelve years of data was analyzed to account for variations in seasonal allotments (Appendix A), and established a baseline average of 4,490 acre feet per year. Given the high level of automation this project proposes, the manufacturer estimates a conservative rate of 50-90% reduction in overall spills based on prior performance in similar projects. Application of the manufacturer's rate to the established baseline suggests an average annual savings of 2,245-4,042, dependent upon annual allotments.

- *Have current operational losses been determined? If water savings are based on a reduction of spills, please provide support for the amount of water currently being lost to spills.*
 - ❖ Current operational losses via spillage have not been collected by canal operators. Water currently being lost is not able to be quantified due to lack of available infrastructure to quantify spillage. A baseline has been determined by leveraging annualized flow data for the affected canal.
- *Are flows currently measured at proposed sites and if so, what is the accuracy of existing devices? How has the existing measurement accuracy been established?*
 - ❖ Water is measured along the main canal by utilizing USGS gauge #08403500, which has an accuracy level of 99.8%.
 - ❖ Most of the laterals are measured using Parshall flumes with accuracy of +/- 5%.
 - ❖ Some laterals are unable to be measured due to topography and space limitations of Parshall flumes.
- *Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.*
 - ❖ Rubicon SlipMeters and FlumeGates automatically adjust to maintain a consistent flow rate in response to changes in upstream and downstream flows which reduces the amount of water deemed unrecoverable from spillage. Additionally, Rubicon gates can be utilized to monitor and meter the flow of water with an accuracy of +/- 2.5%.
- *Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?*
 - ❖ Yes, implementation of this project will reduce over deliveries by ensuring proper cut offs and increasing water delivery in a timely manner.
- *How will actual water savings be verified upon completion of this project?*
 - ❖ After the Rubicon headgates are installed and integrated into the SCADA system, flows into the canal, and amounts of water spilled, will be compared to historical canal operator entries and/or existing monthly spill totals recorded by the SCADA system. Monthly post-project water balance values will also be compared to pre-project mass balances during the months without precipitation events to evaluate

if a mass balance comparison can be used to evaluate the performance of the Rubicon headgates, generally between June and October annually.

- ❖ The USGS gages in Black River will also be used to determine the reduced volume of water being spilled.

Evaluation Criteria B – Renewable Energy

Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery

Describe the amount of energy capacity. For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate

- ❖ N/A

Describe the amount of energy generated. For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate. Please explain how the power generated as a result of this project will be used, including any existing or planned agreements and infrastructure.

- ❖ N/A

Describe the status of a mothballed hydropower plant. For projects that are bringing mothballed hydropower capacity back online, please describe the following:

- Clearly describe the work that will be accomplished through the WaterSMART Grant. Note: normal OM&R activities are not eligible for funding. The work being proposed must be an investment.

- ❖ N/A

- Provide information about the capacity (in kilowatts) of the existing hydro system and the expected capacity once it is brought back on-line.

- ❖ N/A

- Provide information about the duration that the hydro system has been offline and the reasons why it has been mothballed. Please include any regulatory reporting or filings (e.g., FERC filings) or other documentation regarding the system

- ❖ N/A

Describe any other benefits of the renewable energy project. Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:

- How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions

- ❖ N/A

- *Expected environmental benefits of the renewable energy system*
 - ❖ N/A
- *Any expected reduction in the use of energy currently supplied through a Reclamation project.*
 - ❖ N/A
- *Anticipated benefits to other sectors/entities*
 - ❖ N/A
- *Expected water needs, if any, of the system.*
 - ❖ N/A

E.1.2.2. Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

- *If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.*
 - ❖ N/A
- *How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*
 - ❖ **The CID Main Canal Automation Project will offset impacts of climate change by allowing CID to reduce the amount of greenhouse gas emissions due to less vehicle travel. The reduction is conservatively estimate to be 108,683 KWh/year as a result of this project (see calculation below).**
- *If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?*
 - ❖ N/A
- *Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.*
 - ❖ N/A
- *Does the calculation include any energy required to treat the water, if applicable?*
 - ❖ N/A
- *Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.*
 - ❖ **Yes, the automation of the canal negates the need for individual employees to travel to the site to manage the canal. The elimination of routine vehicle travel reduces the overall carbon emissions associated with manual operations of gates. Energy Savings from Reduced Vehicle Miles Driven: This project would create an additional energy savings through reducing fossil fuel consumption. By replacing the manual gates with Rubicon automated gates, District staff will no longer need**

to drive to the 58 gate locations to manually set gate heights. It is conservatively assumed that 10 miles are driven for each gate. 58 gates x 10 miles/gate x 100 (no of times gates are manually adjusted per year) = 58,000 miles/year Using EPA’s average of 21.5 miles/gallon and adding 10 percent for the stop-and-go condition, we estimate the following: 39,978 miles per year / 21.5 miles per gallon = 1859 x1.10 = 2,045 gallons/year U.S. EPA parameters specify 1.25 therms/gallon of fuel and 29.3 kWh/therm. Using these values, there will be approximately 108,683 kWh/year that will be saved as a result of this project.

- *Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).*
 - ❖ Renewable energy components associated with the CID Main Canal Automation project include solar panel that will allow the gates to automatically be controlled from a central location rather than manually controlled. These solar panels will be placed atop the control pedestal which is placed along the bank of the canal.

Evaluation Criteria C – Sustainability Benefits

Enhancing drought resiliency. In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that enhance drought resiliency, through this section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will enhance drought resilience by benefitting the water supply and ecosystem, including the following:

- *Does the project seek to improve ecological resiliency to climate change?*
 - ❖ Yes, an increase in water use efficiency within the CID system will result in a decreased need to pump water from wells, which helps to reduce the stress on groundwater usage. An overall increase in water use efficiency reduces the need to pump water from the river which allows for more water to be available to stay in the river which in turn improves the overall ecological resiliency of the riparian system.
- *Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels).*
 - ❖ Yes, this project will improve the district’s ability to control flow through the canal, resulting in water being held for longer durations of time. Though implementation of automation water usage will not only be able to be quantified, spills reduced, but the level of water will be maintained to a higher degree to ensure efficient deliveries to agricultural customers
- *Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water*

supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).

- ❖ There are no known endangered species or designated critical habitat within the proposed project area.
 - ❖ CID does coordinate with Reclamation on meeting the flow targets in the critical habitat reaches of the Pecos Bluntnose Shiner. This critical habitat is in the Pecos River south of Sumner Dam and north of Brantley Lake, 25 miles north of the proposed project. The accumulated water savings associated with this project will positively affect water storage levels in Sumner and Santa Rosa dams, which will allow better coordination with available water to keep the river wet for the Bluntnose Shiner.
 - ❖ Additionally, the Texas Hornshell Mussel was listed as an endangered species by the US Fish and Wildlife Service (FWS) in February 2018. The occupied habitat for the Hornshell includes a portion in the Black River upstream from the CID Dam. The Black River CID Dam is located 3.5 miles due south from the proposed project. CID signed a Candidate Conservation Agreement with Assurances (CCAA) for the Texas Hornshell and other Covered Species. The other covered species are the Rio Grande River Cooter, Gray Redhorse, Blue Sucker, and Pecos Springsnail. Once fully implemented, the CCAA will provide guidance for the conservation and management of these species and their habitat by reducing or eliminating threats to the species.
- *Please describe any other ecosystem benefits as a direct result of the project.*
 - ❖ N/A
 - *Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?*
 - ❖ Yes, the project will allow canal operators to more accurately control flow and eliminate spills. Additionally, the SCADA integration will allow for a quicker response to changes within the system allowing for more efficient management of water to take place.

Addressing a specific water and/or energy sustainability concern(s). Will the project address a specific sustainability concern? Please address the following:

- *Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability, such as shortages due to drought and/or climate change, increased demand, or reduced deliveries*
 - ❖ CID’s project seeks to reduce water losses at the end of the canals as well as better manage the existing water flows within the canal system. In times of drought the ability to meter water and preventing water from becoming unrecoverable is paramount to ensuring sustainable water management

practices. Climate change has increased the severity and duration of dry years in New Mexico, creating large fluctuations in water availability for the region. Automation of the canal would not only create the opportunity for CID to manage flows in dry years, but will also allow for more water to be held in the canal for use later in the season.

- *Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.*
 - ❖ N/A
- *Please describe how the project will directly address the concern(s) stated above. For example, if experiencing shortages due to drought or climate change, how will the project directly address and confront the shortages?*
 - ❖ This project is expected to reduce the overall amount of water lost at the canal ends, reducing the amount of total water required to meet CID’s demands while preventing wastage of water by preventing unnecessary amounts of water loss and increasing the ability of CID to hold water in the canal. Additionally, this project will allow CID to more adequately control and measure the flow of water, which will in turn increase the ability of the district to maintain customer’s service levels.
- *Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*
 - ❖ Water conserved as a result of this project will remain in the canal for later usage, reducing the overall number of diversions required seasonally. Water that is conserved via this project that remains in the lakes is likely to be held for use later in the season during dry years. Since there are water rights within the project that are supplemental to CID rights, there will be reduced groundwater pumping because of the increased water delivery when full allotments are not available.
- *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*
 - ❖ Water conserved as a result of this project will be preserved in the canal or remain in the lakes as storage for use later on.
- *Indicate the quantity of conserved water that will be used for the intended purpose(s).*
 - ❖ The exact quantity of water that will be conserved will vary annually depending upon total water allotments flowing through the system. An estimated amount of water to be saved is +/- 4,353 acre feet per year. It is expected that water which has already been diverted to the canal and conserved as a result of this project will be retained within the CID system.

Other project benefits. Please provide a detailed explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:

(1) Combating the Climate Crisis: E.O. 14008: “Tackling the Climate Crisis at Home and Abroad”, focuses on increasing resilience to climate change and supporting climate-resilient development. Please describe how the project will address climate change, including:

- *Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.*
 - ❖ **Creating automation within the district’s canal will address the impacts of climate change through the responsible usage of available water. The use of automated gates increases water conservation between 5-10% of total annual flow while reducing water lost through spillage by 50-90%. The installation of the Rubicon automated head headgates will adapt to the changing canal water levels in real time, negating the need for canal operators to drive to each site and make changes to the spill releases, or canal flows. The elimination of routine vehicle travel reduces the overall carbon emissions associated with manual operations of gates.**

- *Does this proposed project strengthen water supply sustainability to increase resilience to climate change?*
 - **Yes, the project will increase the efficiency and sustainability of the delivery of water to agricultural providers by minimizing spillage through automation. Correctly timed releases aid in application efficient that increase sustainability and resiliency during times of drought brought on by climate change.**

- *Will the proposed project establish and utilize a renewable energy source?*
 - ❖ **Yes, the automated gates are powered renewable solar energy panels that is placed atop the control pedestal.**

- *Will the project result in lower greenhouse gas emissions?*
 - ❖ **Yes, currently all head gate adjustments in the project area are accomplished manually. The introduction of automation via this project will eliminate the need for ditch tenders to drive to individual gates to make changes and evaluate flow. The reduction in miles driven will lower the number of emissions generated from CID vehicles. Water conserved via this project will create a lower need for water to be pumped to meet demand, resulting in an overall decrease in the demand placed on the pumps throughout the system.**

(2) Disadvantaged or Underserved Communities: E.O. 14008 and E.O. 13985 support environmental and economic justice by investing in underserved and disadvantaged communities and addressing the climate-related impacts to these communities, including impacts to public

health, safety, and economic opportunities. Please describe how the project supports these Executive Orders, including:

- *Does the proposed project directly serve and/or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to: public health and safety through water quality improvements, new water supplies, new renewable energy sources, or economic growth opportunities.*
 - ❖ **Yes, this project will provide consistent agricultural water availability within CID's service area as precipitation continues to become more variable. Agriculture is highly affected by variations in climatological conditions associated with global climate change, leaving growers within CID's service area at a high risk for being negatively economically impacted by climate change. Eddy County, New Mexico's agricultural sector is a growing industry that has experienced 16% growth over a 2 year period (New Mexico Economic Development Department, *Quarterly Economic Summary Eddy County, June 2022*). Additionally, Eddy County has a higher than state average Latino population, with 52.2% identifying as Latino (United States Census Bureau, *2020 5-year ACS*).**
- *If the proposed project is providing benefits to a disadvantaged community, provide sufficient information to demonstrate that the community meets the disadvantaged community definition in Section 1015 of the Cooperative Watershed Act, which is defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the State, or the applicable state criteria for determining disadvantaged statuses.*
 - ❖ **N/A, Eddy County is not economically disadvantaged.**
- *If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.*
 - ❖ **Utilizing data collected via census.gov Eddy County, New Mexico is found to have a higher than state average of individuals who identify as Hispanic or Latino (United States Census Bureau, *2020 5-Year ACS*).**

(3) Tribal Benefits: *The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum "Tribal Consultation and Strengthening Nation-to-Nation Relationships" asserts the importance of honoring the Federal government's commitments to Tribal Nations. Please address the following, if applicable:*

- *Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?*
 - ❖ **No, it will not serve any tribal land.**

- *Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?*

❖ N/A

(4) Other Benefits: Will the project address water and/or energy sustainability in other ways not described above? For example:

- *Will the project assist States and water users in complying with interstate compacts?*
 - ❖ In order for NM to be in compliance with the 1988 U.S. Supreme Court amended decree and the 2003 Pecos River Settlement Agreement CID is responsible to deliver water to Texas when the TX/NM Stateline Compact delivery credit (departures) drops below 115,000 acre feet. Conserving wet water through improving efficiencies will ensure that CID can meet water delivers to Texas when required.
- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*
 - ❖ In addition to the agricultural benefits discussed, the proposed project will lead to more water stored. Both Brantley Lake and Sumner Lake provide flood control, recreational benefits, and habitat for wildlife. Flood control provides the decreased potential for devastating floods to the downstream communities of Roswell, Artesia, Carlsbad, Loving, and Malaga. Recreational benefits provide wonderful outdoor opportunities, such as boating, fishing, swimming, kayaking, and bird watching. Brantley Lake has an annual visitation of 175,000 visitors. Both flood control and recreational benefits are assets to the local communities.
- *Will the project benefit a larger initiative to address sustainability?*
 - ❖ Yes, this project is one of several automation installations across the district to implement technological upgrades aimed at properly managing the finite annual supply of water. The proposed project contributes to accomplishment of the State of New Mexico’s strategies to meet future water demand, as defined in the Lower Pecos River Regional Water Plan (LPRRWP), by reducing water loss through conveyance channels and conserving agricultural water. Refer to section E, below, for more on the LPRRWP. This project will create tangible reductions in water loss regionally, in addition to aiding the statewide total of cumulative water loss reduction efforts, which in turn creates a dramatic impact.
- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*
 - ❖ Wet water in the Lower Pecos Valley region of New Mexico has historically been a point of contention. The principal constraint to use of this water is the 1948 Pecos River Compact. Over the past two decades, New Mexico has made significant

progress toward assuring long-term compliance with its obligations under the Compact.

Evaluation Criteria D – Completing On-Farm Irrigation Improvements

If the proposed project will complement an on-farm improvement eligible for NRCS assistance, please address the following:

Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies.

- *Provide a detailed description of the on-farm efficiency improvements.*
 - ❖ **CID farmers have been eligible to qualify for NRCS assistance and completed on-farm improvements.**
- *Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?*
 - ❖ **N/A**
- *If available, provide documentation that the on-farm projects are eligible for NRCS assistance, that such assistance has or will be requested, and the number or percentage of farms that plan to participate in available NRCS programs*
 - ❖ **N/A**
- *Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*
 - ❖ **N/A**

Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.

- *Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how? For example, installing a pressurized pipe through WaterSMART can help support efficient on-farm irrigation practices, such as drip-irrigation.*
 - ❖ **N/A**

OR

- *Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?*
 - ❖ **N/A**

Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.

- *Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.*
 - ❖ **N/A**

Please provide a map of your water service area boundaries. If your project is selected for funding under this NOFO, this information will help NRCS identify the irrigated lands that may be approved for NRCS funding and technical assistance to complement funded WaterSMART projects.

Evaluation Criteria E – Planning and Implementation

E.1.5.1. Subcriterion E.1— Project Planning

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Does the project address an adaptation strategy identified in a completed WaterSMART Basin Study?

- CID does not currently have a water conservation plan in place.

Provide the following information regarding project planning:

- *Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.*

- ❖ Aging infrastructure has been identified as a major concern and is part of CIDs capital improvement goals. This proposed project will address multiple aspects of CIDs capital improvement goals by replacing 58 Main Canal head gates (refer to fig on Appendix B), some of which are over 125 years old, and integrating automation within CIDs delivery system. On top of ensuring water to members, CID acknowledges the need to conserve as much water as much as possible. Leakage has been a concern for the CID; the annual average water loss for the last decade is 32%. In years when CID does not have enough water in storage to give farmers a full allotment, such as the past 3 years, CIDs losses increase sometimes to as high as 50%. One of CIDs capital improvement goals is to address portions of the system that are major contributors to this water loss. The CID Main Canal Automation Project is one of the most important capital improvement goals.

In addition, the State of New Mexico Interstate Stream Commission, in conjunction with the CID, established a Lower Pecos River Regional Water Plan in December 2016. This plan identified key strategies to meet water demand. Among these were agricultural water conservation by increasing efficiency and preserving agricultural rights. The plan also identified reduction in water losses as key program and policy recommendation. Stating that losses from conveyance channel are significant and should be addressed. The proposed project addresses agricultural water conservation and reduction in water loss. The State of New Mexico is also in the process of developing a

State Water Plan, which has yet been finalized, but public meetings and work group products indicate the goals will be similar to the LPRRWP.

- *Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*
 - ❖ In addition to the discussion above, CID has continually tried to implement technology into our over century old system. Funding received through a WaterSmart grant awarded in 2012 allowed CID to install a solar powered SCADA system and approximately 20 flow measurement sites were improved. This project was completed in 2015 and has aided in CID’s ability to more adequately measure flow and identify areas of high water loss within the system.
 - ❖ In 2009 CID as part of CIDs capital improvement efforts, CID hired a contractor to apply Aqualastic polyurea material on one of the historically worst sites for seepage within CID. Additionally, CID received a small scale water efficiency WaterSmart Grant in 2018 and successfully completed that project.
 - ❖ The future capital improvement plans for CID are to continue with system automation and begin to pipe laterals. The CID Main Canal Automation project will assist in identifying the best next steps to meet CIDs capital improvement goals.
 - ❖ The farmers will also have the option to purchase metering gates to be installed at their points of delivery. This will result in better accuracy for water charges, and allow CID to calculate the volume of water loss in each section of laterals where these are installed. This data will allow CID to pinpoint the areas of highest leakage and allow us to develop an efficient plan to repair or replace these sections.
- *If applicable, provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed WaterSMART Basin Study or Water Management Options Pilot (e.g., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes)*

❖ *NA*

E.1.5.2. Subcriterion E.2— Readiness to Proceed

Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- *Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description*

provided in Section D.2.2.2. Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.

- ❖ **Once funding for this project is awarded and a Notice To Proceed is issued by Reclamation, CID Field Service crews will begin ordering the headgates and materials. Once CID receives notification of the delivery date of the Rubicon headgates, a firm schedule for installation will be finalized and canal outages scheduled. Scheduling will be arranged in such a manner that several Rubicon headgates can be commissioned each day.**

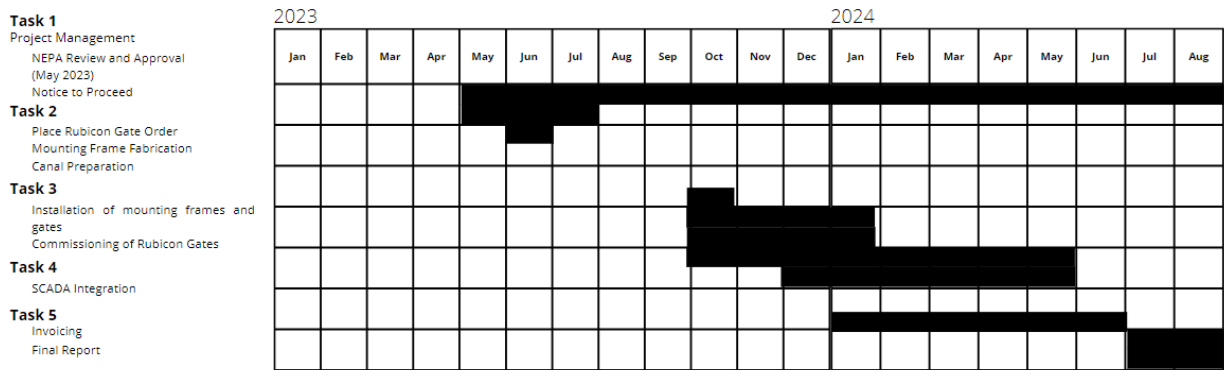
The beginning phases of the project are expected to start on June 1, 2023. Actual construction of the Main Canal Gates must occur when no water will need to be in the Main Canal. This means construction will begin November 1, 2023, and end March 2024. It is expected to take two days to install each headgate; one day to prepare the canal, and one day to install and commission the headgate. CID is expecting project close out to last until August 2024, see Figure 3 below.

Construction and any ground disturbing activities will be performed within a small radius of the existing headgate and canal. Ground disturbing activities will be minimal, no permits are expected to be required.

- *Describe any permits that will be required, along with the process for obtaining such permits.*
 - ❖ **No permits are expected to be required to complete this project. If it is determined a permit is necessary, it will be obtained prior to any ground disturbing activities.**
- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*
 - ❖ **Each headgate installation is unique, requiring some modification to the canal. CID field crews are familiar with similar construction techniques and will work with the vendor’s staff to install the headgates. Engineering designs will not be required for the installations.**
- *Describe any new policies or administrative actions required to implement the project.*
 - ❖ **No new policies or administrative actions will be required to implement and complete this project.**

- Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation Regional or Area Office.

Figure 3: CID Main Canal Automation Project Schedule



Evaluation Criteria F – Collaboration

Please describe how the project promotes and encourages collaboration. Consider the following:

- Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?
 - ❖ Organizations that support this project include Carlsbad Soil and Water Conservation, New Mexico Association of Conservation Districts, and also Pecos Valley Artesian Conservancy District.
- What is the significance of the collaboration/support?
 - ❖ Water conservation is of utmost importance in the arid region of Southeast New Mexico. It is important these conservancy districts support this project.
- Will this project increase the possibility/likelihood of future water conservation improvements by other water users?
 - ❖ Yes, the introduction of automation within CID’s service area paired with the high level of automation is likely to increase regional interest and trust in implementing technological improvements in irrigation infrastructures.
- Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).
 - ❖ Please see the Letters of Support section of the application for copies of the documents.

Evaluation Criteria G – Additional Non-Federal Funding

State the percentage of non-Federal funding provided using the following calculation:

Evaluation Criteria H – Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider:

- *Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?*
 - ❖ The original Carlsbad Project was authorized by the Secretary of the Interior on November 28, 1905, with the formal purchase taking place December 18, 1905. Subsequently, a number of federally constructed features superimposed on the private irrigation works, the most notable of these include Avalon Dam (1907) and Avalon Dam cylinder gates (1911) and the Pecos River Flume (1903). Sumner Dam was authorized for construction by the President on November 6, 1935, under the Emergency Relief Appropriations Act of 1935. Section 7 of the Flood Control Act of August 11, 1939, declared Sumner Dam and Lake Sumner were to be used first for irrigation, then for flood control, river regulation, and other beneficial uses. Brantley Dam and Reservoir of the Brantley Project was authorized on October 20, 1972, by Public Law 92-514, for the purposes of irrigation, flood control, fish and wildlife, recreation benefits, and to provide protection for Avalon Dam and as a replacement of McMillan Dam which was determined to be unsafe. McMillan Dam was breached in 1991, as it neared its hundredth birthday. See Attachment B for a map showing the location of the Dams. The transfer from federal to local control occurred on October 1, 1949, beginning a new chapter in the irrigation system's operation. However, title to the property remained in federal hands. Pursuant to an Act of Congress in 2001, CID acquired all the land rights covering the distribution and drainage system from the U.S. This transfer did not include the system's dams and reservoirs. CID is the fee owner of lands and easements that cover both Laterals and Canals. Today, Reclamation is responsible for the operation, maintenance, and oversight of the Carlsbad Project reservoirs. However, the CID, diverts and delivers irrigation water to its members. By contract with the Reclamation, the CID operates and maintains Sumner, Brantley, and Avalon Dams.

If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?

- ❖ N/A
- *Will the proposed work benefit a Reclamation project area or activity?*

- ❖ This project is extensively connected to multiple Reclamation projects along the Pecos River, both past and present. A majority of the conservation work done along the 1,000 mile Pecos River in the last century has been conducted by Reclamation directly or as a partner. Specifically, all but one of the dams located on the Pecos River were constructed and are overseen by Reclamation.
- *Is the applicant a Tribe?*
 - ❖ No, CID is not a tribe.

Performance Measures

Pre-project quantification of benefits will be completed through the evaluation of historical spill and flow records collected via canal operator entries. Canal ends within the project scope do not currently have SCADA and are therefore unable to produce data for comparison.

After the Rubicon headgates are installed and integrated into the SCADA system, flows into the canal, and amounts of water spilled, will be compared to historical canal operator entries and/or existing monthly spill totals recorded by the SCADA system. This information make take some time to obtain, to allow for system calibration and optimal SCADA system operation.

D.2.2.3. Project Budget

The project budget includes:

- (1) Budget proposal
- (2) Budget narrative
- (3) Funding plan and letters of commitment

Incurrence of pre-award costs is not authorized without prior written approval of the awarding Grants Officer. Per 2 CFR 200.458, pre-award costs are those incurred prior to the effective date of the Federal award or subaward directly pursuant to the negotiation and in anticipation of the Federal award where such costs are necessary for efficient and timely performance of the scope of work. If the proposed project is selected, the awarding Reclamation Grants Officer will review the proposed pre-award costs to determine if these costs are consistent with program objectives and are allowable in accordance with the authorizing legislation. Proposed pre-award costs must also be compliant with all applicable administrative and cost principles criteria established in 2 Code of Federal Regulations (CFR) Part 200 and all other requirements of this NOFO. In no case will costs incurred prior to April 1, 2022, be considered for inclusion in the final approved project budget.

Please note that the costs for preparing and submitting an application in response to this NOFO, including developing data necessary to support the proposal, are not eligible project costs under

Project Budget

Funding Plan and Letters of Commitment

Please identify the sources of the non-Federal cost-share contribution for the project, including:

- Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)
 - ❖ CID’s portion of cost share will be from CID Savings account.
- Any costs that will be contributed by the applicant
 - ❖ CID will be contributing labor, equipment, and funds.
- Any third-party in-kind costs (i.e., goods and services provided by a third party)
 - ❖ N/A, CID will not be utilizing third-party in-kind for this project.
- Any cash requested or received from other non-Federal entities
 - ❖ CID will be presenting this project to the local Soil and Water Conservation District. If funding is available, Cid will be applying for funds from the Conservation District to be used as part of the matching funds for this project.
- Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied
 - ❖ There are no pending funding requests in conjunction with this project.

Budget Proposal

Table 1.—Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Applicant In-Kind and Cash Contributions	\$1,300,081.71
Non-Federal Subtotal	\$
REQUESTED RECLAMATION FUNDING	\$1,300,000

Table 2.

Funding Sources	Amount
Applicant In-Kind contributions	243,036.71
Applicant Cash Contribution	1,057,045.00
Total requested from Reclamation	1,300,000.00
Proposed Project Total	2,600,081.71

Table 3.

Budget Item	\$/unit	Quantity	recipient funding	Reclamation Funding	Total cost
Salaries and wages					
District workers	26.50	1,680.00	44,520.00		44,520.00
District Managers	41.00	100.00	4,100.00		4,100.00
District Supervisor	34.00	150.00	5,100.00		5,100.00
Administrative Employees	34.00	150.00	5,100.00		5,100.00
Fringe Benefits					
Full Time Employees	9.53	2,080.00	19,822.40		19,822.40
Equipment					
Gradall	155.00	280.00	43,400.00		43,400.00
Backhoe	65.00	280.00	18,200.00		18,200.00
Dump Truck	75.00	280.00	21,000.00		21,000.00
Heavy duty Pickup truck	29.00	560.00	16,240.00		16,240.00
Heavy duty Pickup truck	29.00	350.00	10,150.00		10,150.00
Cement mixer	32.00	400.00	12,800.00		12,800.00
Supplies and Materials					
Cement	195.18	66.00	12,881.88		12,881.88
Framing materials	116.00	75.00	8,700.00		8,700.00
Snap Ties	10.00	150.00	1,500.00		1,500.00
Misc. construction material(rebar, bolts)			8,500.00		8,500.00
Contractual/Construction					
Contractor A			1,057,045.00	1,300,000.00	2,357,045.00
TOTAL ESTIMATED DIRECT PROJECT COST					2,589,059.28
Indirect Costs					
de minimus 10%	0.10	110,224.28	11,022.43		11,022.43
TOTAL ESTIMATED PROJECT COST					2,600,081.71

Budget Narrative

Salaries and Wages

All CID employees that perform any work directly related to this project will be accounted for as a Cost Share expense. For the development of the budget, the highest hourly wage for each position expected to work on this project was used to calculate the total projected labor costs. Actual amounts paid to each employee, including fringe benefits, will be reported in reimbursement requests.

Fringe Benefits

CID employees are paid a salary or hourly wage commensurate with their current job title and wage step. CID employees are also provided with fringe benefits. The amount of fringe benefit paid to each employee varies from pay period to pay period due to how the benefits are calculated each pay period.

Travel

No travel expenses are expected, nor will any travel expenses be included or authorized in conjunction with this project.

Equipment

No new motorized equipment will be purchased for this project. This project is expected to only use motorized equipment within the current CID fleet and ownership. If equipment is required to complete the project that CID does not currently have in our fleet, motorized equipment may be rented from an approved CID vendor at the rates provided by the vendor, without any markups by CID. CID will be utilizing our equipment to complete the civil site work. This will include a Gradall, Backhoe, Dumptruck, Cement Mixer. CID will be using a heavy duty truck to tow the cement mixer and supplies. A truck will also be used to transport District workers. The rates for the trucks include fuel.

Materials and Supplies

Materials required for a complete project includes, but is not limited to: Rubicon SlipMeter, Rubicon FlumeGates (various sizes); lengths of aluminum angle, strap and channel metal for frame construction; sack concrete and reinforcing wire for pad construction for the Rubicon headgate pedestal and communication cabinet; communication equipment and cabinets, solar panels, batteries, rough cut redwood to create forms to construct concrete pads and other features; electrical conduit, various fasteners, sealants and other miscellaneous items. Where possible, supplies within the CID warehouse will be used, with the costs based upon the variable average weighted cost of each item used.

Other Expenses

Unknown

Indirect Costs

In accordance with 2 CFR Sec. 200.68 regarding Modified Total Direct Cost, the District has included a de minimis rate of 10% of the Modified Total Direct Costs (MTDC). The MTDC reflects the Total Direct Costs minus unallowed costs.

Environmental and Regulatory Compliance Costs

CID does not anticipate there being any Environmental or Regulatory costs associated with this project. CID will work with Reclamation to ensure environmental compliance for this project.

Contractual

Rubicon will be installing software and new gates along the main canal.

Third-Party In-Kind Contributions

None

Environmental & Cultural Resource Compliance

Please answer the questions from Section H.1. Environmental and Cultural Resource Considerations in this section.

- *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*
 - ❖ **The work locations for the installation of the Rubicon headgates are not expected to adversely impact the surrounding areas. Earthwork will be limited to the canal berms, in previously disturbed soils, typical of routine CID canal maintenance activities.**
- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*
 - ❖ **There are no known endangered species or designated critical habitat within the proposed project area. The District does coordinate with Reclamation on meeting the flow targets in the critical habitat reaches of the Pecos Bluntnose Shiner. This critical habitat is located in the Pecos River north of Brantley Lake, 25 miles north of the proposed project.**
Additionally, the Texas Hornshell Mussel was listed as an endangered species by the US Fish and Wildlife Service in February 2018. The occupied habitat for the Hornshell includes a portion in the Black River upstream from the CID Dam. The Black River CID Dam is located 3.5 miles due south from the proposed project. The District signed a Candidate Conservation Agreement with Assurances (CCA) for the Texas Hornshell and other Covered Species. The other covered species are the Rio Grande River Cooter, Gray Redhorse, Blue Sucker, and Pecos Springsnail. Once fully implemented, the CCA will provide guidance for the conservation and management of these species and their habitat by reducing or eliminating threats to the species. One of the major threats to the Hornshell is salinity. The proposed project will aid in the reduction of salinity within the occupied habitat.
- *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States”? If so, please describe and estimate any impacts the proposed project may have.*

- ❖ There are no wetlands or other surface waters within or potentially within the project boundaries. Each of the project work sites are directly on the canal, or canal berms.
- *When was the water delivery system constructed?*
- Early construction of the Carlsbad Project began in 1887 and continued into the turn of the century, this included a majority of the canals, laterals, drains and CID's main diversion dam (Avalon). Sumner Dam (formerly Alamogordo Dam) was authorized for construction by the President in 1935 and was completed in 1937. In 1967, the CID entered into the R&B Program with the Reclamation for concrete lining and improvement of the irrigation distribution system. This program resulted in concrete lining and improvements to some 79 miles of laterals. Brantley Dam and Reservoir was authorized by Congress on October 20, 1972, and construction finally began in 1984 and was largely finished by 1989.
- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*
 - ❖ There will be modification made to the current gates that are on the main canal. CID will be replacing current gates, some of which are 125 years old, for the automated gate system.
- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*
 - ❖ Many features of the Carlsbad Project are listed on the National Registrar of Historic Places, most notably the Pecos River Flume and Avalon Dam. The Carlsbad Irrigation District was Designated a National Historic Landmark in 1975. Coordination with the New Mexico Historic Preservation Division will be required, but CID does not anticipate any issues arising from this project.

Historic American Engineering Record: HAER NM-4
National Register of Historic Places NRHP Number: 66000476
- *Are there any known archeological sites in the proposed project area?*
 - ❖ There are no known archeological sites in the proposed project area. Construction activities are expected to be limited to a 30 foot radius of the existing headgate or spill in previously disturbed soil.

- *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*
 - ❖ **No, this project will not adversely affect any populations of any sort.**

- *Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?*
 - ❖ **No, this project will not restrict access.**

- *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*
 - ❖ **No, there are no known noxious weeds or non-native species known to occur at or near any of the proposed work locations.**

Required Permits and Approvals

Permits or approvals are not expected to be needed for this project as all activities are within the canal, canal berm, and CID operated facilities. No work is expected to be performed within a State, County, or Railroad right-of-way, negating the need for encroachment permits.

During the process if it is determined that a permit is needed, all regulations and procedures to obtain the permit will be followed prior to any work continuing.

Letters of Support



Carlsbad Soil & Water Conservation District

3219 S. Canal, Carlsbad, N.M. 88220

Phone: 575-628-1532

Fax: 575-885-5386

swcd@carlsbadsoilandwater.org

July 19, 2022

Bureau of Reclamation

To Whom It May Concern,

As the board chairman of the Carlsbad Soil and Water Conservation District (CSWCD), I am writing in support of the Carlsbad Irrigation District (CID) in their efforts to secure funding for improvements to the CID irrigation system.

The proposed improvements have the potential to save over 4300 acre feet of water per annum. In a country where every drop of water counts, the benefit would impact not only the producers, but the overall watershed as well while helping to meet the obligations to those downstream.

Thank you for your consideration and support of this project as we all strive for water conservation for the benefit of future generations.

Sincerely,

A handwritten signature in black ink, appearing to read 'N. Jurva', is written over a light blue horizontal line.

Nathan Jurva, Chairman
Carlsbad SWCD

NJ:sw



NEW MEXICO ASSOCIATION OF CONSERVATION DISTRICTS NMACD

163 Trail Canyon Road
Carlsbad, NM 88220

575 361-1413
conserve@nmacd.org

July 19, 2022

Bureau of Reclamation

On behalf of the New Mexico Association of Conservation Districts (NMACD) , I am writing in support of the Carlsbad Irrigation District’s (CID) application for federal funding of the WaterSmart (WEEG) grant.

CID’s proposal to implement the Total Canal Control project will conserve water and deliver in a more structural and efficient manner which will decrease annual water losses. Water is the life blood of New Mexico and in this desert state, we must utilize technology to help us all better manage this precious resource.

The Total Canal Control project will replace existing irrigation gates along the main canal. The main canal stretches 37 miles from Lake Avalon to the village of Malaga, in which the water will travel through the beautiful historical landmark “The Flumes” for delivery of water to our town’s farmers.

As more and more of our farmland is converted into commercial and industrial land, we must help the existing farmers with smarter water management. With only 1-2 percent of the population involved in agriculture, new technologies are more important than ever before to help us feed the growing population projected to be at 9 billion by 2050.

Thank you for consideration of this grant proposal.

Debbie Hughes, NMACD Executive Director



Stuart Joy, Artesia
District 5

Greg Alpers, Roswell
Chairman, District 1

Mike Fallwell, Dexter
District 3

Richard Smith, Roswell
Sec/Treas. District 2

Dwight Menefee, Lake Arthur
Vice Chairman, District 4

PECOS VALLEY ARTESIAN CONSERVANCY DISTRICT

P.O. BOX 1346
ROSWELL, NEW MEXICO 88202-1346
TELE (575)-622-7000

July 21, 2022

Dear Whom, it may concern:

Re: Main Canal Automation Project

On behalf of the Pecos Valley Artesian Conservancy District, please accept this letter of support for the Carlsbad Irrigation Districts (CID) application for funding for their Main Canal Automation project.

The Pecos Valley Artesian Conservancy District (PVACD) was created to conserve the waters of the Roswell-Artesian Basin, including the lands within the Basin located in both Chaves and Eddy Counties and as such, supports any endeavors that could make the delivery of irrigation water more efficient.

This project will aid CID in achieving the best results in water delivery and eliminate errors of calculations of water delivery, thereby reducing the amount of water lost to the system.

If you require more information about PVACD or our support of this grant proposal, please contact me.

Sincerely,



Aron Balok
Superintendent
Pecos Valley Artesian Conservancy District

Official Resolution



Coley Burgess
Manager, Secretary-Treasurer
Assessor/Collector

Carlsbad Irrigation District

CO-OPERATING WITH DEPARTMENT OF INTERIOR
25,055 ACRES UNDER IRRIGATION
5117 GRANDI ROAD – PHONE 575/236/6390
CARLSBAD, NM 88220
E-Mail – cid@plateaunet.net

BOARD OF DIRECTORS
Gary Walterscheid, President
Mary Barnhardt, V. President
Charles Jurva, Director
John Wright, Director
Alisa Ogden, Director

Resolution No. 2022-005

A RESOLUTION authorizing the submittal of a grant application by the Carlsbad Irrigation District for the WaterSMART Water and Energy Efficiency Grant (WEEG) for Fiscal Year 2023 (Funding Opportunity Announcement No. R23AS00008) by the US Department of the Interior Bureau of Reclamation.

WHEREAS, the Carlsbad Irrigation District has applied for the WaterSmart WEEG for Year 2023; and,

WHEREAS, a requirement of the assistance application requires the Board to commit to the financial and legal obligations associated with receipt of WEEG Grant Financial Assistance;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors for the Carlsbad Irrigation District, as follows:

Section 1. The Board hereby delegates authority to its Manager, Coley Burgess or Board Member, Mary Barnhart to enter into the agreement with the Bureau of Reclamation, if the District is awarded WEEG Grant Financial Assistance.

Section 2. The Board of Directors has reviewed and supports the WEEG Grant Financial Assistance application, as submitted by the Board on behalf of the District.

Section 3. The District has the capabilities to provide needed financial assistance and/or in-kind contributions, as specified in the District’s application proposal, by no more than ten percent (10%), as necessary to secure the WEEG Grant.

Section 4. The Board, on behalf of the District, will work with the Department of the Interior’s Bureau of Reclamation to meet deadlines established for entering into a cooperative agreement, if the District receives WaterSMART WEEG Financial Assistance.

DATED this 12th day of July, 2022.

APPROVED BY:

Gary Walterscheid, Board of Directors President

Mary Barnhart, Board of Directors Vice President

Charles Jurva, Board Member

John Wright, Board Member

Alisa Ogden, Board Member