Cordua Irrigation District
Main Canal Flow Control Structure Upgrade & Instrumentation Project

U.S. Department of the Interior, Bureau of Reclamation

WaterSMART – Water and Energy Efficiency Grants for Fiscal Year (FY) 2024 and FY 2025

Funding Opportunity No. R24AS00052

Submitted by:

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3489 Kibbe Road
Marysville, California 95901

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Table 1. Preliminary Project Schedule

Executive Summary

The executive summary should include:

- *The date, applicant name, city, county, and state.*

Applicant: Cordua Irrigation District
3489 Kibbe Road
Marysville, California 95901
Yuba County

Cordua Irrigation District (Cordua; District) is pleased to submit this application for the *WaterSMART – Water and Energy Efficiency Grants for Fiscal Year (FY) 2024 and FY 2025 Notice of Funding Opportunity (NOFO) No. R24AS00052,* on 22 February 2024, to assist in funding Cordua's **Main Canal Flow Control Structure Upgrade & Instrumentation Project** (Project). The Project is located within the District, approximately five miles northeast of the City of Marysville within Yuba County, California.

- *Please indicate whether you are a Category A applicant or Category B applicant.*

Cordua was formed in the late 1890s to divert water from the Yuba River to deliver to nearby landowners for agricultural irrigation purposes. Cordua became a public agency in 1919, formally established under the Wright Act, and is therefore a Category A applicant and meets the applicant eligibility requirement. Cordua provides irrigation water service to approximately 11,500 acres within its jurisdictional area, primarily planted in rice. Cordua is also a Groundwater Sustainability Agency (GSA) for its jurisdictional area and is implementing the Sustainable Groundwater Management Act (SGMA) in coordination with the Yuba Water Agency GSA and the City of Marysville GSA. The three GSAs prepared and adopted the Yuba Subbasins Groundwater Sustainability Plan (GSP), which covers both the North and South Yuba Subbasins.

- *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.*

The Project is located along the Cordua Main Canal, which traverses Cordua's service area from east to west, in the middle of the North Yuba Subbasin of the Sacramento Valley Basin (California Department of Water Resources [DWR] Basin No. 5-021.60; Subbasin). The Project entails replacing/retrofitting flow control structures at 12 points along the Cordua Main Canal with control structures that provide real-time measurements of flow rate and the ability for remote flow control operation to provide efficiency and water conservation benefits. The planned infrastructure upgrades vary by location and include the installation of two (2) Rotork Actuators at one location, installation of between two (2) and four (4) FlumeGate flow control gates/flow measurement devices at the other 11 locations, and installation of SiteConnect Live, a cloud-based SCADA system, at all locations. The Project's water metering and flow control infrastructure improvements will provide efficiency and water conservation savings benefits to the service areas

of the three water purveyors that draw water from the Cordua Main Canal (i.e., Cordua, Hallwood Irrigation Company [Hallwood], and Ramirez Water District [Ramirez]). The Project's equipment upgrades will enable "smarter" operation of the flow control structures by providing more accurate and timely information on flow rates and allowing remote operation, which will increase Cordua's overall water use efficiency by allowing more precise water application and reduced spill/waste. By increasing the efficiency of surface water use, the Project maximizes the beneficial use of finite available surface water supplies by providing in-lieu recharge benefits and decreased demand on the groundwater basin. The expected benefits from the Project are estimated to be **5,010 acre-feet per year (AFY)** of water savings. In addition, by reducing vehicular travel associated with manual flow gate operations, the Project will result in an estimated **18,538 kilowatt-hours per year (kWh/year)** of reduced energy consumption with associated greenhouse gas emissions reduction.

- *Length of time and estimated completion date for the proposed project (month/year).*

The length of the Project is expected to be **36 months** between initial grant administration (starting December 2024) and design steps to construction completion, with an anticipated construction start date of December 2025 and an estimated Project completion date of **December 2027**.

- *Whether or not the proposed project is located on a Federal facility.*

The Project is not located on a Federal facility.

Project Location

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

The Project is located within the Cordua Irrigation District (Cordua) in the North Yuba Subbasin (Department of Water Resources [DWR] Basin 5-021.60, "Subbasin") in Yuba County, California (see **Figure 1**), a medium priority basin whose Groundwater Sustainability Plan (referred to herein as the "Yuba Subbasins GSP") was submitted in January 2020 (ahead of the statutory deadline of January 2022) and approved by DWR in November 2021. The Project's proposed instrumentation and upgrades take place along 12 miles of the Cordua Main Canal, starting at approximately 39.257979°N, 121.543696°W, ending at 39.208235°N, 121.447974°W, and located approximately five miles northeast of the City of Marysville. The Project location is amongst farmland, primarily planted as rice and managed wetlands.

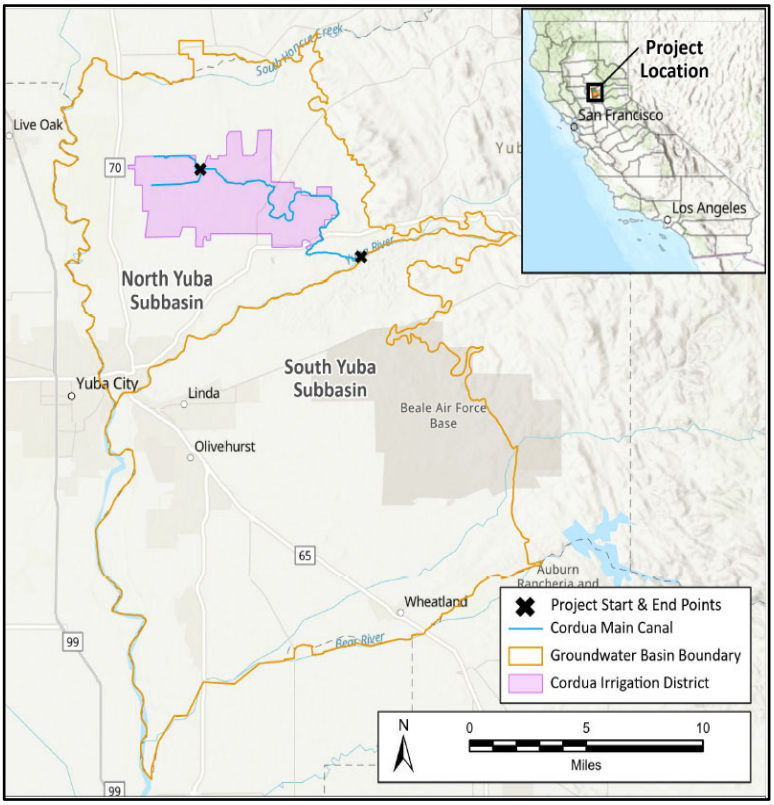

Figure 1. Project Location

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.

- *This description should provide detailed information about the project including materials and equipment and the work to be conducted to complete the project. Address any aspects of the project that reviewers may need additional information to understand.*

Background Information: Cordua was formed in the late 1890s to divert water from the Yuba River to deliver to nearby landowners and became a public agency formally established in 1919 under the Wright Act. Cordua currently provides irrigation water service to approximately 11,500 acres, primarily planted in rice and managed wetlands. The North Yuba Subbasin is categorized by DWR as a medium-priority subbasin and, therefore, is subject to compliance with the Sustainable Groundwater Management Act (SGMA).Cordua is a Groundwater Sustainability Agency (GSA) for its service area and has been implementing the Sustainable Groundwater Management Act (SGMA) in coordination with Yuba Water Agency, which is a GSA covering the entirety of the North Yuba and South Yuba Subbasins (both Cordua and Yuba Water Agency formed their respective GSAs prior to the passage of California Senate Bill 13, and thus are allowed to have overlapping GSA boundaries). The City of Marysville is also a GSA for its portion

of the North Yuba Subbasin. The three GSAs prepared and adopted the Yuba Subbasins GSP, which covers both the North and South Yuba Subbasins. Collectively and in accordance with SGMA, the GSAs aim to reach and maintain groundwater sustainability within 20 years of the adoption of the Yuba Subbasins GSP. The Sustainability Goal for the Yuba Subbasins, as described in the Yuba Subbasins GSP, is *to maintain a locally managed, economically viable, sustainable groundwater resource for existing and future beneficial use in Yuba County by continuing existing management to maintain operation within the sustainable yield or by modification of existing management to address unforeseen future conditions.*

Water Rights & Source of Water Supply: The water supply source for Cordua is the Yuba River, for which Cordua possesses pre- and post-1914 water rights. Cordua currently operates under a supply agreement with Yuba Water Agency whereby water rights are exchanged for stored reservoir water with monthly diversion limitations and ample supplies. Cordua is also a recent signatory to the Lower Yuba River Accord, a landmark agreement between Yuba Water Agency, local water districts (member units), and multiple state and federal agencies that governs Yuba River flows, diversions, and hydroelectric power generation to achieve multiple water management benefits. Cordua's Yuba River diversion point is a shared facility with Hallwood Irrigation District and includes a modern fish screen that is jointly operated. Downstream of these facilities, the canal splits into two separate canals for Cordua and Hallwood Irrigation District. Cordua also has a wheeling agreement with Ramirez Water District (Ramirez WD), located north of Cordua, which has a Yuba Water Agency supply agreement as well, but no direct river diversion point or water rights. Irrigation water from the Cordua Main Canal supplies farms within these three Agency's service areas, with excess tailwater returning to the Yuba and/or Feather River via natural streams such as Jack Slough and Simmerly Slough (see **Figure 2**).

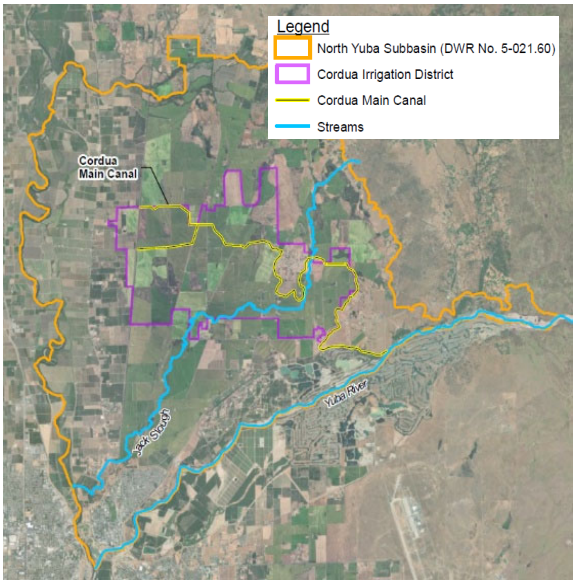

Figure 2. Water Sources for Project

Project Details: The Project entails replacing/retrofitting flow control structures at 12 locations/sites along the Cordua Main Canal (see **Figure 3**). The planned infrastructure upgrades vary by location and include the installation of Rotork Actuators at one location, the installation of between two (2) and four (4) FlumeGate® flow control gates/flow measurement devices at each of the other 11 locations, and the installation of associated SiteConnect Live software, a cloud-based SCADA system allowing for real-time data readings and remote operation of the flow control gates at all 12 sites. The planned upgrades include the following activities at each site (subject to site-specific design finalization): destruction of existing concrete flow control structure, minor excavation prior to setting forms for concrete, pouring of new concrete structure (sill and sidewalls), installation of new flow control gate equipment, backfill/grading around the new concrete structure, and installation of SiteConnect Live telemetry system (a pole-mounted box with solar, battery, and electronics).

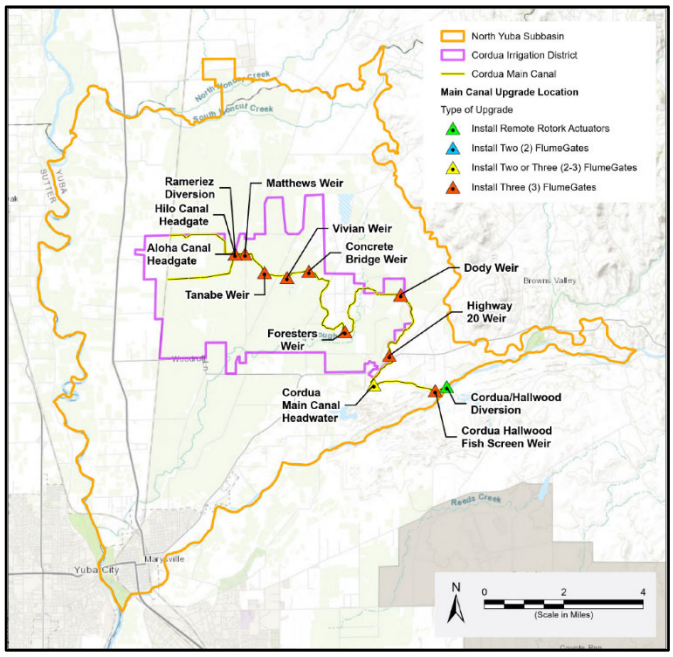

Figure 3. Project Sites

Cordua has closely collaborated with an established flow control and metering equipment provider (Rubicon) and performed site visits (see **Figure 4**) to develop infrastructure upgrade plans for each site. The proposed site infrastructure upgrades are summarized below:

- Cordua/Hallwood Diversion from Yuba River Site – Automate with solar-powered Rotork actuators and gearboxes.
- Cordua/Hallwood Fish Screen Weir Site – Rebuild structure with four center piers, including three Rubicon Flumegates and one manual drainage gate, and install SiteConnect Live (Rubicon's cloud-based SCADA system).
- Cordua Diversion Point Site (shown as Cordua Main Canal Headwater in Figure 3) – Rebuild structure, including installation of 2-3 FlumeGates and install SiteConnect Live.
- Highway 20 Weir Site – Install 3 FlumeGates and install SiteConnect Live.
- Dody Weir Site – Install 3 FlumeGates and install SiteConnect Live.
- Foresters Weir Site – Install 3 FlumeGates and install SiteConnect Live.
- Concrete Bridge Weir Site – Install 3 FlumeGates and install SiteConnect Live.
- Vivian Weir Site – Install 3 FlumeGates and install SiteConnect Live.
- Tanabe Weir Site – Install 3 FlumeGates and install SiteConnect Live.
- Matthews Weir Site – Install 3 FlumeGates and install SiteConnect Live.

- Ramirez Diversion/Aloha Canal Headgate Site – Install 2 FlumeGates and install SiteConnect Live.
- Ramirez Diversion/Hilo Canal Headgate Site – Install 3 FlumeGates and install SiteConnect Live.

Dody Weir

Figure 4. Site Visit Pictures (example from one of the 12 sites)

FlumeGates are a combination of automated overshot control gates and flow measurement devices that mount within the structure. Each FlumeGate comes equipped with a control pedestal, which includes a standard processor and keypad for automation, a solar panel power system, and a 16-foot mast for mounting a communication antenna. SiteConnect Live is a cloud-based SCADA system that gives users full remote control of their sites. Data is transmitted through AT&T's cellular network to both send commands to the sites as well as gather all data, including flows, levels, and alarms. All data at each site can be viewed on the site's historian or downloaded for storage and reporting purposes.

The Project will include five main Tasks as described below.

- *Task 1 Project Management & Grant Administration:* Perform administrative responsibilities associated with the Project including but not limited to schedule management, budget tracking and management, coordinating with relevant agencies regarding Project execution, and managing consultants/contractors. Administer and track any contracts with consultants or other agencies and retain consultants (as needed) to implement the Project. Task 1 will also include required grant administration activities including but not limited to executing the grant agreement and any amendments thereto, administering grant funds, preparing invoices and appropriate backup documentation, and any other grant-required items.
- *Task 2 Finalize Site Approaches:* Task 2 includes engineering design work to finalize the design for each site, order equipment, and execute construction contracts as necessary.

Cordua will work with the appropriate consultants/contractors to finalize the site plan for each Site and order the associated equipment.

- *Task 3 Environmental/Permitting:* Task 3 includes conducting environmental and cultural resources review and compliance and obtaining any necessary permits, as determined by the design engineer. Cordua will work with the appropriate consultants/contractors to prepare any necessary environmental documentation (e.g., California Environmental Quality Act [CEQA] documentation) and prepare applications for and obtain required permit(s) to construct.
- *Task 4 Site Construction:* Once all necessary environmental documentation is submitted, all required permit(s) are acquired, and all equipment is procured and delivered, the hired contractor will install the equipment upgrades at each Site following the final Site Plans developed in Task 2.
- *Task 5 SiteConnect Live System Monitoring:* Once the Site upgrades and construction are completed and the SiteConnect Live (SCADA system) is active at all sites, Cordua will work with the contractor to set up Cordua's site historian to ensure that the data being collected meets all of Cordua's reporting requirements and needs.

Project Goals: The two main goals of the Project are (1) to improve the efficient use of Yuba River surface water supplies in the area of benefit in the North Yuba Subbasin, and (2) to improve the quality (accuracy) and quantity (frequency) of flow rate data at the individual flow control sites along the Cordua Main Canal to allow more precise and accurate control of flows in and diversions from the Cordua Main Canal irrigation system. The objectives that will be targeted to achieve the above goals include the design/permitting and construction of infrastructure upgrades to key flow control points along the Cordua Main Canal irrigation system. The needs addressed by the Project are (1) a need for improved flow rate information at points along the Cordua Main Canal irrigation system to allow for better matching of diversion rates from the Yuba River with demands at irrigation turnouts and diversion ditches within Cordua, and (2) a need to utilize remote operation technology to more efficiently manage diversions (as opposed to the current practice of manual gate operation by Cordua personnel, a practice which is susceptible to interruption due to accident, illness, or other loss of manpower, and which requires personnel to drive to each gate location, thereby contributing undesirable tailpipe emissions to the region). The upgraded infrastructure resulting from the Project will provide real-time data to Cordua's water managers, which will allow for more accurate and precise water diversions and use, resulting in water savings and improved efficiency. The improved operations allowed for by the Project will also benefit worker productivity and safety and reduce greenhouse gas emissions through reduced vehicular travel.

Evaluation Criteria

Evaluation Criterion A—Quantifiable Water Savings (25 Points)

*Up to **25 points** may be awarded for this criterion. This criterion prioritizes projects that will conserve water and improve water use efficiency, supporting the goals of E.O. 14008. Points will be allocated based on the quantifiable water savings expected as a result of the project. Points will be allocated to give greater consideration to projects that are expected to result in more significant water savings.*

1) ***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.* Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.

Water supply savings estimates have been determined through the use of historical water delivery data and the expected amount of savings due to the installation of upgraded equipment. Delivery data were compiled and analyzed to determine the approximate total of water flows through the Cordua Main Canal over the past 7 years. The average flow during 2016-2023 is approximately 50,096 AFY. A conservative estimate of operational efficiency improvement per manufacturer experience is 10%. As discussed in Rubicon's "Optimal Efficiency in Gravity Water Distribution Systems" publication, recent examples of modernized surface water conveyance networks, including similar upgrades as those proposed in the Project, are improving the efficiency of the conveyance and distribution networks from 65% to 85%. Rubicon's previous projects have proven successful in improving water conservation by upwards of 20%, but herein, a conservative estimate of efficiency improvement of 10% is used to allow for variation that may occur along the Project canal. Applying the conservative 10% efficiency improvement estimate to the average flow over the past seven years (50,096 AFY), the Project is estimated to result in approximately **5,010 AFY** of water savings for Cordua as a direct result of the Project.

Estimated water savings from the Project: **5,010 AFY**

2) ***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)?*

Current losses include spillage along the canal system and percolation to groundwater in the unlined portions of the canals. All spills go into an inter-connected drain system, which feeds back into Jack Slough and/or Simmerly Slough, which joins at the end of the system and discharges back to the Feather River just north of the confluence of the Yuba River and Feather River. Some losses percolate in the groundwater during transit through the unlined canals and natural streams/sloughs.

- *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?*

As described above, current losses are discharged into the Feather River and are used by downstream users.

- *Are there any 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.

3) ***Describe the support/documentation of estimated water savings.*** *Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.*

Note: Projects that do not provide sufficient supporting detail/calculations may not receive credit under this section. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal. The use of visual observations alone to calculate water savings, without additional documentation/data, are not sufficient to receive credit under this section. Further, the water savings must be the result of reducing or eliminating a current, ongoing loss, not the result of an expected future loss.

Cordua has closely collaborated with an established flow control and metering equipment provider (Rubicon) to develop the approach for this project to design the individual site upgrades for the best efficiency improvements. The water savings percentage estimates used to calculate the expected benefits are based on over a decade of experience in similar Rubicon projects in the USA and Australia. As discussed in Rubicon's "Optimal Efficiency in Gravity Water Distribution Systems" publication, one of many Rubicon publications on this topic, recent examples of modernized surface water conveyance networks, including similar upgrades as those proposed in the Project, demonstrate improving the efficiency of the conveyance and distribution networks from 65% to 85%. Rubicon's previous projects have proven successful in improving water conservation by upwards of 20%, but herein, a conservative estimate of efficiency improvement of 10% is used to allow for variation that may occur along the Project canal.

Please address the following questions according to the type of infrastructure improvement you are proposing for funding.

(1) ***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 municipal metering projects should address:*

a. *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

As described earlier, the annual water savings estimates are calculated as 10% of the average total water flows through the Cordua Main Canal during the 2016-2023 period. Water flows are measured daily and were provided by Cordua. The annual water savings estimate of 10% was based on the outcomes of Rubicon's previous projects that used the same type of equipment upgrades.

b. *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 have not been and cannot be determined or quantified precisely due to a lack of available flow measurement infrastructure to quantify spillage directly attributed to Cordua. Spillage from Cordua, Hallwood, and Ramirez all go into the same inter-connected drain network, making it difficult to estimate Cordua's share of the water within the drain network. Based on case studies from other Rubicon projects, 10% is the lowest baseline of water savings attributed to reduced spills from Rubicon canal instrumentation and automation technology, meaning at least an estimated 5,010 AFY are currently being lost to spills.

c. *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?*

No existing devices currently measure flows at the proposed sites. Flow estimates are based on visual inspections of water passing through each gate.

d. *Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.*

Rubicon 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. Rubicon gates can be utilized to monitor and meter the flow of water with an accuracy of +/- 2.5%.

e. *Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?*

Yes, an automated canal system will allow for more efficient irrigation. Farm deliveries based on schedules can often result in over-delivery of water, while the proposed infrastructure to be

installed under the Project will allow for more "on-demand" deliveries, thereby reducing over-deliveries.

f. *How will actual water savings be verified upon completion of the project?*

Monthly total water usage after the completion of the Project will be compared to the total water usage prior to implementation of the Project to ensure water-saving benefits are occurring.

Evaluation Criterion B—Renewable Energy (20 Points)

*Up to **20 points** may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency and reduced greenhouse gas emissions.*

*For projects that include constructing or installing renewable energy components, please respond to Subcriterion B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery. If the project does not implement a renewable energy project but will increase energy efficiency, please respond to **Subcriterion B.2. Increasing Energy Efficiency in Water Management.** If the project has separate components that will result in both implementing a renewable energy project and increasing energy efficiency, an applicant may respond to both.*

Note: An applicant may receive points under both Subcriterion B.1 and B.2 if the project consists of an energy efficiency component separate from the renewable energy component of the project. However, an applicant may receive no more than 20 points total under both Subcriterion B.1 and B.2.

Subcriterion B.2—Increasing Energy Efficiency in Water Management

*Up to **6 points** may be awarded for projects that address energy demands and reduce greenhouse gas emissions by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversions.*

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.

The Project's quantifiable energy savings are a result of reduced vehicle travel between gates. The energy savings as a result of the Project is estimated at **18,538 kilowatt-hours per year (kWh/year)** (see calculation below).

- *How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*

The Project will help combat impacts of climate change by allowing Cordua to reduce greenhouse gas emissions associated with current operations that involve vehicular travel to each gate to manually control flows. The emissions reduction as a result of the Project is estimated to be **4.9 metric tons per year** of carbon dioxide-equivalent emissions (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?*

In the rare event that surface water supplies to Cordua are limited, for example, due to extended drought conditions, irrigation water supply for local agriculture is supplemented by groundwater pumped from privately owned wells; this is known as "deficit pumping." The private well pumps are electric and range in size/capacity from 500 to 2,600 gallons per minute (gpm). The North Yuba Subbasin experiences a demand for and pumping of groundwater by others, including domestic wells, the public water system serving customers in the City of Marysville, other small water systems, and growers in areas outside of the Yuba Water Agency member units' service areas (Cordua, Hallwood, Ramirez, and Browns Valley Irrigation District [BVID]), such as in Reclamation District 10.

The Project will allow for more efficient use by Cordua, Hallwood, and Ramirez of the available surface water supplies, which will save water, reduce the need for groundwater pumping to supplement surface water and the associated energy use, and therefore improve the resiliency of Cordua's, Hallwood's, and Ramirez's water supply portfolios. Such water savings and resiliency will allow for continued avoidance of "deficit pumping" by these agencies under most conditions. The water saved is then available for use in other locations or at other times, and to the extent that the water saved meets/offsets a water demand that would otherwise be met by groundwater pumping, the Project improves groundwater conditions by reducing pumping demand.

- *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.*

Energy savings are based on a reduction in vehicular mile traveled. Additional energy savings would occur due to reduced groundwater pumping due to increased surface water supply efficiency.

- *Does the calculation include any energy required to treat the water, if applicable?*

No, the energy savings do not relate to energy for water treatment; the water is used for irrigation purposes and is untreated.

- *Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.*

Compared to the current method of flow control operations, where Cordua personnel must drive a vehicle around the service area to each site and manually adjust flow rates, the remote flow control method enabled by the Project reduces the need for vehicular travel to conduct manual site visits by Cordua personnel. It is conservatively estimated that a cumulative 10,000 miles per year are driven by District staff to manually set gate heights and perform other routine tasks (based on assumptions of 5 miles driven per site per visit, 12 sites, and 180 visits to each site per year [daily visits during six-month irrigation season]). Canal gate automation is expected to reduce the distance driven by 75%, resulting in an annual reduction in distance driven per year of 7,500 miles. Using an estimated average mileage of 15 miles per gallon (mpg) and adding a 10% stop-and-go condition, the resulting savings in fuel are calculated as 7,500 miles / 15 mpg = 500 x 1.10 = 550 gallons/year. Using the U.S EPA's Greenhouse Gas Equivalences Calculator[1], an estimated **4.9 metric tons per year of reduced carbon dioxide-equivalent emissions** will result from the Project. The EPA additionally specifies a value of 33.705 kWh per gallon of gasoline equivalent[2], resulting in a savings of **18,538 kWh/year** as a result of reduced vehicle miles driven.

- *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 Project include solar panels at each site that will power the gates and associated flow control (SCADA) system, allowing the gates to automatically be controlled from a central location rather than manually controlled, without the need for a connection to the electrical grid.

[1] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results
[2] https://www3.epa.gov/otaq/gvg/learn-more-technology.htm

Evaluation Criterion C—Other Project Benefits (15 points)

*Up to **15 points** may be awarded under this criterion. This criterion prioritizes projects that address a specific water and/or energy concern(s), including enhancing drought resilience and sustainability, addressing the current and future impacts of climate change, and providing ecological benefits.*

***Resilience and Sustainability Benefits.** Will the project address a specific water and/or energy sustainability concern? Please address the following:*

- *Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:*
  - *Describe recent, existing, or potential drought or water scarcity conditions in the project area.*

Yuba County, where the Project is located, has been faced with significant drought impacts. As shown in **Figure 5,** according to the U.S. Drought Monitor[3], the frequency and severity of drought conditions have increased over time, with exceptional drought periods from 2014 to 2016 and more recently in 2021. These drought conditions put Cordua's, its customers', and nearby water users' water supply reliability at risk.

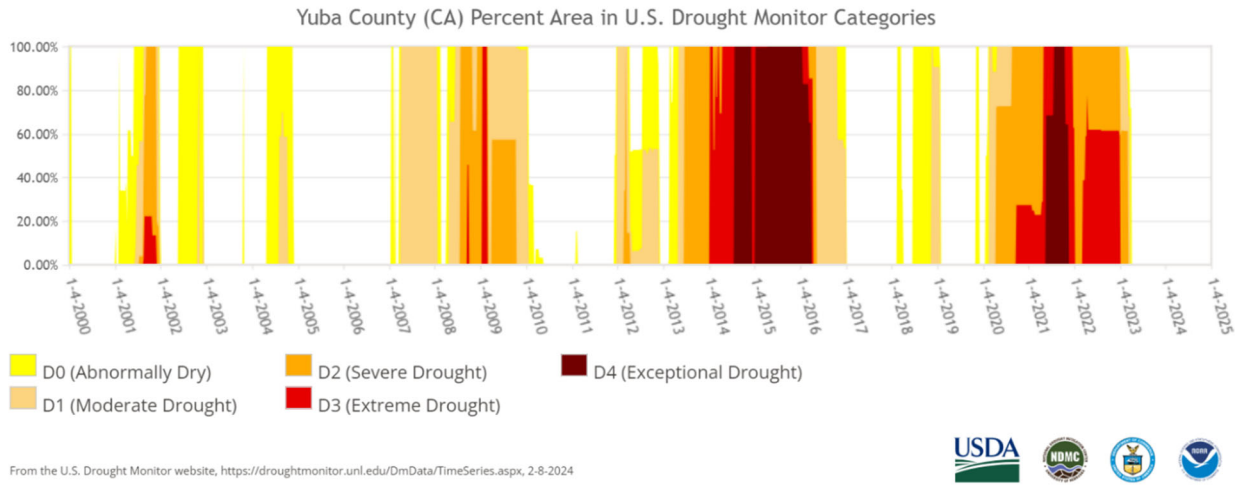

Figure 5. Percent Area Experiencing Drought in Yuba, County, 2000 to 2023

Although Cordua and Hallwood Irrigation District have historically met their landowners' irrigation demands with Yuba River surface water and do not rely on "deficit pumping", the North Yuba Subbasin does experience demand for and pumping of groundwater outside of the Project area. As stated in the Yuba Subbasins GSP, "In wet years [in the North Yuba Subbasin], precipitation meets some of the water demand and provides more recharge from precipitation

[3] https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx

and streamflow. Conversely, in dry years, more groundwater is pumped to meet the water demand that is not met by surface water or precipitation and recharge from precipitation and streamflow is reduced... Groundwater is still used in the [North Yuba] Subbasin despite the abundant surface water supplies as surface water supplies are not available for all parts of the subbasin or at all times. The North Yuba Subbasin has a reliable source of surface water supply that is supplemented by groundwater in dry years to meet the water demand and to serve areas without access to surface water supplies."

- *Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?*

According to the Yuba Subbasins GSP, the North Yuba and South Yuba Subbasins experienced drought conditions during California's historic drought of 2012-2015. These drought conditions primarily affected surface water supply availability in the South Yuba Subbasin, though increased groundwater pumping also resulted in the North Yuba Subbasin from these consecutive dry year conditions. As seen in **Figure 5,** over the past five years the project area has experienced, abnormally dry conditions, Moderate Drought conditions, Severe Drought conditions and Exceptional Drought conditions.

- *Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).*

The Project location has been significantly impacted by climate change, as described above, and there are projections of increased severity and duration of future droughts. The census tract that the Project is in has a Federal Emergency Management Agency (FEMA) Drought National Risk Index Rating[4] of "Very High" compared to the rest of the United States (**Figure 6**). The Project

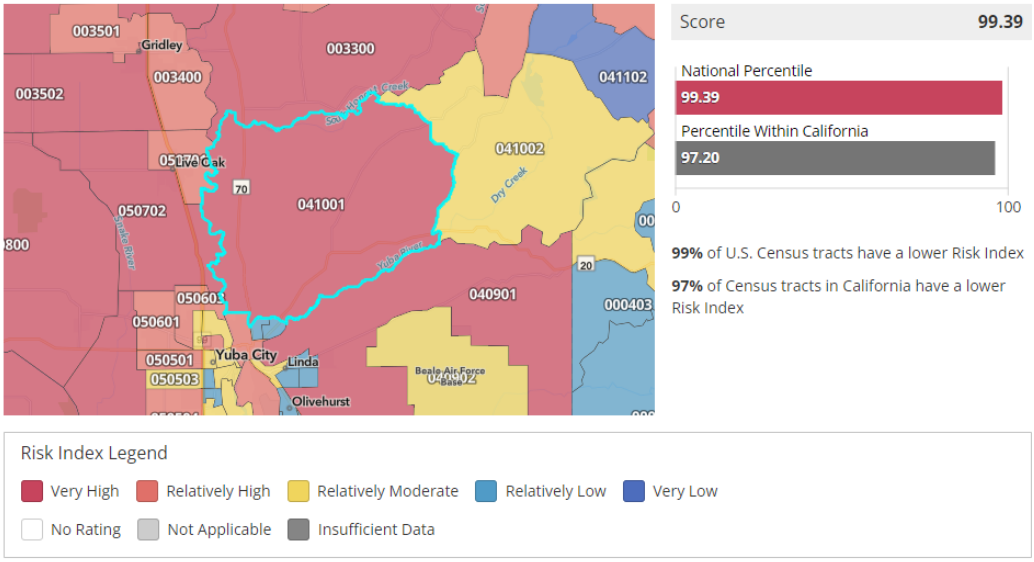

Figure 6. Risk Index of the Project Area

[4] https://hazards.fema.gov/nri/report/viewer?dataLOD=Census%20tracts&dataIDs=T06115041001

location has a National Risk Index score of 99.39, meaning 99% of U.S. Census tracts have a lower Risk Index, and falls within the 97.20 percentile within California, indicating that 97% of Census tracts in California have a lower Risk Index.

The Project location also has and a "Relatively High" Drought Expected Annual Loss with a score of 99.5, representing the expected agricultural loss each year due to droughts compared to the rest of the United States (**Figure 7**). The Project location has a National Expected Annual Loss score of 99.5, meaning over 99% of U.S. Census tracts have a lower Expected Annual Loss, and falls within the 97.9 percentile within California, indicating that 98% of Census tracts in California have a lower Expected Annual Loss.

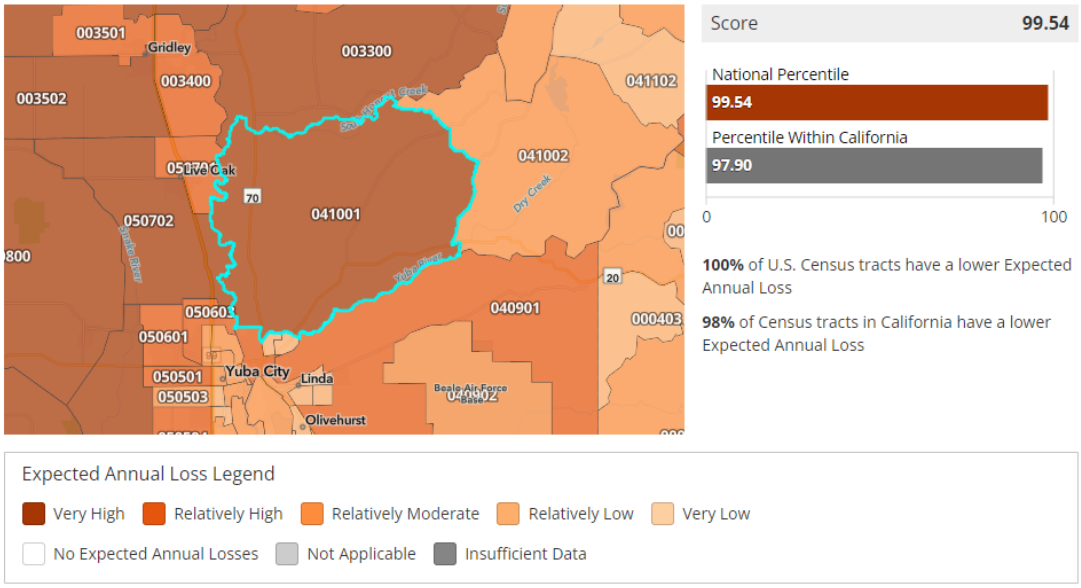

Figure 7. Expected Annual Loss of the Project Area

Furthermore, based on the Climate Mapping for Resilience and Adaptation's Climate Projections[5] the Project area is expected to have an increasing number of days per year with no precipitation (~263 to 269 days; **Figure 8**) and an increasing number of days per year with temperatures over 100 degrees (~30 to 70 days; **Figure 9**).

[5] https://livingatlas.arcgis.com/assessment-tool/explore/details

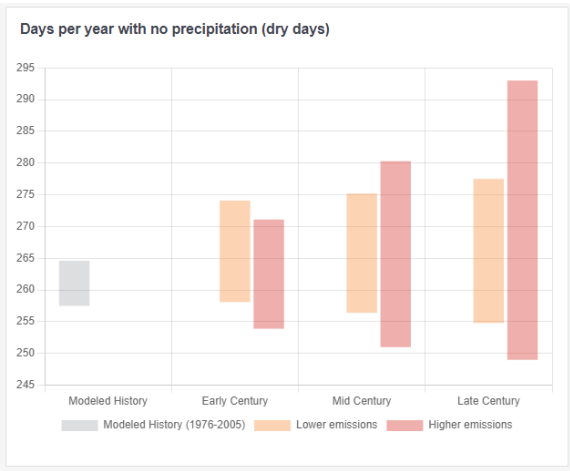

Figure 8. Projected Dry Days

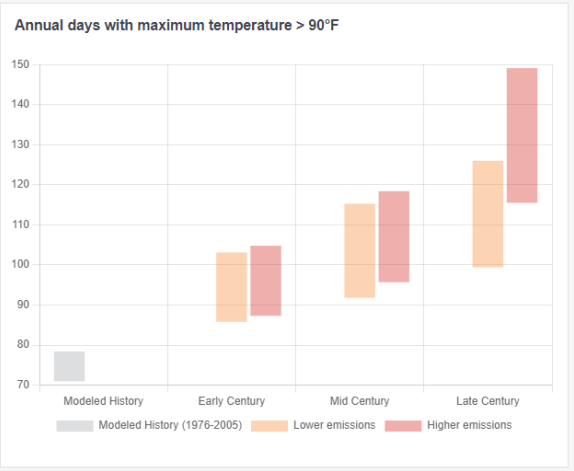

Figure 9. Projected High Temperature Days

- *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.*

Under current operations methods, Cordua personnel rely on fossil fuels every day to travel from point A to point B throughout the service area to collect flow measurements at each site and to manually open gates to deliver water to customers.

- *Please describe how the project will directly address the concern(s) stated above.*

The Project includes water metering and flow control infrastructure improvements that will provide efficiency and water conservation savings benefits to the service area of the three water purveyors that draw water from the Cordua Main Canal (Cordua, Hallwood Irrigation Company, and Ramirez Water District). These equipment upgrades will enable “smarter” operation of the flow control structures by providing more accurate and timely information on flow rates and allowing remote operation, which will increase Cordua’s overall water use efficiency by allowing more precise water application and less waste. By increasing the efficiency of surface water use, the Project maximizes the beneficial use of finite available surface water supplies by providing in-lieu recharge benefits and decreased demand on the groundwater basin. These benefits directly address the concerns described above.

Furthermore, improved groundwater level conditions are expected and are summarized below. The improved groundwater level conditions can be quantified by assuming that the 5,010 AFY in water supply savings for Cordua translates to improved conditions across the entire approximately 11,500-acre Cordua service area. This amounts to, on average, 0.43 AFY per acre of improved conditions for Cordua, and with an average storage coefficient of 0.0685 (Yuba Subbasin GSP, Section 2.2.1.9.2), this translates into a benefit of 6.3 feet per year (ft/yr) of improved groundwater level conditions for Cordua relative to conditions without the Project.

- *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?

The Project will directly result in more efficient management of the water supply. The addition of automated gates allows for more efficient management of water throughout the system, and therefore will allow Cordua to divert/pump less water into its system in general, leaving more water in its original condition in the Yuba River riparian system, rather than taking excess water into the Cordua system and returning potentially altered water back to the riparian system downstream. As described previously, the Project addresses the following needs: (1) a need for improved flow rate information at points along the Cordua Main Canal to allow for better matching of diversion rates from the Yuba River with demands at irrigation turnouts and diversion ditches within Cordua, and (2) a need to utilize remote operation technology to more efficiently manage diversions (as opposed to the current practice of manual gate operation personnel, a practice which is susceptible to interruption due to accident, illness, or other loss of manpower and requires the personnel to drive to each gate location, thereby contributing undesirable tailpipe emissions to the region). These needs will be addressed by the planned construction of new flow control systems at the 12 sites along the Cordua Main Canal irrigation system, each of which will have remote monitoring and control capability. This new infrastructure will provide real-time data to Cordua's water management personnel which will allow for more accurate and precise water diversions and use, resulting in water savings and improved efficiency.

- *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 conservation as a result of the Project will manifest as reduced diversions from the Yuba River. This un-diverted water will remain in the river, increasing in-stream flows to the benefit of downstream users and aquatic species. Since there are water rights within the Project area that are supplemental to Cordua Main Canal rights, there will be reduced groundwater pumping because of the increased water delivery when full allotments are not available.

  - *Indicate the quantity of conserved water that will be used for the intended purpose(s).*

The estimated quantity of water that will be conserved is based on reduced losses and will vary annually depending upon total water allotments flowing through the system. A conservative estimate of the amount of water to be saved is **5,010 AFY**.

  - *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

As stated above, the conserved water will remain in the Yuba River and be available for downstream uses and will also support aquatic species habitat. It is expected that water that has already been diverted to the canal and is subsequently conserved as a result of the Project upgrades will be either retained within the canal system or percolated into the subsurface as canal seepage/recharge.

- *Will the project assist States and water users in complying with interstate compacts?*

No, not applicable to this Project.

- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

As described earlier, the Project will not only benefit Cordua's customers but also the nearby water users, specifically groundwater users. The Project is located within the North Yuba Subbasin, which is categorized as a medium priority subbasin and, therefore, is subject to the Sustainable Groundwater Management Act. According to the *Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan Water Year 2022 Annual Report*, during Water Year 2022 (WY 2022), groundwater levels continued to decrease throughout the Yuba Subbasins due to continued dry conditions throughout the Sacramento Valley and groundwater substitution transfer pumping and based on estimates using the Yuba Groundwater Model (YGM) during WY 2022 the North Yuba Subbasin saw a decrease of groundwater storage of approximately 7,000 AF. By increasing the efficiency of surface water use, the Project maximizes the beneficial use of finite available surface water supplies by providing in-lieu recharge benefits and decreased demand on the groundwater basin. Therefore, the Project will help the multiple GSAs in the Subbasin achieve the Yuba Subbasin GSP Sustainability Goal and help prevent water-related crises and conflicts within the Subbasin.

Ecological Benefits. *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that that result in ecological benefits, through this section and other sections above, consistent with the SECURE Water Act.*

Please provide information regarding how the project will provide ecosystem benefits, including:

- *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).

Cordua's water service jurisdictional area encompasses approximately 11,500 acres which includes farmland planted as rice, and managed wetlands (**Figure 10**). California has lost about 95% of its historical wetlands and remaining wetlands are considered threatened.[6] Climate change poses a significant threat, as most of the remaining wetlands are dependent on artificial water delivery systems or high groundwater levels and are impacted by changing climatic conditions. According to the International Panel on Climate Change (IPCC) wetland ecosystems are among the most vulnerable on Earth to climate change. Wetlands support lush aquatic vegetation, provide habitat for hundreds of species of fish and wildlife and provide protection from predators. California's wetlands provide stopover, wintering, and breeding habitat for a vast number of waterfowl and other migratory birds. California rice fields provide habitat and nourishment for approximately seven million ducks and geese migrating along the Pacific Flyway and hundreds of thousands of shorebirds that nest in the fields year-round. According to the California Rice Commission[7], recent studies have shown that California rice fields currently provide more than half of the nutritional requirements of wintering waterfowl in the Sacramento Valley.

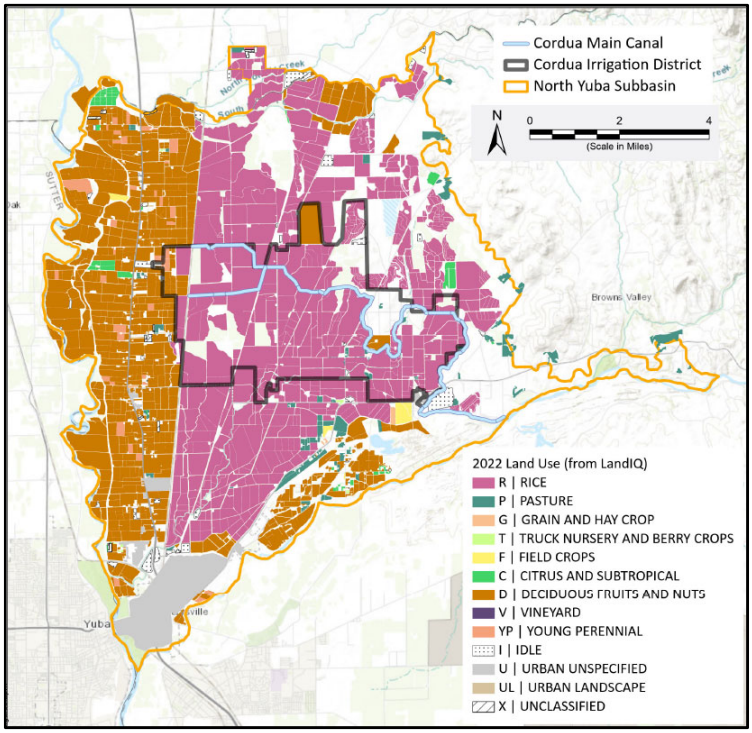

Figure 10. 2022 Land Use in the North Yuba Subbasin

With a diminishing number of wetlands, farmland planted as rice can provide vital environmental benefits and, in conjunction with the remaining managed wetlands, provide food and other habitat requirements for nearly 230 wildlife species. According to the California Rice Commission[8], together, rice fields and managed wetland habitats can provide the following benefits: internationally-recognized habitat for shorebirds, millions of waterfowl and hundreds of thousands of other waterbirds and wetland-dependent species; habitat for more than a dozen raptor species, including owls, hawks and Bald Eagles, 15 types of reptiles, including threatened Giant Garter Snakes; and nearly all of the food for millions of migrating ducks and geese in the

[6] https://mywaterquality.ca.gov/eco_health/wetlands/
[7] https://calrice.org/wildlife/
[8] https://calrice.org/wp-content/uploads/2017/03/Environmental_1sheet_v14_FINAL.pdf

Sacramento Valley during the winter season. Therefore, it is crucial that Cordua is able to continue to provide water to support these habitats, and with the increased overall water use efficiency that will result from the Project, Cordua's water supply reliability will increase, and these crucial habitats can continue to be maintained.

- *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, recreational benefits, etc.).*

Yes, the Project will improve Cordua's ability to control flow through the canal, resulting in water being held for longer durations of time. Through the implementation of automation, water usage will not only be able to be quantified and spills reduced, but the level of water will be maintained to a higher degree to ensure efficient deliveries to agricultural customers.

- *Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?*

Cordua primarily provides water to rice farmers and entities that manage wetlands. As described above, both rice fields and wetlands provide critical habitats to hundreds of species and millions of migrating waterfowl. The improved water efficiency that will result from the Project will help ensure the water users have sufficient water to maintain the critical habitat, which will reduce the likelihood of species listing.

- *Please describe any other ecosystem benefits as a direct result of the project.*

Direct ecosystem benefits from the Project are described above.

***Climate Change**: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.*

- *Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?*

By increasing the efficiency of surface water use, the Project maximizes the beneficial use of finite available surface water supplies by providing in-lieu recharge benefits and decreased demand on the groundwater basin. Improved groundwater conditions will be critical during dry years when surface water supplies are less readily available. This increased water supply reliability will help increase Cordua's resiliency to climate change effects, especially during dry years and extended periods of drought.

- *Does the project seek to improve ecological resiliency to climate change?*

As described above, Cordua provides water to customers that maintain critical habitats for a wide variety of species. The Project will increase the efficiency and sustainability of the delivery of

water to Cordua's customers by minimizing spillage through automation. Correctly timed releases aid in application efficiency that increases sustainability and resiliency during times of drought brought on by climate change.

- *Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?*

The Project's reduction in vehicular miles traveled will help to reduce associated emissions and air pollution.

- *Does the proposed project include green or sustainable infrastructure to improve community climate resilience?*

The Project does not include green or sustainable infrastructure, other than the fact that the flow control gates and instrumentation are solar powered.

- *Does the proposed project contribute to climate change resiliency in other ways not described above?*

No, the Project 's contributions to climate change resiliency are described above.

Evaluation Criterion D—Disadvantaged Communities, Insular Areas, and Tribal Benefits (15 points)

*Up to **15 points** may be awarded based on the extent that the project demonstrates support for the Biden-Harris Administration's priorities, including E.O. 14008: Tackling the Climate Crisis at Home and Abroad and the President's memorandum, Tribal Consultation and Strengthening Nation-to-Nation Relationships.*

*Please address only those priorities that are applicable to your project. **It is not necessary to address priorities that are not applicable to your project**.*

Subcriterion D.1. Disadvantaged Communities

E.O. 14008 affirms the advancement of environmental justice for all through the development and funding of programs to invest in disadvantaged communities. This criterion, which is used to identify projects that advance the Justice 40 Initiative, includes all Federally recognized Tribes and Tribal entities, and any disadvantaged communities in insular areas (American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands) identified pursuant to the following criteria.

- *Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), available online at*

> *Explore the map - Climate & Economic Justice Screening Tool (screeningtool.geoplatform.gov/en/#17.59/36.63278/-105.181329) to identify any disadvantaged communities that will benefit from your project. The CEJST developed by the White House Council on Environmental Quality is a geospatial mapping tool that utilizes publicly available, nationally consistent data sets related to climate change, the environment, health, and economic opportunity to identify disadvantaged communities. In addition to identifying specific census tracts that are disadvantaged, the CEJST includes the lands of Federally recognized Tribes as disadvantaged communities. In addition, regardless of whether a Federally recognized Tribe has land, all Federally recognized Tribal entities are considered disadvantaged communities for the purposes of the Justice40 Initiative.*[2]

As described previously, the Project will provide benefits of water savings via greater operations efficiency of the Cordua Main Canal system, the main conveyance system serving not only Cordua but also Hallwood Irrigation Company and Ramirez Water District irrigation systems. Water saved would then be available for later use by these surface water users, reducing demand for local groundwater through continued avoidance of deficit pumping. The reduction in groundwater demand relative to without-project conditions will result in improved groundwater conditions with a direct benefit to the Cordua/Hallwood/Ramirez service areas and an indirect benefit to the remainder of the North Yuba Subbasin, which includes areas designated as Disadvantaged Communities (DACs).

According to the White House Council on Environmental Quality's interactive Climate & Economic Justice Screening Tool (CEJST), the North Yuba Subbasin overlies four census tracts, of which two (06007003300 and 06115040100) are considered disadvantaged communities due to low income in combination with climate change, energy, health, housing, legacy pollution, transportation, and workforce development challenges (**Figure 11**). Within the North Yuba Subbasin, the area of direct benefit is composed of the jurisdictional areas of Cordua Irrigation District, Hallwood Irrigation Company, and Ramirez Water District, which share the water system interconnected with the Cordua Main Canal. The area of direct benefit overlaps the census tracts of 06115041000 and 06007003300, the latter of which is a DAC. The two tracts classified as DACs are both above the 65th percentile of low-income households and are in the 99th percentile of expected economic loss due to increasing agricultural loss rates. These communities are additionally above the 70th percentile of projected flood risk and 90th percentile of projected wildfire risk within the next 30 years. The other two census tracts overlapping the areas of direct and indirect benefit (06115041000 and 06115040200), though not classified as disadvantaged due to higher average household income, are projected to have similar magnitudes of agricultural and environmental risk as the adjacent DACs.

- Tract 06007003300: in area of direct benefit; population = 4,083; disadvantaged due to climate change, energy, and transportation; classified as a DAC per the White House Council on Environmental Quality's Interactive CEJST
- Tract 06115040100: in area of indirect benefit; population = 4,770;

disadvantaged due to climate change, energy, health, and transportation; classified as a DAC per the White House Council on Environmental Quality's interactive CEJST

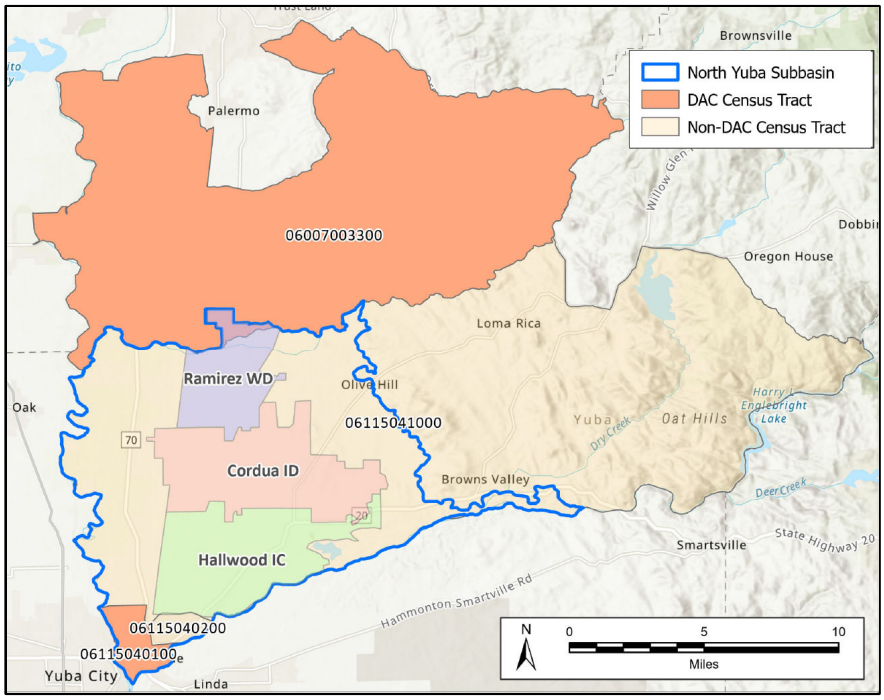

Figure 11. Communities with Direct and Indirect Project Benefit

- *If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?*

The Project will provide direct benefits to the DACs, by improving groundwater conditions in the North Yuba Subbasin from which these communities draw their drinking water supply. As discussed previously, the improved efficiency of surface water use will reduce groundwater demand, leading to higher groundwater levels and greater groundwater storage in the North Yuba Subbasin relative to conditions without the Project. These improved conditions will benefit small water systems that rely on groundwater and private shallow domestic wells by decreasing the chance for well dewatering and decreasing the vertical lift required to pump groundwater. **Figure 12** shows the locations of public water systems and the density of domestic wells in the vicinity of the Project, based on data from the DWR Well Completion Report Map Application, as well as the color-coded combined risk rating by section per the State Water Resources Control Board Combined Risk for Domestic Wells and State Small Water Systems – 2022 Needs Assessment map viewer.

According to the 2022 Drinking Water Needs Assessment dashboard, water system CA5800824 (Country Village Mobile Home Park), located approximately 1 mile west of Cordua (**Figure 12**), is considered at-risk overall due to high-risk scores for water quality, accessibility, and technical, managerial, financial capacity. Additionally, according to Combined Risk for Domestic Wells and State Small Water Systems – 2022 Needs Assessment map viewer, the North Yuba Subbasin contains approximately 317 domestic wells, of which approximately 107 (34%) are determined to be potentially at-risk for water quality issues or water shortage issues. This Project will help to alleviate those risks to small water systems and domestic wells by improving groundwater conditions in the North Yuba Subbasin from which they draw water. This will help ensure that safe water is reliably available to residents.

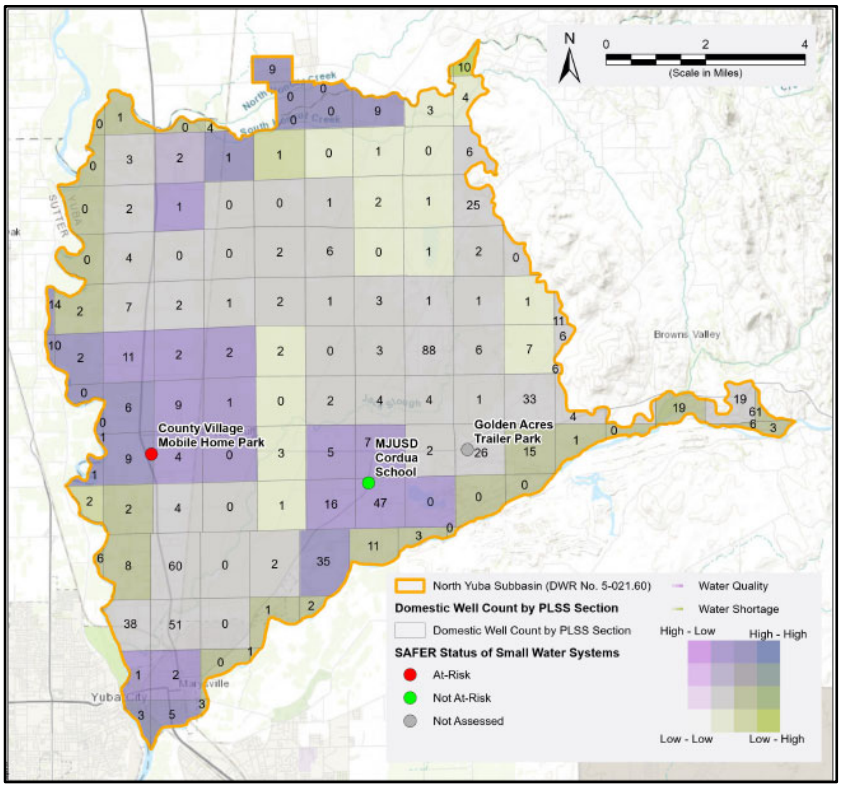

Figure 12. Domestic Well Density, SAFER Status of Small Water Systems, and Combined Risk Score

Subcriterion D.2. Tribal Benefits

The Department 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. 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?*

There are no nearby Indian Tribes or Tribal lands in the vicinity of the Project, and therefore the Project will not directly serve or benefit a Tribe.

- *Does the proposed project support Tribal led conservation and*

restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?

Not applicable.

- *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, increased renewable energy, or economic growth opportunities? Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?*

Not applicable.

Evaluation Criterion E—Complementing On-Farm Irrigation Improvements (8 points)

*Up to **8 points** may be awarded for projects that describe in detail how they will complement on- farm irrigation improvements eligible for NRCS financial or technical assistance.*

Note: Scoring under this criterion is based on an overall assessment of the extent to which the WaterSMART Grant project will complement ongoing or future on-farm improvements. Applicants should describe any proposal made to NRCS, or any plans to seek assistance from NRCS in the future, and how an NRCS-assisted activity would complement the WaterSMART Grant project. Financial assistance through EQIP is the most commonly used program by which NRCS helps producers implement improvements to irrigation systems, but NRCS does have additional technical or financial assistance programs that may be available. Applicants may receive maximum points under this criterion by providing the information described in the bullet points below. Applicants are not required to have assurances of NRCS assistance by the application deadline to be awarded the maximum number of points under this subcriterion. Reclamation may contact applicants during the review process to gather additional information about pending applications for NRCS assistance if necessary.

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.*
  - *Have the farmers requested technical or financial assistance from NRCS for the on- farm efficiency projects, or do they plan to in the future?*
  - *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.

- *Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*

The Natural Resources Conservation Service (NRCS) provides information on funded projects on a county level. Yuba County is largely agricultural, with approximately 90,000 acres of irrigated farmland. Between 2019 and 2023, NRCS funded 155 Environmental Quality Incentives Program (EQIP) projects within Yuba County. The data provided by NRCS included mailing addresses, which don't necessarily match with the funded project address/location; however, as shown in **Figure 13**, at least three projects have been funded within or near Cordua's service area.

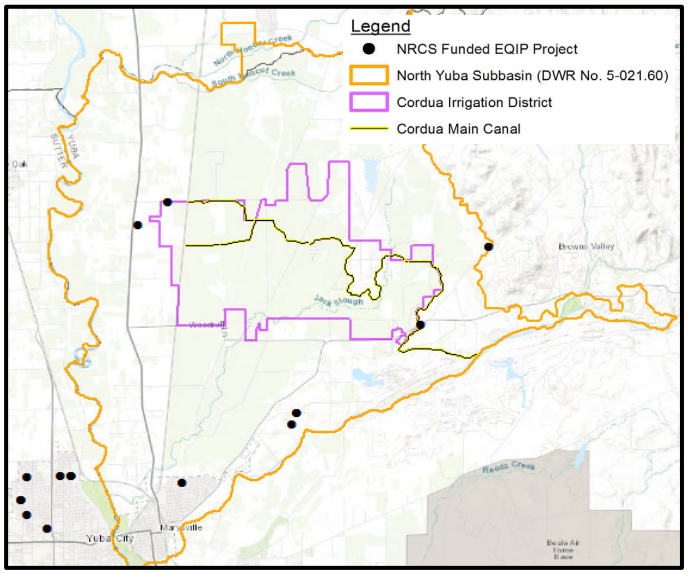

Figure 13. NRCS Funded EQIP Projects

- *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.*

OR

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

Through EQIP, the NRCS provides water users assistance to plan and implement conservation practices. With increased on-farm efficiency as a result of the NRCS-funded EQIP projects and increased efficiency of the Cordua water delivery system as a result of the Project, collectively, the projects maximize the efficiency in the area and increase water supply reliability for all water users.

- *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.

Reduced water demand is expected from the results of any on-farm water conservation work.

- *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.*

Figure 3 shows the Cordua water service area boundaries.

Evaluation Criterion F—Readiness to Proceed (8 points)

*Up to **8 points** may be awarded for this criterion.*

Points may be awarded based upon the extent to which the proposed project is capable of commencing upon entering into a financial assistance agreement. Note: If your project is selected, responses provided in this section will be used to develop the scope of work that will be included in the financial assistance agreement.

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: 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.***

The Project is ready to proceed as soon as funding is available. A detailed Project schedule is provided in a subsequent section of this application. The Project is considered inherently feasible, as it entails construction activities that are well understood and for which many suitable and capable contractors exist. The flow control and metering equipment to be installed under the Project is from an established provider (Rubicon) with experience in similar installations throughout the western United States. There are no significant technical challenges or uncertainties to be overcome to complete the Project successfully. In the preparation of this application, Cordua and Rubicon performed site visits to develop work plans for each of the 12 sites. Once Cordua has entered into a financial assistance agreement, the Project can be kicked off immediately.

The major tasks to be completed upon entering into a financial assistance agreement are as

follows:

- *Task 1 Project Management & Grant Administration:* Perform administrative responsibilities associated with the Project, including but not limited to schedule management, budget tracking and management, coordinating with relevant agencies regarding Project execution, and managing consultants/contractors. Administer and track any contracts with consultants or other agencies and retain consultants (as needed) to implement the Project. Task 1 will also include required grant administration activities, including but not limited to executing the grant agreement and any amendments thereto, administering grant funds, preparing invoices and appropriate backup documentation, and any other grant-required items.
- *Task 2 Finalize Site Approaches:* Cordua will work with the appropriate consultants/contractors to finalize the site plan for each Site and order the associated equipment.
- *Task 3 Environmental/Permitting:* Cordua will work with the appropriate consultants/contractors to prepare any necessary environmental documentation (e.g., CEQA documentation) and prepare applications for and obtain the required permit(s) to construct.
- *Task 4 Site Construction:* Once any necessary environmental documentation is submitted, any required permit(s) are acquired, and all the equipment is procured and delivered, the hired contractor will install the equipment upgrades at each Site following the final Site Plans developed in Task 2.
- *Task 5 SiteConnect Live System Monitoring:* Once the Site upgrades and construction are completed and the SiteConnect Live is active at all sites, Cordua will work with the contractor to set up Cordua's site historian to ensure the data being collected meets all of Cordua's reporting requirements and needs.

    - *Describe any permits that will be required, along with the process for obtaining such permits.*

Permits expected to be required to complete this Project include those related to construction activities. During Task 3, a complete list of permitting requirements will be developed, and all necessary permits will be obtained prior to construction activities.

    - *Identify and describe any engineering or design work performed specifically in support of the proposed project.*

Cordua is replacing or upgrading current gates and support structures. Cordua has a contract with a civil engineering firm that can provide design, engineering, construction support, and surveying

services for the Project. Project materials are ready to be ordered.

- *Describe any new policies or administrative actions required to implement the project.*

No new policies will be required to implement the Project. Administrative actions required include adoption of a resolution by the Cordua Board of Directors to enter into a grant funding agreement with the U.S. Bureau of Reclamation, should the Project be awarded grant funds.

- *Describe the current design status of the project. If additional design work is required prior to construction, describe the planned process and timeline for completing the design work.*

The Project construction scope has been outlined by Cordua staff and Rubicon (the equipment provider) representatives, based on meetings and field inspection visits to each of the 12 sites by Cordua and Rubicon. A detailed quotation for the equipment has been developed by Rubicon, and is included as an attachment to this application. The quotation describes the work to be performed at each site to upgrade and replace the existing flow control structures. Additional engineering design will be conducted by a civil engineer retained by Cordua. The timeline to complete the engineering design work is anticipated to be six to nine months from Project initiation, as shown in the Project schedule below.

- *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?*

Table 1. Preliminary Project Schedule

	2024	2025				2026				2027			
Task	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Task 1: Project Management & Grant Administration	◆												◆
Task 2: Finalize Site Approaches				◆									

	2024	2025				2026				2027			
Task	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Task 3: Environmental/ Permitting				◆									
Task 4: Site Construction					◆			◆				◆	
Task 5: SiteConnect Live System Monitoring													

◆ = *Milestone*

The preliminary Project schedule is shown in **Table 1** above. The Project schedule is anticipated to start in the fourth quarter (Q4; October to December) of 2024 with execution of the grant agreement between Cordua and Reclamation. Below are the major tasks with anticipated milestones.

- Task 1: *Project Management and Grant Administration* includes ongoing Project management actions, including schedule management, budget tracking, coordinating with other agencies, and managing consultants/contractors. The milestone for executing a contract for design engineering services for the Project is anticipated to occur by the end of Q4 of 2024. The milestone of final Project completion will occur by the end of Q4 of 2027.
- Task 2: *Finalize Site Approaches* includes engineering design work to finalize the design for each site, order equipment, and execute construction contracts as necessary. The milestone for finalizing contractor agreements is expected to be by the end of the third quarter (Q3; July to September) of 2025.
- Task 3: *Environmental/Permitting* includes conducting environmental and cultural resources review and compliance and obtaining any necessary permits, as determined by the design engineer. The milestone for completing environmental and permitting requirements is by the end of Q3 of 2025.
- Task 4: *Site Construction* will take place during two winter/spring periods (2025/26 and 2026/27) when the Cordua Main Canal is not in use. The milestone of mobilization for construction will occur in Q4 of 2025. The milestone of 50% completion of construction will occur by the end of the second quarter (Q2; April to June) of 2026 and the milestone of 100% completion of construction will be by the end of Q2 of 2027.
- Task 5: *SiteConnect Live System Monitoring* includes setup, connection, and initialization of the remote system monitoring and control equipment for the flow control gates will be ongoing during construction implementation and for the three quarters following construction completion (i.e., through December 2027) to meet reporting requirements. Flow monitoring at each Site as part of Cordua water management operations will

continue indefinitely beyond 2027.

Evaluation Criterion G—Collaboration (5 points)

*Up to **5 points** may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.*

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?*

Cordua is actively involved in sustainable water management in the Yuba Subbasins in several ways. First, as mentioned earlier, Cordua is a signatory to and active participant in the Lower Yuba River Accord, a comprehensive water management program in the Yuba Subbasins that involves significant collaboration between local, state, and federal agencies to ensure sustainable water supplies and fish populations in the Yuba River. Second, Cordua is a Groundwater Sustainability Agency (GSA) under the Sustainable Groundwater Management Act (SGMA) and has worked and continues to work with the other GSAs within the Yuba Subbasins to achieve and maintain sustainability by preparation, adoption, and implementation of the Yuba Subbasins Groundwater Sustainability Plan (GSP). The GSAs and their associated entities are all working to implement projects that support groundwater supply resilience and conserve water supplies. Lastly, Cordua has been in close communication with Yuba Water Agency and Hallwood Irrigation District throughout the development of the Project, and coordinated with these entities on seeking grant funding under a separate program. Therefore, there is widespread support for the Project.

- *What is the significance of the collaboration/support?*

The widespread support of the local water management entities for the Project will help ensure the Project is implemented without any interruption or delay due to opposition.

- *Will this project increase the possibility/likelihood of future water conservation improvements by other water users?*

Yes, the Project will increase the likelihood of future water conservation improvements by other water users. The other GSAs and their associated entities plan on using the Project as a learning opportunity to see how much water is conserved and how they can implement similar conservation measures (i.e., upgraded flow control structures with remote monitoring and control) to conserve water in their associated areas.

- *Will the project benefit multiple sectors and/or users (e.g., agriculture,*

municipal and industrial, environmental, recreation, or others)?

Yes, as described earlier, the Project will directly benefit multiple sectors and users, including agricultural (rice fields), environmental (managed wetlands), and recreation (waterfowl hunting in managed wetlands), and indirectly benefit groundwater users (private well owners and nearby municipalities).

- *Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).*

Attached are letters of support from Yuba Water Agency, Hallwood Irrigation Company, and Ramirez Water District.

Evaluation Criterion H—Nexus to Reclamation (4 points)

*Up to **4 points** may be awarded if the proposed project is connected to a Reclamation project or Reclamation activity. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.*

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?*

No, Cordua does not have a water service contract with Reclamation.

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

No, Cordua does not receive Reclamation water through a Reclamation contractor or by any other contractual means.

- Will the proposed work benefit a Reclamation project area or activity?

No, the proposed work will not directly benefit a Reclamation project area or activity.

- *Is the applicant a Tribe?*

No.

Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.

*All Water and Energy Efficiency Grants applicants are **required** to propose a "performance measure" (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with Water and Energy Efficiency Grants recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy Efficiency Grants.*

Note: Program funding may be used to install necessary equipment to monitor progress. However, program funding may not be used to measure performance after project construction is complete (these costs are considered normal operation and maintenance costs and are the responsibility of the applicant).

The Project includes installing flow control structures that measure flow rates in real-time. Project performance will be quantified through the collection of flow data post-Project and comparison with pre-Project flow data to ensure Project benefits are being realized. Cordua plans to continue collecting flow data indefinitely and therefore the Project performance will be continuously measured.

---------- End of Technical Proposal (50 page maximum) ----------

Project Budget

Table 1 summarizes the Non-Federal and Federal funding sources and total Project cost. The total Project cost is $6,507,725. The 50% Non-Federal local cost share is anticipated to be fully funded by Cordua.

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

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
Cordua Irrigation District	$3,253,863
Non-Federal Entities Subtotal	$3,253,863
REQUESTED RECLAMATION FUNDING	**$3,253,862**
TOTAL PROJECT COST	**$6,507,725**

Table 2 provides a summary of the total budget, and the following section *Budget Narrative* includes detailed budget descriptions and backup for each budget object category.

Table 2. Budget Summary

Summary			
6. Budget Object Category	**Total Cost**	**Federal Estimated Amount**	**Non-Federal Estimated Amount**
a. Personnel	**$113,668**		
b. Fringe Benefits	**$14,386**		
c. Travel	**$0**		
d. Equipment	**$0**		
e. Supplies	**$0**		
f. Contractual	**$90,000**		
g. Construction	**$6,265,866**		
h. Other Direct Costs	**$11,000**		
i. Total Direct Costs	**$6,494,920**		
j. Indirect Charges	**$12,805**		
Total Costs	**$6,507,725**	**$3,253,862**	**$3,253,863**
Cost Share Percentage		**50%**	**50%**

Budget Narrative

Personnel

Table 3 summarizes the Cordua Personnel budget for the Project. The Personnel category includes time- and rate-based costs for Cordua's Project Manager and Assistant Manager, who will perform construction oversight, as well as a percentage-based cost for Cordua management and administration. The labor rates are the actual labor rates of the identified personnel/positions and are consistently applied to Federal and Non-Federal activities. The time- and rate-based costs are based on the labor rates ($ per hour) and estimated effort, in hours. It is estimated that each of the two Cordua Personnel will contribute 40 hours of work toward each of the 12 Project sites. The Project Manager for Cordua will devote 480 hours overseeing construction of the Project, at a rate of $34.62 per hour. The Assistant Manager for Cordua will also contribute approximately 480 hours to the Project, at a rate of $25.00 per hour. The Cordua management and administration cost is based on 2 percent of the total construction costs.

Table 3. Personnel			
Personnel			
Position Title	**Time (hrs)**	**Rate ($/hr)**	**Total Cost**
Project Manager	480 hrs	$34.62/hr	$16,618
Assistant Manager	480 hrs	$25.00/hr	$12,000
Percentage of Construction Costs	**Percentage**	**Basis (total construction costs)**	**Total Cost**
Cordua Management and Administration	2%	$4,203,210	$85,050
		Total	**$113,668**

Fringe Benefits

Table 4 summarizes Cordua Personnel Fringe Benefits budget for the Project. Fringe Benefits are calculated for the time- and rate-based Personnel costs shown in Table 3 above (the Cordua Management and Administration costs in Table 3 are assumed to be inclusive of Fringe Benefits). The Project Manager for Cordua will devote 480 hours overseeing construction of the Project and be compensated through Fringe Benefits at a rate of $21.18 per hour. The Project Manager Fringe Benefits are based on the position's current hourly rate and comprise the employer portion of payroll tax of $2.86/hour, employer contribution to retirement of $0.69/hour, employer healthcare reimbursement of $11.41/hour, and worker's compensation insurance of $6.23/hour. The Assistant Manager for Cordua will also contribute approximately 480 hours to the Project and be compensated through Fringe Benefits at a rate of $8.79 per hour. The Assistant Manager Fringe Benefits are based on the position's current hourly rate and comprise the employer portion of payroll tax of $2.06/hour, employer contribution to retirement of $0.50/hour, and worker's

compensation insurance of $6.23/hour. It is estimated that each of the Personnel will contribute 40 hours of work toward each of the 12 Project sites.

Table 4. Fringe Benefits			
Fringe Benefits			
Position Title	**Compensation ($)**	**Quantity (hr)**	**Total Cost**
Project Manager	$21.18	480	$10,166
Assistant Manager	$8.79	480	$4,219
		Total	**$14,386**

Travel

There are no travel costs included in the requested grant funding.

Equipment

There are no equipment costs included in the requested grant funding.

Supplies

There are no supplies costs included in the requested grant funding.

Contractual

Table 5 summarizes the Contractual budget for the Project. This budget category includes estimated costs for consultant(s) to provide grant Project administration services to Cordua, including, but not limited to, preparation of required grant submittals, invoices, etc., coordination/correspondence with the federal funding agency, and other reporting requirements. For purposes of cost estimation, the grant Project administration services are assumed to cost $2,500 per month on average for the 36-month duration of the Project. This estimated cost is based on an understanding of administration costs for similar grant-funded projects.

Table 5. Contractual		
Contractual		
Purpose	**Description of Costs**	**Total Cost**
Project Management and Grant Administration	Administrative & legal expenses for grant administration; assumes $2,500/month for 36 months per site	$90,000
	Total	**$90,000**

Construction

Table 6 summarizes the Construction budget for the Project. Construction costs include construction materials and contractual costs related to construction.

The construction material costs are based on unit costs for the flow control equipment, including 2 Rotork Actuators and Gearboxes with a control cabinet at the Cordua/Hallwood Diversion from Yuba River site and 32 FlumeGates at the other 11 Project sites. Unit prices between the FlumeGates differ based on individual gate models. The construction materials costs also include the cost of the cloud-based SCADA system SiteConnect at 11 of the 12 sites. Each total cost per line item is increased by an additional 8.25% to account for the local sales tax rate, which is not accounted for in the sourced Rubicon Water Quote #Q501544d (included as **Appendix A**).

Contractual costs under the Construction budget category are costs for the construction and engineering work associated with the Project, and are based on engineering cost estimates developed by Cordua's engineering consultant.

Contractual costs include the following directly related to construction (direct construction costs), with the contractor(s) to be determined: pre-construction submittals and activities; installation of the flow control equipment at all 12 sites and replacement of the flow control structures at two of the 12 sites; demolition and earthwork associated with replacing the flow control structures at those two sites; implementation of stormwater best management practices (BMPs) and sampling during construction; dust suppression; and builder's risk insurance.

Contractual costs also include cost items related to construction engineering which are estimated as a percentage of total direct construction costs, based on generally accepted industry values. These items include: contingency, engineering project manager; Cordua and County plan check; Cordua and County inspection; engineering design (including preliminary engineering, design engineering and surveying, and construction surveying); construction management; and construction security. The contractor that will provide these services is to be determined.

Lastly, contractual costs under the Construction budget category also include miscellaneous additional costs, including: geotechnical investigation, environmental documentation and permitting, and encroachment permitting.

Table 6. Construction			
Construction			
Construction Materials	**Quantity**	**Unit Cost**	**Total Cost (plus 8.25% tax)**
Rotork Actuators & Gearboxes	2	$25,000	$54,125
Control cabinet with ACE3600 RTU, cell modem, battery set, solar regulator, and solar panel	1	$30,000	$32,475
Programming, install & commissioning of Rotork Actuators & Gearboxes + Control cabinet	1	$11,000	$11,908
FlumeGate FGB-2268-3038	3	$39,850	$129,413
FlumeGate FGB-1050-1804	3	$39,850	$129,413
FlumeGate FGB-1675-1804	3	$42,165	$136,931
FlumeGate FGB-1180-1804	3	$36,940	$119,963
FlumeGate FGB-1675-2186	3	$52,835	$171,582
FlumeGate FGB-1675-1437	3	$35,050	$113,825
FlumeGate FGB-1050-1437	3	$30,715	$99,747
FlumeGate FGB-1050-1587	6	$34,120	$221,609
FlumeGate FGB-0760-1273	5	$28,060	$151,875
SiteConnect Live Starter Kit	11	$1,000	$11,908
FlumeGate supervising and commissioning	32	$1,600	$55,424
Contractual			
Contractor Name	**Description of Costs**		**Total Cost**
To be determined	Pre-construction submittals and activities		$32,300
To be determined	Gate structure, embankment, and other required work		$2,229,337

To be determined	Demolition & Earthwork Construction	$322,476
To be determined	Stormwater BMPs, Monitoring and Sampling	$93,900
To be determined	Water Supply and Dust Suppression	$35,000
To be determined	Builder's Risk Insurance	$50,000
To be determined	Contingency	$850,503
To be determined	Cordua and County Plan Check	$63,788
To be determined	Cordua and County Inspection	$106,313
To be determined	Construction Inspection and Material Testing	$127,575
To be determined	Construction Security	$42,525
To be determined	Geotechnical Project Identification Reporting	$33,000
To be determined	Environmental Documentation and Planning	$50,000
To be determined	CVFPB Encroachment Permitting	$23,500
To be determined	Project Manager	$127,575
To be determined	Preliminary Engineering	$21,263
To be determined	Design Engineering and Surveying	$318,938
To be determined	Construction Surveying	$85,050
To be determined	Construction Management	$212,626
	Subtotal	**$6,265,866**

Other Direct Costs

Table 7 summarizes the Other Direct Costs budget for the Project. The SCADA-based software SiteConnect enables more effective operation of the flow control structures by providing more accurate and timely information on flow rates and allowing remote operation. The SiteConnect Live annual subscription fee is $500 per control site; a two-year subscription for each control site is reflected by the below budget.

Table 7. Other Direct Costs		
Other Direct Costs		
Name	**Purpose**	**Total Cost**
SiteConnect Live annual subscription (2 years)	Annual subscription fee, per site. Includes cloud hosting and cellular service.	$11,000
	Subtotal	**$11,000**

Indirect Costs

Table 8 summarizes the Indirect Costs budget for the Project. Cordua does not receive a Federal negotiated indirect cost rate. Therefore, the budget includes a 10% de minimis rate of modified total direct costs (personnel and fringe costs).

Table 8. Indirect Costs		
Indirect Costs		
Rate Type	**Basis**	**Total Cost**
Indirect costs	10% of Personnel and Fringe Costs	$12,805
	Subtotal	**$12,805**

Environmental and Cultural Resources Compliance

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should respond to the following list of questions focusing on NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge and note that this information will be used in evaluating the project's readiness to proceed and project implementation. If any question is not applicable to the project, please explain why. The application should include the answers to the following questions:

- 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.

Construction activities for the Project will include minor excavation and grading activities, the exact nature of which will be determined upon finalization of the site plans for each site. Work at each site will be contained within a limited area of the canal upstream and downstream of the induvial gates. Construction activities will be conducted in accordance with best management practices such as stormwater pollution prevention, sediment/erosion control, and dust control measures to minimize impacts to the surrounding environment.

- 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 listed species of species proposed to be listed as Federal threatened or endangered species, or designated critical habitat in the Project area. If upon completion of environmental review (including biological review, as necessary) any listed or proposed listed species are identified, appropriate measures to prevent or mitigate impacts to those species will be identified and implemented during Project construction.

- 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.

Cordua Irrigation District does not contain surface water or wetlands that fall under CWA jurisdiction as "Waters of the United States".

- When was the water delivery system constructed?

The Cordua Main Canal in its current extent was completed in 1940, with certain portions of the canal being constructed as early as 1874. The existing flow control structures were constructed at various times starting in 1940.

- 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.

The proposed Project entails replacing/upgrading flow control structures at 12 points along the Cordua Main Canal with automated control structures. The existing manual flow control structures were constructed at various times since completion of the Cordua Main Canal in 1940 and have been replaced according to condition on average approximately every 20 years.

- 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.

No. There are no buildings, structures, or features in the Project area that are listed or eligible for listing on the National Register of Historic Places.

- Are there any known archeological sites in the proposed project area?

No. There are no known archeological sites in the Project area.

- Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

No. It is anticipated that by helping to promote efficient use of surface water, with indirect benefits to the groundwater resources of the Yuba Subbasins, the Project will provide positive impacts on low income and minority populations.

- Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on Tribal lands?

No. The Project will not limit access to, or ceremonial use of, sacred sites or result in other impacts on Tribal lands.

- 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. The Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

Required Permits or Approvals

Permits expected to be required to complete this Project include those related to construction activities. During Task 3, a complete list of permitting requirements will be developed, and all necessary permits will be obtained prior to construction activities.

Overlap or Duplication of Effort Statement

There is no overlap between the proposed project and any other active or anticipated proposals or projects. Furthermore, this proposal is not in any way duplicative of any proposal or project that has been or will be submitted for funding consideration to any other potential funding source.

Conflict of Interest Disclosure Statement

No actual or potential conflict of interest exists at the time of this proposal's submission.

Uniform Audit Reporting Statement

Cordua has not done a single year audit because Cordua's has not had federal grant expenditures in excess of $750,000 in the past fiscal year.

Certification Regarding Lobbying

SF-LLL: Disclosure of Lobbying Activity (if Applicable)

Not applicable.

Letters of Support

Cordua received letters of support for the Cordua Irrigation District Canal Water Control Gate Instrumentation & Automation Project (the previous name for the Project now known as the "Cordua Irrigation District Main Canal Flow Control Structure Upgrade & Instrumentation Project") from the Yuba Water Agency, Hallwood Irrigation Company, and Ramirez Water District. A copy of the letters of support are included here as **Appendix B**.

Official Resolution

An official resolution was adopted by the Cordua Board of Directors to commit to the financial and legal obligations associated with receipt of a financial assistance award under this NOFO, verifying:

- The identity of the official with legal authority to enter into an agreement.
- The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted.
- Cordua will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

The resolution is included in **Appendix C**.

Appendix B: Letters of Support

Cordua received letters of support for the Cordua Irrigation District Canal Water Control Gate Instrumentation & Automation Project (the previous name for the Project now known as the "Cordua Irrigation District Main Canal Flow Control Structure Upgrade & Instrumentation Project") from the Yuba Water Agency, Hallwood Irrigation Company, and Ramirez Water District. Those letters are included in this Appendix B.

530.741.5000
info@yubawater.org
yubawater.org

February 20, 2024

Cordua Irrigation District
Attn: Charley Matthews, Jr.
3489 Kibbe Road
Marysville, California 95901

RE: Letter of support for Cordua Irrigation District's application for the USBR WaterSMART Water and Energy Efficiency Grant for Fiscal Year 2024-2025 No. R24AS00052

To whom it may concern,

The Yuba Water Agency expresses its utmost support for the Cordua Irrigation District's application to the United States Bureau of Reclamation (USBR) WaterSMART Water and Energy Efficiency Grant (WEEG) program for Fiscal Year 2024 and 2025 for grant funding for the **Cordua Irrigation District Canal Water Control Gate Instrumentation & Automation Project** (Project).

The Yuba Water Agency provides surface water supplies to the Cordua Irrigation District and this project will help increase the efficiency and better overall management of their irrigation deliveries, which are essential to the agriculture that drives our local economy.

The Project's flow control infrastructure upgrades along the Cordua Main Canal are necessary improvements that will allow increased irrigation water use efficiency and water savings from reduced spills and losses from the conveyance system, resulting in increased water supply resilience for local communities in the North Yuba Subbasin, over which the Yuba Water Agency is one of the Groundwater Sustainability Agencies.

The Yuba Water Agency strongly supports this Project and encourages the WaterSMART program to award the funds requested in Cordua's WEEG application proposal.

Sincerely,

Ryan McNally
Director of Water Resources and Flood Risk Reduction
(530) 741-5037
rmcnally@yubawater.org

February 21, 2024

Cordua Irrigation District
Attn: Charley Matthews, Jr.
3489 Kibbe Road
Marysville, California 95901

Subject: Letter of support for Cordua Irrigation District's application for the USBR WaterSMART Water and Energy Efficiency Grant for Fiscal Year 2024-2025 No. R24AS00052

To whom it may concern,

This letter is written on behalf of the Hallwood Irrigation Company to express support for the Cordua Irrigation District's application to the United States Bureau of Reclamation (USBR) WaterSMART Water and Energy Efficiency Grant (WEEG) program for Fiscal Year 2024 and 2025 for grant funding for the **Cordua Irrigation District Canal Water Control Gate Instrumentation & Automation Project** (Project). If awarded, these grant funds will support the replacement/ retrofitting of flow control structures at 12 points along the Cordua Main Canal, allowing for increased efficiency in surface water conveyance and delivery and associated water use savings.

Hallwood Irrigation Company provides agricultural water service to approximately 8,600 acres of lands in Yuba County and is located directly south of the Cordua Irrigation District service area. Water served by Hallwood Irrigation Company to customers is surface water from the Yuba River that is conveyed from the diversion point, co-owned and operated by Cordua and Hallwood, to Hallwood's separate canal distribution system. Water deliveries to Hallwood Irrigation Company's service area through a section of the Main Canal are essential to the agriculture upon which our local economy depends. The Project's flow control infrastructure upgrades, including the portion of the Main Canal upstream of Hallwood's point of separation, are necessary improvements that will allow increased irrigation water use efficiency and water savings from reduced spills and losses from the conveyance system, resulting in increased water supply resilience for local communities in the North Yuba Subbasin, including Hallwood Irrigation Company's service area.

Hallwood Irrigation Company strongly supports this Project, and encourages the WaterSMART program to award the funds requested in Cordua's WEEG application proposal.

Sincerely,

Steven Springer

Steve Springer
Hallwood Irrigation Company

February 21, 2024

Cordua Irrigation District
Attn: Charley Matthews, Jr.
3489 Kibbe Road
Marysville, California 95901

Subject: Letter of support for Cordua Irrigation District's application for the USBR WaterSMART Water and Energy Efficiency Grant for Fiscal Year 2024-2025 No. R24AS00052

To whom it may concern,

This letter is written on behalf of the Ramirez Water District to express support for the Cordua Irrigation District's application to the United States Bureau of Reclamation (USBR) WaterSMART Water and Energy Efficiency Grant (WEEG) program for Fiscal Year 2024 and 2025 for grant funding for the **Cordua Irrigation District Canal Water Control Gate Instrumentation & Automation Project** (Project). If awarded, these grant funds will support the replacement/ retrofitting of flow control structures at 12 points along the Cordua Main Canal, allowing for increased efficiency in surface water conveyance and delivery and associated water use savings.

Ramirez Water District provides agricultural water service to approximately XXX acres of lands in Yuba County and is located directly north of the Cordua Irrigation District service area. Water served by Ramirez Water District to our customers is surface water from the Yuba River that is conveyed from the river through the Cordua Main Canal to Ramirez Water District's canal distribution system. With no other connection to the Yuba River, water deliveries to Ramirez Water District through the Cordua Main Canal are essential to the agriculture upon which our local economy depends. The Project's flow control infrastructure upgrades are a necessary improvement to the Cordua Main Canal system that will allow increased irrigation water use efficiency and water savings from reduced spills and losses from the conveyance system, resulting in increased water supply resilience for local communities in the North Yuba Subbasin, including Ramirez Water District's service area.

Ramirez Water District strongly supports this Project, and encourages the WaterSMART program to award the funds requested in Cordua's WEEG application proposal.

Sincerely,

[signature] DocuSigned by: Charlie Engs 11BA6B0C8A12421...

Ramirez Water District

Appendix C: Official Resolution

The Cordua Board of Directors adopted an official resolution to commit to the financial and legal obligations associated with receipt of a financial assistance award under this NOFO. The resolution is included in this Appendix C.

RESOLUTION NO. 2024-01

A RESOLUTION OF THE BOARD OF DIRECTORS OF CORDUA IRRIGATION DISTRICT IN SUPPORT OF A GRANT APPLICATION INCLUDING AN INFRASTRUCTURE IMPROVEMENT PROJECT

WHEREAS, Cordua Irrigation ("District") is a Groundwater Sustainability Agency ("GSA") in the North Yuba Subbasin; and

WHEREAS, the GSAs in the North Yuba Subbasin and South Yuba Subbasin have adopted one Groundwater Sustainability Plan for the North Yuba Subbasin and South Yuba Subbasin pursuant to the Sustainable Groundwater Management Act ("SGMA"); and

WHEREAS, the Yuba Water Agency Groundwater Sustainability Agency ("Yuba Water Agency GSA") is a GSA in the North Yuba Subbasin and in the South Yuba Subbasin; and

WHEREAS, the Yuba Water Agency is participating in a program with the Bureau of Reclamation (USBR) called WaterSmart to make funding available for the Sustainable Groundwater Management Project; and

WHEREAS, the District desires to work cooperatively with the North Yuba Subbasin GSAs including Yuba Water Agency in the submission, and if accepted and approved compliance with the terms of such grant in developing and undertaking projects and other activities pursuant to the Grant Application and accepted terms; and

WHEREAS, the Cordua Irrigation District's infrastructure improvement project would enhance and support the goals of the grant program.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Cordua Irrigation District that the District authorizes and directs the application to obtain a grant for those purposes.

BE IT FURTHER RESOLVED that Cordua Irrigation District has the authority and agrees that upon receipt and mutual approval of the grant terms, Cordua Irrigation District will enter into a funding agreement to receive a grant for Cordua Irrigation District's Infrastructure Improvement Project.

BE IT FURTHER RESOLVED that the President of Cordua Irrigation District, or designee, is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, execute a funding agreement and any future amendments thereto, submit invoices, and submit and reporting requirements for the Infrastructure Improvement Project.

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PASSED AND ADOPTED this 21st day of February, 2024 at Marysville, California, the following Directors voting thereon:

Ayes: Mathews, Siller, Hontz, Morello

Noes: none

Abstain: none

Absent: none

By: _____
President of the Board

ATTEST:

By: _____
Secretary to the Board