Dawson County Canal River Gates Upgrade and Automation Project

February 22, 2024

WaterSMART—Water and Energy Efficiency Grant Program Application

NOFO: R24AS00052

Fiscal Year 2024

Bureau of Reclamation

Applicant:

Nebraska Public Power District

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1. TECHNICAL PROPOSAL

1.1 EXECUTIVE SUMMARY

Date: February 22, 2023

Applicant Name: Nebraska Public Power District (NPPD)

Location (City, County, State): Columbus, Platte County, Nebraska

Eligible Applicant: Category A – Public Power and Irrigation District

NOFO No: R24AS00052

Project Name: Dawson County Canal River Gates Upgrade and Automation Project

Period of Performance: January 2025 – May 2026 (17 months)

Is Project on a Federal Facility: The project is not located on a Federal Facility

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Nebraska Public Power District (NPPD) is the state's largest vertically integrated electric utility covering all or part of 90 counties in Nebraska and serving towns, regional public power districts, and cooperatives totaling nearly 90,000 retail electric customers. NPPD also operates an intricate network of 150 miles of irrigation canals, five river diversions, two off-channel dams, and two off-channel reservoirs along a 150-mile stretch of the Platte River, which helps power its two hydropower plants. Overall, this water system delivers supplemental irrigation to more than 75,000 acres in central Nebraska contributing millions of dollars annually to the value of crops in the Platte River Valley. It also contributes to groundwater recharge, supports threatened and endangered species habitat, and provides exceptional recreational opportunities in the region.

In service since 1894, the Dawson County Canal is one of three irrigation canals that NPPD owns and operates. It has approximately 42 miles of main irrigation canal, 125 miles of lateral canal, and three river gates, which divert 63,000 acre-feet (AF) of water annually from the Platte River near Cozad, Nebraska and terminates into Elm Creek. Collectively, the canal serves 170 customers and has irrigation water rights for nearly 22,000 acres in south central Nebraska. The canal also provides groundwater recharge benefits to thousands of acres irrigated by groundwater wells. The current Dawson County Canal system has been in operation for over 130 years and has an aging infrastructure in need of improvement and modernization to increase water use efficiency and allow for remote access. Three river gates located just downstream from the diversion point in the Platte River channel, have two aging manual gates that currently leak and no longer function as intended. Due to their age, repairs are more frequent and less effective.

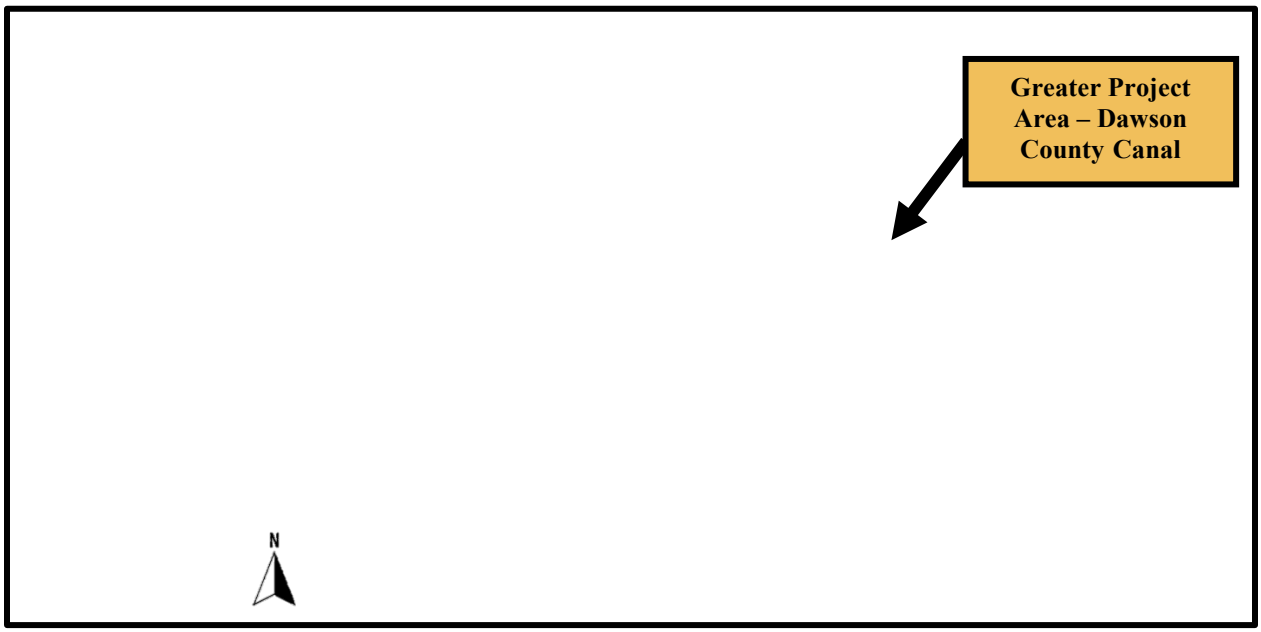
NPPD is requesting funding to replace the existing manual River Gates #2 and #3 located near the Dawson County Canal point of diversion in the Platte River with new automated gates that will integrate with the existing Supervisory Control and Data Acquisition (SCADA) system. These gates **currently leak at a rate of 20.6 cubic feet per day (CFS/day).** In addition to this inefficiency of operation, these gates do not allow for remote, real-time operation that is necessary during high flow events which can lead to adjacent and downstream flooding. Because these two gates require manual operation to open or close, it can be difficult to access and pose a safety risk to access during storms. The project will provide quantifiable water savings estimated at **713.8 AF per year** by replacing and upgrading two river gates leading to greater efficiency in management of water across the canals in the NPPD System. This project would also support

overall water sustainability and drought resiliency by more effectively managing the timing of diversions and using excess flow water to recharge groundwater when available. Water savings realized can then be made available for additional beneficial uses such as **162,033 kilowatt hours (KWh) per year of** additional clean hydropower for the Central Nebraska Public Power and Irrigation District (CNPPID). For this project's estimated 162,033 KWh of additional hydropower, one can expect **259,253 pounds of carbon dioxide emissions to be avoided.** Automation also reduces onsite trips resulting in less use of fuel and **3,487 pounds of reduced greenhouse gas emissions**. This project would be conducted with the support and grant contribution from the Nebraska Department of Natural Resources (NDNR), a state agency with statewide regulatory responsibilities for water resources in Nebraska.

1.2 PROJECT LOCATION

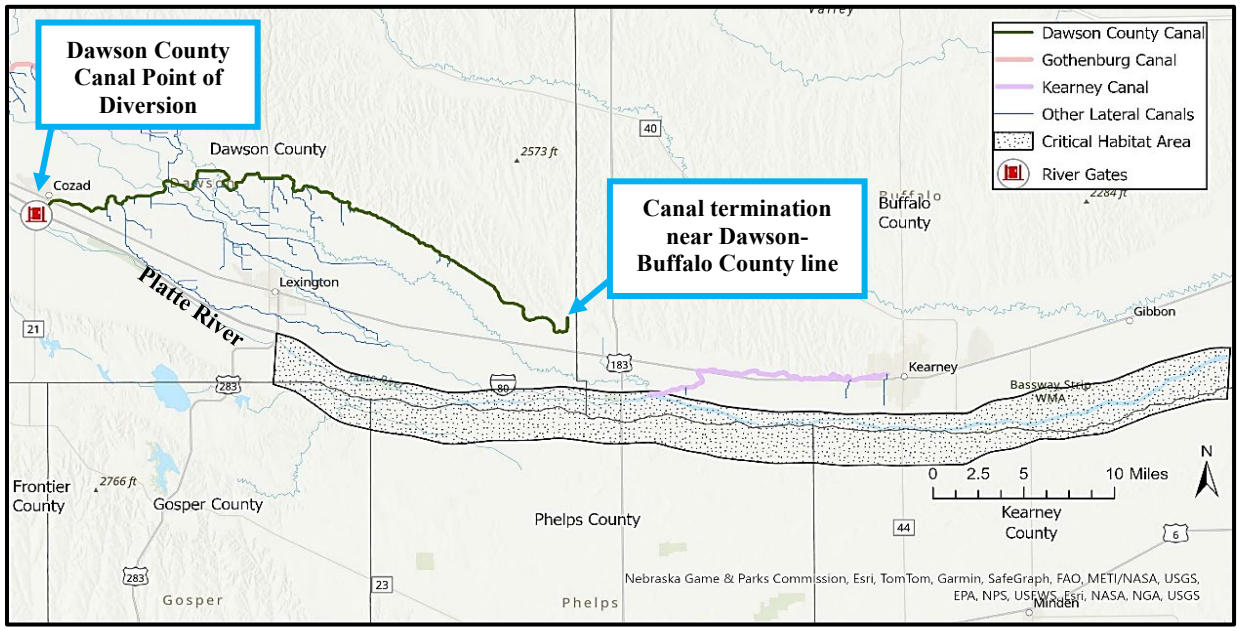
NPPD's system encompasses four counties in south central and southwest Nebraska including Keith, Lincoln, Dawson, and Buffalo Counties. It is comprised of a collection of water assets including canals, reservoirs, recharge facilities, hydropower plants, and other water assets (**Figure 1)**.

Figure 1. Geographic Region of NPPD System



The project's geographic extent is the uppermost section of the Dawson County Canal located in Dawson County, Nebraska just southwest of Cozad, Nebraska. River gates #2 and #3 are in the Platte River just downstream of the canal's point of diversion as shown in **Figure 2**. The gates are located approximately 1.2 miles southwest of the town of Cozad, Nebraska and 14 miles northwest of the town of Lexington, Nebraska. Approximate coordinates for the gates are Latitude 40.8431560°N and Longitude 99.9939245°W.

Figure 2. Project Location and Extent



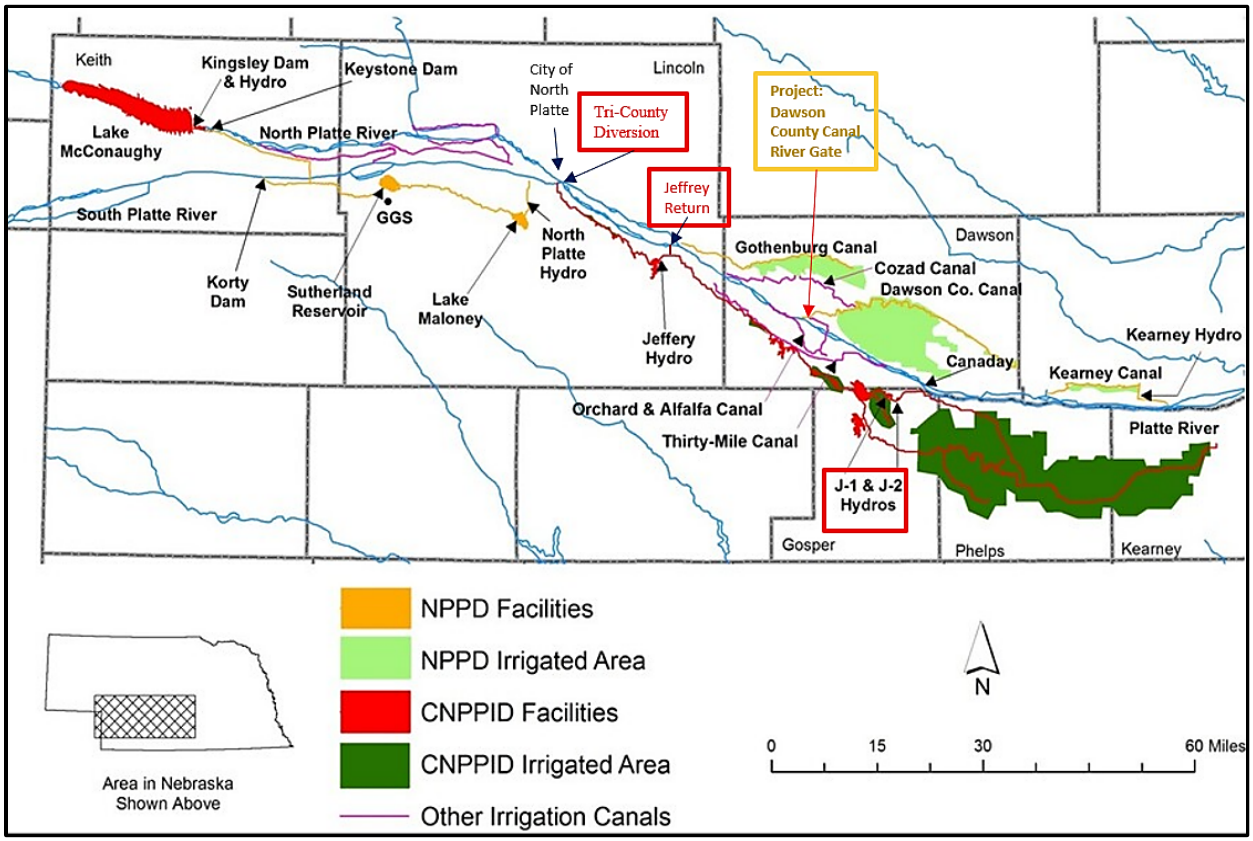
1.3 PROJECT DESCRIPTION

Irrigation and Power Generation in the Region

Nebraska is the only 100% public power state in the nation and NPPD is the state's largest vertically integrated electric utility with a chartered territory consisting of all or part of 90 of Nebraska's 93 counties, serving wholesale towns, regional public power districts and cooperatives, and approximately 90,000 retail customers. NPPD is the largest generator of power in the state, with fossil, hydro, nuclear, solar, and wind facilities, collectively delivering power to over one million customers. NPPD also operates the intricate network of 150 miles of irrigation/power canals, five river diversions, two off-channel dams, and two off-channel reservoirs along a 150-mile stretch of the Platte River. This network helps to power two hydropower plants. These include a 24-megawatt facility by North Platte, Nebraska and a one-megawatt facility near Kearney, Nebraska. In addition to the essential role that the water plays in irrigating farmland and generating electricity in the area, the system provides recreational opportunities including fishing, hunting, camping, hiking, kayaking, and a variety of other outdoor activities. Diverted surface water is also used to recharge groundwater in the region, which supports fish and wildlife, industry, and which helps to replenish domestic, agricultural, and municipal water supplies.

The Dawson County Canal headgate is the downstream-most canal diversion in the central Platte River, which receives water from CNPPID's Jeffrey Return and water passing CNPPID's Tri-County Diversion near North Platte. Any water that passes the Dawson County Canal headgate due to leakage is unable to be diverted through a downstream canal and could truly be considered "lost water." Reducing the amount of water that must be returned to the river at CNPPID's Jeffrey Return has the auxiliary benefit of allowing CNPPID the ability to use that water to produce hydropower at their J-1 and J-2 powerplants on their canal system. (See **Figure 3** for various locations mentioned.)

Figure 3. Location of hydropower benefits

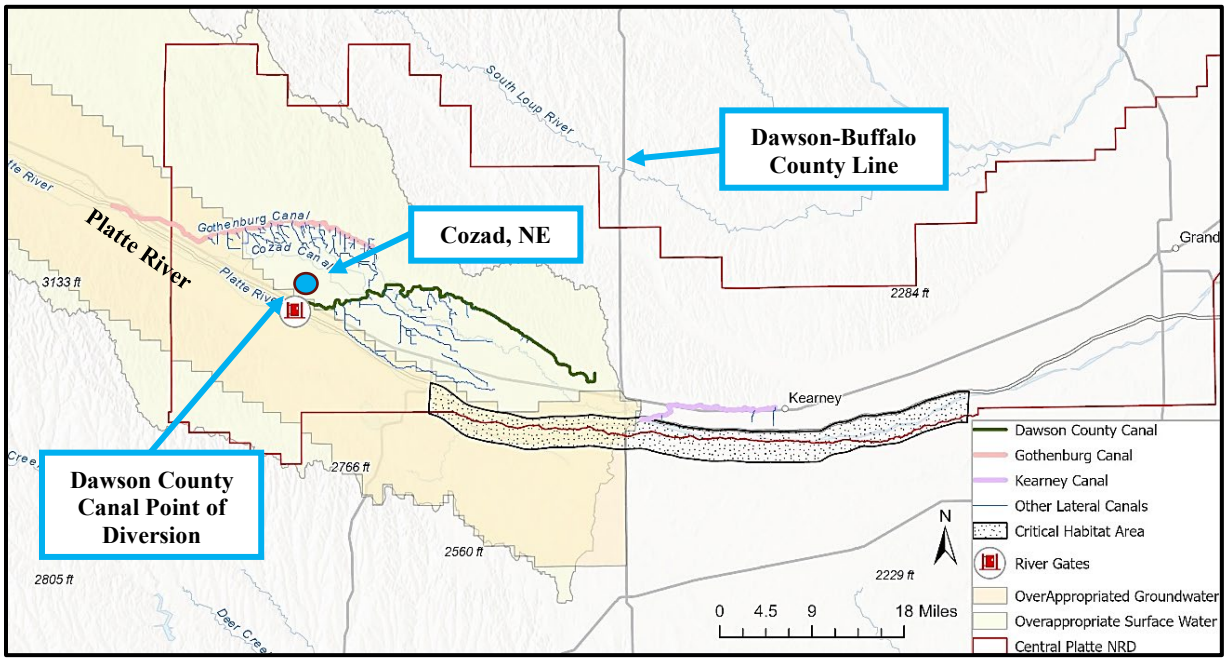


Platte River Basin

The Platte River is a vital resource for the State of Nebraska and the lifeblood of the region. Spanning nearly 310 miles across Nebraska, the Platte River provides a vast array of socioeconomic and environmental benefits. The waters of the Platte River support the people of Wyoming, Colorado, and Nebraska and the regional economies. Water projects in the three-state Platte River Basin, including 15 major dams, provide municipal and industrial water supplies for nearly five million people, irrigate 3.5 million acres of farmland, and generate tens of millions of dollars of renewable hydroelectric power, annually. Water shortages have severe consequences including conflicts over water allocations, inability to meet target flows for endangered species, negative impacts to the 3.5 million acres of cropland supported by irrigation, and threats to municipal water supplies. Most of NPPD's water assets and infrastructure are dependent upon the Platte River for a source of water to fill canals and reservoirs, generate power, power plant cooling, and recharge groundwater, so it is critical to find ways to improve efficiency, conserve water, and redistribute excess flows for beneficial use.

The Dawson County Canal is located in an Over Appropriated area jointly administered by the Central Platte Natural Resources District (CPNRD) and NDNR. An Integrated Management Plan was developed to conjunctively manage surface water and groundwater in the designated area to balance water use and supply for sustainable water resources management. The goal of the designation and associated plan is to return the area to a Fully Appropriated condition or better through conservation, drought planning, incentive programs, and promotion of projects and effort to improve water use efficiency that results in savings (see **Figure 4**).

Figure 4. Platte Basin Appropriation



Dawson County Canal

The Dawson County Canal is a part of NPPD's System and stretches across Dawson County in south central Nebraska near the Cozad State Wildlife Management Area (south of Cozad, Nebraska) to the Dawson-Buffalo County line. It has approximately 42 miles of main irrigation canal and 125 miles of lateral canal, and three river diversion gates which divert 63,000 acre-feet of water annually from a channel in the Platte River south of Cozad, Nebraska. Collectively, the canal serves 170 customers and has irrigation water rights for nearly 22,000 acres in the region. The canal also provides groundwater recharge benefits to thousands of acres irrigated by groundwater wells. Built in 1894, the canal system has been in continuous service for the past 130 years and some of its aging infrastructure requires considerable maintenance and is prone to spills, overflows, and leaks. While upgrades have been made by NPPD including automation of one river gate, some infrastructure components still need improvement and modernization to increase water use efficiency and allow for remote access that improves canal operation efficiency and management of diversions.

River Gates #2 and #3, located just downstream from the diversion point in the Platte River channel southwest of Cozad, Nebraska at the headgate structure, are manual gates that leak and are approaching the end of their useful, functional life (**Figure 5**). Neither gate is automated, and they require manual operation which can create safety issues for personnel during high water events who must travel onsite to access. Because these gates do not seal, water intended for diversion leaks through the gates and continues downstream. This is a lost opportunity to utilize water for additional beneficial uses such as irrigation, groundwater recharge (via seepage through the canal channel floor), recreation, and other municipal/industrial uses. **Figure 6** shows a close-up of River Gates #2 and #3 as they are in the Platte River just downstream of the Dawson County Canal point of diversion. Note that there is a third gate at the same location, River Gate #1, but it was previously automated and not a focus of this project.

Figure 5. Dawson County Canal River Gates 3, 2, and 1 (from left to right)

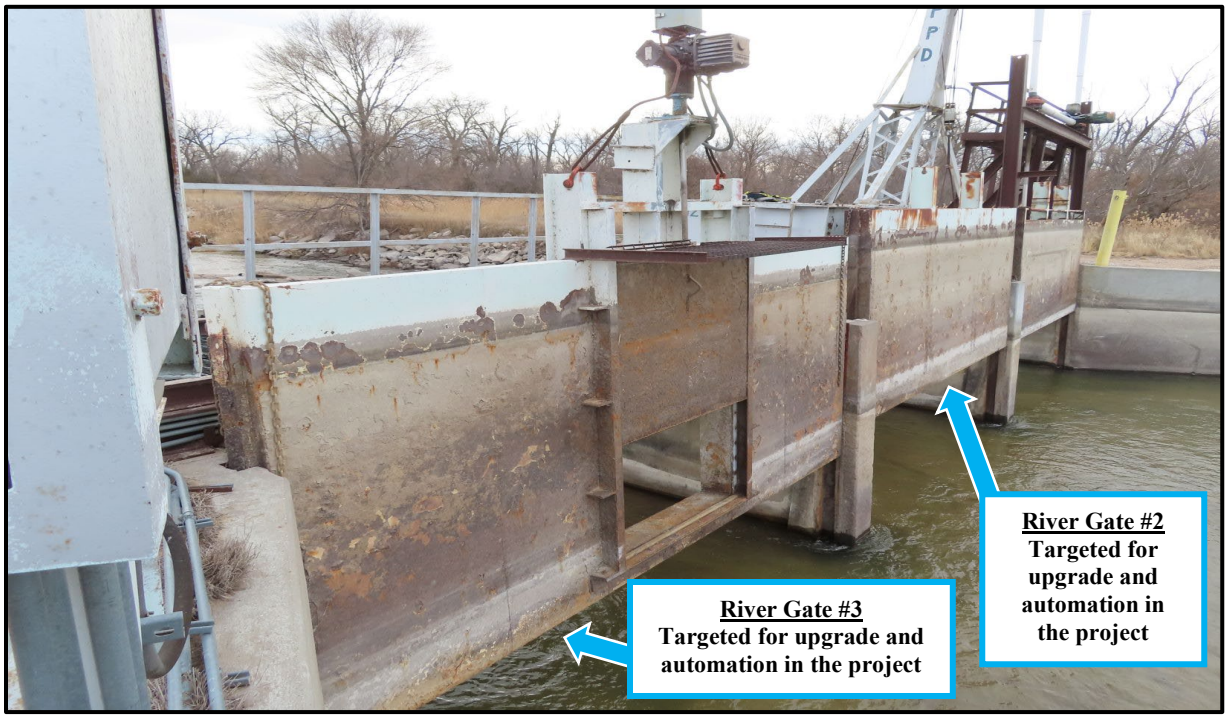
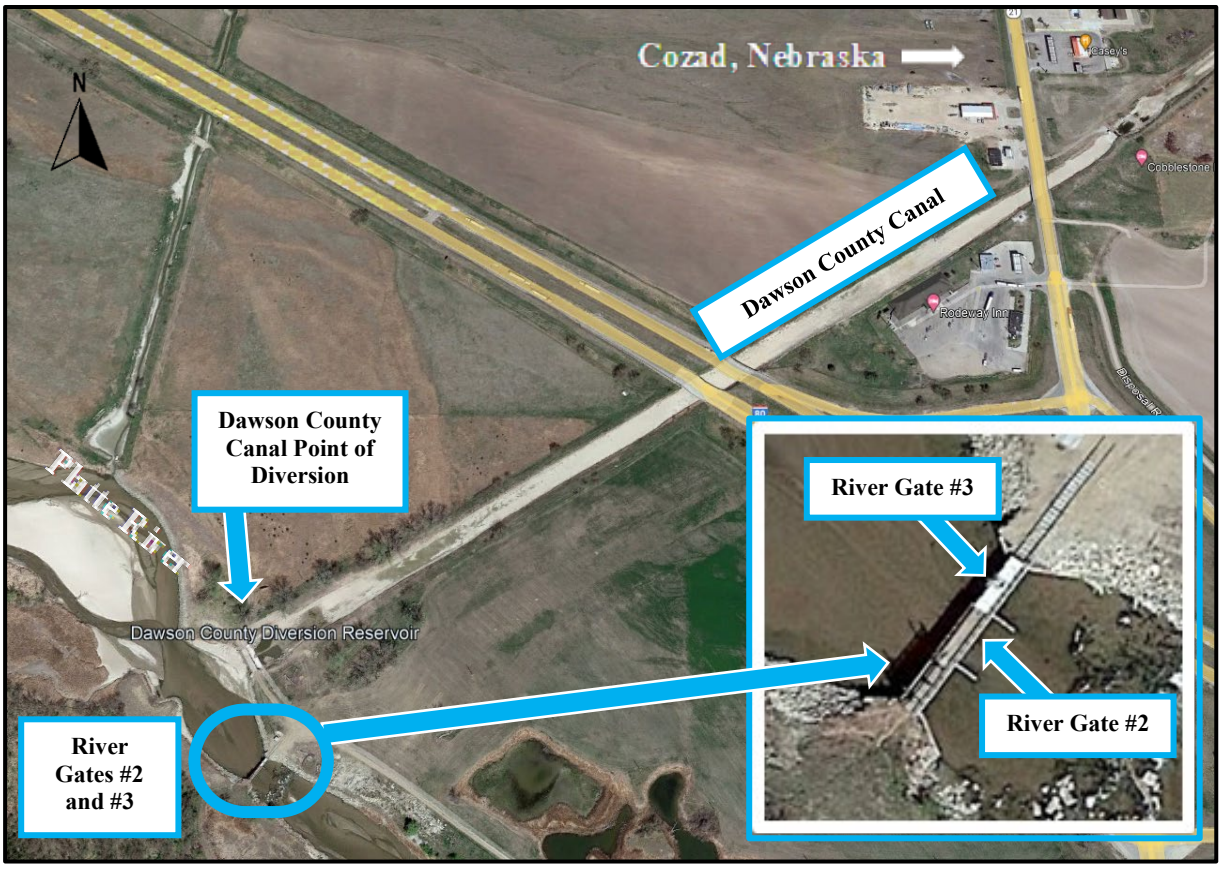


Figure 6. Location of the Dawson County Canal River Gates 2 and 3 in the Platte River



Project Need

The Dawson County Canal is an important water conveyance system in the region. This canal provides irrigation water, groundwater recharge, flood control, fish and wildlife habitat, and a variety of other benefits. Using a system of gates, the canal can manage flow that either is directed into the canal channel for various uses or is allowed to continue downstream in the Platte River to meet additional junior water rights, and to recharge groundwater throughout the downstream stretch. The Dawson County Canal also provides drainage and flood control for surrounding land in Dawson County. During times of excess flow, the canal helps to redirect high flows in the Platte River and allows for groundwater recharge to help replenish groundwater supplies and maintain base stream flows. The Platte River Recovery Implementation Program (PRRIP) pays NPPD for this retiming of excess flows. The PRRIP (a partnership between Colorado, Wyoming, Nebraska, and the Department of Interior) has the goal of developing a shared approach to managing water and habitat for the benefit of several endangered species in the Platte River. Water users from the three states and local and national conservation groups have also joined that effort. Some of the system infrastructure, including River Gates #2 and #3, no longer performs at an optimal level and allows for leaks, mistimed diversions, and missed opportunities to better manage excess flow. Replacing River Gates #2 and #3 will eliminate inefficient operation of the canal system and modernize it.

Purpose

The purpose of the Irrigation Canal River Gate Upgrade and Automation Project is to improve water use efficiency in the Dawson County Canal and mitigate flood impacts by upgrading and replacing the existing manual River Gates #2 and #3 that leak and require considerable maintenance with new, automated gates that will integrate with the SCADA system currently in place. This will allow better management and control of diversions and excess flow events, provide for safer, remote operation of the gates during high flow events and storms, and allow for more groundwater recharge opportunities. Water savings realized can provide additional hydropower for neighboring CNPPID facilities. Upgrading these gates will also modernize the Dawson County Canal and allow for more coordinated operation of the components. The project qualifies as a Water Conservation Project within the Irrigation Flow Measurement and SCADA categories of eligible projects. Better control and operations of the river gates will also aid in flood management and mitigation. The project also reduces energy costs and greenhouse gas emissions though less travel to the River Gates #2 and #3 site that will be served with remote access, which will also provide for greater safety during storms and high-water flow events where personnel will no longer need to be on site and at risk.

Technical Approach

NPPD proposed to use the following technical approach to implement the Dawson County Canal River Gates Upgrade and Automation Project. Milestones and a proposed timeline are discussed in later sections.

Task 1: Engineering Planning and Design – A final design for automated gates will be prepared to evaluate the size and quantity of materials needed. Additionally, a project plan will be prepared to ensure fabrication quality of the gates, determine the accurate schedule, and ensure health and safety of the field crew.

- Planning documents
- Final Design of gates and SCADA controls
- Equipment and materials procurement
- Secure permissions

Task 2: Site Preparation and Communication – This task ensures that the canal water level lowering timeline is maintained and well communicated, and that the site is readily available for gate removals and installations.

- Communication with stakeholders
- Mobilization, staging, and site preparation
- Monitor weather conditions and conduct safety meetings

Task 3: Field Installation – This task will include construction to be performed in four stages and the post-installation activities. All work will be performed according to standard operating procedures for each task.

- Construction activities
  - Phase 1 – Removal of manual gates
  - Phase 2 – Foundation preparation
  - Phase 3 – Gate installations
  - Phase 4 – Installation and calibration of SCADA controls
- Stakeholder updates and continued communication with water users
- Restoration, clean-up, and demobilization

Task 4: Post-installation Testing and Reporting – Testing will be performed to ensure the gate is operating remotely as desired. This task will ensure project success and complete all reporting as required.

- Post-installation gate function testing
- Post-installation SCADA testing
- Interim and financial reporting
- Final Technical Report and Webinar
- Project Requirement Check-off and close

1.4 EVALUATION CRITERIA

Evaluation Criterion A – Quantifiable 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.*

The Dawson County Canal currently maintains a flow rate of 350 cubic feet per second (cfs) and delivers 63,000 AF of water annually. River Gates #2 and #3 are manually operated river gates on the headgate that are located in the Platte River channel and allow flow to leak though and past the point of diversion. When replaced with new, automated gates, the leakage is expected to be eliminated, resulting in **direct savings of 713.8 AF per year**. Additionally, since these gates

are currently controlled manually, there can be a delay in opening them or the inability to access the gates during storms to convey excess flow from high-flow events.

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)?*

The conserved water (equivalent to the amount of gate leakage) currently remains in the river and travels downstream. The Dawson County Canal river diversion is the downstream-most canal diversion in the central Platte River which receives water from CNPPID's Jeffrey Return and water passing their Tri-County Diversion near North Platte, Nebraska (upstream of project area). Any water which passes the Dawson County Canal headgate due to leakage is unable to be diverted through a downstream canal and could truly be considered "lost water." Reducing the amount of water which must be returned to the river at CNPPID's Jeffrey Return has the auxiliary benefit of allowing CNPPID the ability to use that water to produce hydropower at their Johnson 1 (J1) and Johnson 2 (J2) powerplants on their canal system downstream of the project area. (See **Figure 3** for various locations mentioned.)

- *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?*

The central Platte River is an extremely shallow, broad, braided river with a sandy bottom including many trees and other thick riparian vegetation. Current losses due to the leaking gate allow more unintended flow to continue downstream in the Platte River where it is generally lost to evapotranspiration from riparian vegetation and evaporation from the river surface. These current losses represent the bigger issue of poor operation of the gate and overall system leading to mistimed diversions.

- *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?*

The current gate leakage may provide some downstream environmental benefits such as uptake by riparian vegetation or for fish and wildlife habitat.

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

NPPD canal operators' visual observations indicate an estimated 10 cfs of leakage from River Gate #1 (*Note - not in scope of this project*), 20 cfs from River Gate #2, and 5 cfs from River Gate #3. This totals 35 cfs of gate leakage from all the gates combined. Additional field calculations have helped to confirm the reasonableness of the visual observation. Direct field measurement (FM) of total flow was made on August 25, 2022, using stream gaging equipment at an accessible site 1,000 ft downstream of the gates on a day where NPPD was attempting to divert all of the available water at the diversion ("sweeping the river"). This FM is assumed to represent river gains plus leakage which was 41.2 cfs. A gage measurement (GM) was taken at a river gage about 2,000 ft downstream of the gates and operated by NDNR, which was 53.1 cfs on August 25, 2022. For reference, the gaging station ID is 06766499 – Platte River near Cozad (North Channel). See **Figure 7** for the location of this river gage and **Figure 8** for an example of a gage hydrograph from this location showing the August 25, 2022 reading of 53.1 cfs.

Figure 7. Field and Gage Measurement Locations

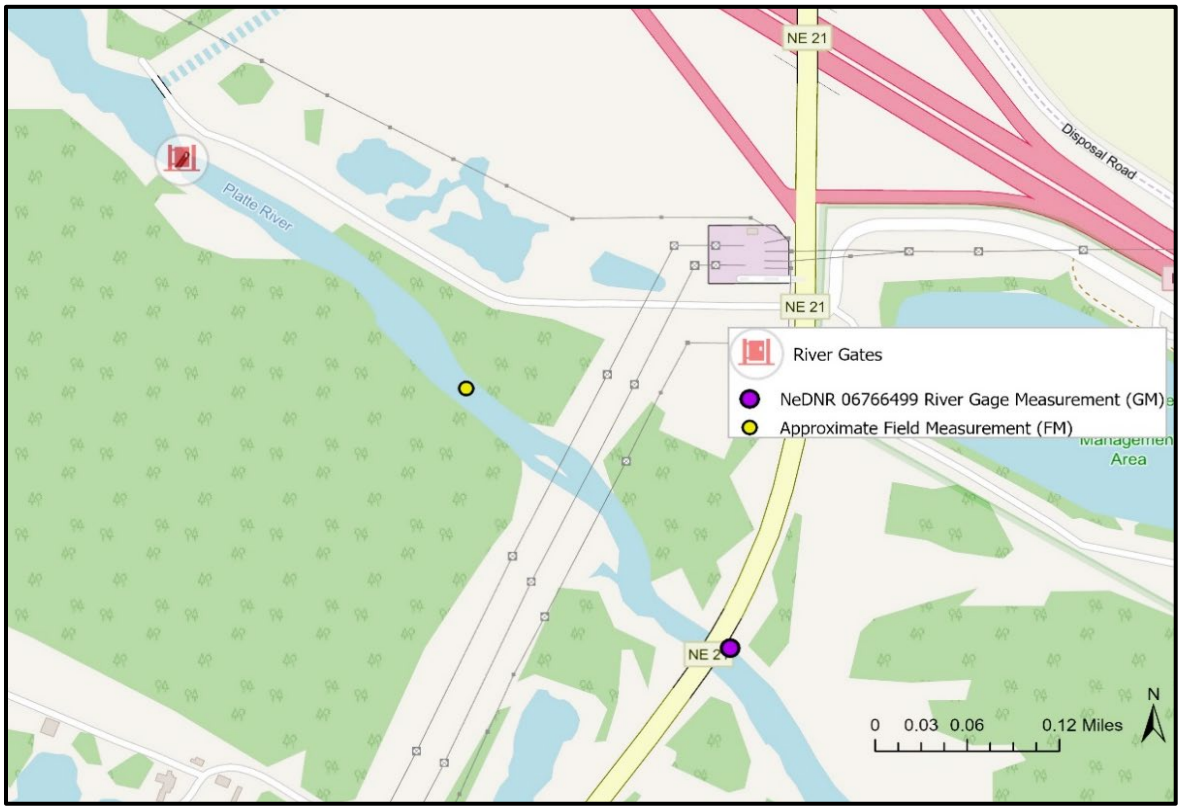


Figure 8. NDNR River Gage Reading

The difference between GM and FM can be assumed to represent the amount of river gains over the distance between the two measurement points:

$$River\ Gains\ (\text{cfs/ft}) = \frac{GM - FM\ (\text{cfs})}{distance\ between\ FM\ and\ FM\ (\text{ft})}$$

Thus, in this case River Gains = 53 – 41.2 / (2000 – 1000) = 0.0118 cfs/ft.

Gate leakage over the distance between the gate and FM can be estimated by subtracting river gains from FM:

$$Total\ Gate\ leakage\ (\text{cfs}) = FM - [river\ gains\ (\text{cfs/ft}) * distance\ between\ FM\ and\ gates\ (\text{ft})]$$

Thus, in this case, gate leakage = 41.2 – 0.0118 * 1000 = 29.4 cfs. The measurement of 29.4 cfs of gate leakage and the visual observation of 35 cfs compare favorably. Given the visual observations of 10 cfs, 20 cfs, and 5 cfs from Gates #1, #2, and #3 respectively, it can be assumed that the percentage contribution to total leakage from Gates #1, #2, and #3 are 30%, 60%, and 10%, respectively. Thus, for the scope of this project, replacing Gates #2 and #3 could account for 70% (60% + 10%) of the total gate leakage amount. Thus, **gate leakage for this project can be calculated as 70% of 29.4 cfs = 20.6 cfs/day, which is equivalent to the water savings**.

The total amount of water lost to leakage from Gates #2 and #3 can be calculated using the total number of days that NPPD attempts to "sweep the river" or divert all water:

$$Total\ volume\ of\ leakage\ from\ gates\ \#2\ and\ \#3\ (\text{AF}) = 20.6\ (\text{cfs}) * no.of\ days\ (day) * 1.98\ (\text{AF/cfs-day})$$

Table 1 shows the data for the number of days of sweeping per year and corresponding gate leakage volume since 2014. Over the previous ten years, gate leakage on days NPPD attempted to divert all water ("sweeping the river") into the canal and averaged 713.8 AF per year (7,138 AF / 10 years). Note that for the purpose of this grant application, NPPD is only counting days in July and August to not overestimate the amount of water leakage and savings.

Table 1. NPPD Water Diversion Days and Gate Leakage

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Days in July and August sweeping river	6	2	0	12	12	0	7	43	60	33	**175**
Gate leakage (AF)	245	82	0	489	489	0	286	1754	2447	1346	**7138**

Notes:
- Gate leakage of 20.6 cfs/day / River Gates #2 and #3 combined.
- NPPD attempted to divert all upstream water into canal on certain days in July and August ("sweeping the river").

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

- ***(3) 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:*
- *How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*

The relevant data and calculations are provided under Question 3.

a. *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 losses from Gates #2 and #3 leakage have been determined by using the NDNR's Platte River Gage at Cozad, which is ~2,000 feet downstream of the Dawson County Canal river diversion and verified by NPPD canal operators' visual observation estimate and measured with stream gaging equipment on 8/25/2022. Using the stream gaging measurement of 41.2 cfs and the downstream gaging measurement of 53 cfs on the same day, it was calculated that river gains were 11.8 cfs per 1,000 ft. Since the gates are 1,000 ft upstream of the stream gaging measurement site, gate losses were calculated to be 29.4 cfs (41.2 cfs – 11.8 cfs = 29.4 cfs). Detailed calculations are shown in the response to Question 3.

b. *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?*

Current losses from Gates #2 and #3 leakage have been determined by using the NDNR's Platte River Gage at Cozad, which is ~2,000 feet downstream of the Dawson County Canal river diversion. NDNR operates and maintains the site to industry standards, periodically calibrating the gage with test measurements.

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

The project does not propose the addition of measurement devices.

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

Not applicable.

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

Visual observations of leakage will be recorded and NPPD will take photographs of the current gates showing leakage and the new gates after installation showing no leakage.

NPPD will also be able to review NDNR gage data just downstream of the Dawson County Canal and evaluate reductions as compared to historical times when NPPD was attempting to divert all available water into the canal at the diversion. As noted above in response to question 3, direct field measurement of the gate leakage plus gains was made on 08/25/2022 using stream gaging equipment at an accessible site downstream of the gates on a day where NPPD was attempting to divert all of the available water at the diversion. Similar measurement (FM) will be made after the installation of gates. Then, the downstream gage data (GM) will be used to

calculate river gains. The river gains will then be subtracted from the collected measurements to estimate post-project leakage.

Ideally, the calculation would be zero or close to zero. Visual observations by NPPD estimate that River Gate #1 currently leaks about 30% of total leakage and any work on it is outside of the scope of this project. Thus, it is estimated that post-project leakage calculation will be close to 30% of pre-project leakage calculated above in response to question 3.

The post-project leakage calculation will be as follows:

$$River\ Gains\ (\text{cfs/ft}) = \frac{GM - FM\ (\text{cfs})}{distance\ between\ FM\ and\ FM\ (\text{ft})}$$

$$Post\text{-}project\ leakage\ (\text{cfs}) = FM - [river\ gains\ (\text{cfs/ft}) * distance\ between\ FM\ and\ gates\ (\text{ft})]$$

Finally, the actual water savings can be calculated as:

$$Actual\ water\ savings\ (cfs) = Pre\text{-}project\ leakage\ (cfs) - Post\text{-}project\ leakage(cfs)$$

As shown in response to Question 3, pre-project leakage is calculated as 29.4 cfs. Assuming the project achieves target amount of zero or close to zero leakage from River Gates #2 and #3, the post-project leakage will be close to 30% of pre-project leakage, which is .03*29.4 = 8.84. Thus, the **actual water savings should be close to 29.4 – 8.84 = 20.6 cfs**. This data will be documented and presented in the final project report as part of Task 4.

Evaluation Criterion B – Renewable Energy

Evaluation Sub-Criterion B-1 – Implementing Renewable Energy Projects Related to Water Management and Delivery

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

The project will not increase hydropower capacity but will increase clean hydropower generation as shown below in Question 2.

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

The Dawson County Canal is the downstream-most canal diversion in the central Platte River region, which receives water from the Jeffrey Return and water passing by the Tri-County Diversion. Any water that passes the Dawson County Canal river gates due to leakage is unable to be diverted through a downstream canal and could truly be considered "lost water." Reducing the amount of water which must be returned at CNPPID's Jeffrey Return to the Platte River for Dawson County Canal's use has the auxiliary benefit of allowing CNPPID the ability to use that water to produce hydropower at their J1 and J2 powerplants. NPPD has obtained a conversion

factor of 227 KWh/acre-foot from CNPPID for calculations. The project will conserve **713.8 AF per year** that were lost to leakage using the calculations above. Multiplying the 713.8 AF per of water savings times the conversion factor of 227 KWh/acre-foot equals **162,033 KWh per year of additional clean hydropower**. This additional hydropower will be delivered to the electrical grid using CNPPID's existing power purchase agreement with the Municipal Energy Agency of Nebraska (MEAN) for MEAN's customers in Nebraska, Iowa, Colorado, and Wyoming.

3. ***Describe the status of a mothballed hydropower plant.*** *For projects that are bringing mothballed hydropower capacity back online, please describe the following:*
   - *Clearly describe the work that will be accomplished through the WaterSMART Grant. Note: Normal OM&R activities are not eligible for funding. The work being proposed must be an investment.*
   - *Provide information about the capacity (in kilowatts) of the existing hydro system and the expected capacity once it is brough back on-line.*
   - *Provide information about the duration that the hydro system has been offline and the reasons why it has been mothballed. Please include any regulatory reporting or filings (e.g., FERC filings) or other documentation regarding the system.*

Not applicable.

4. ***Describe any other benefits of the renewable energy project.*** *Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including*:
   - *How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*
   - *Expected environmental benefits of the renewable energy system.*
   - *Any expected reduction in the use of energy currently supplied through a Reclamation project.*
   - *Anticipated benefits to other sectors/entities.*
   - *Expected water needs, if any, of the system.*

According to the U.S. Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator, for every KWh of clean hydropower, 1.6 pounds of carbon dioxide emissions are avoided when compared to coal generation, which is the major generation source in this area of Nebraska (EPA 2024). Therefore, for this project's estimated 162,033 KWh of additional hydropower, one can expect **259,253 pounds of carbon dioxide emissions avoided annually**.

Evaluation Sub-Criterion B-2 – Increasing Energy Efficiency in Water Management

1. *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.*
   - *How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.*

- *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?*
- *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.*
- *Does the calculation include any energy required to treat the water, if applicable?*
- *Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.*
- *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).*

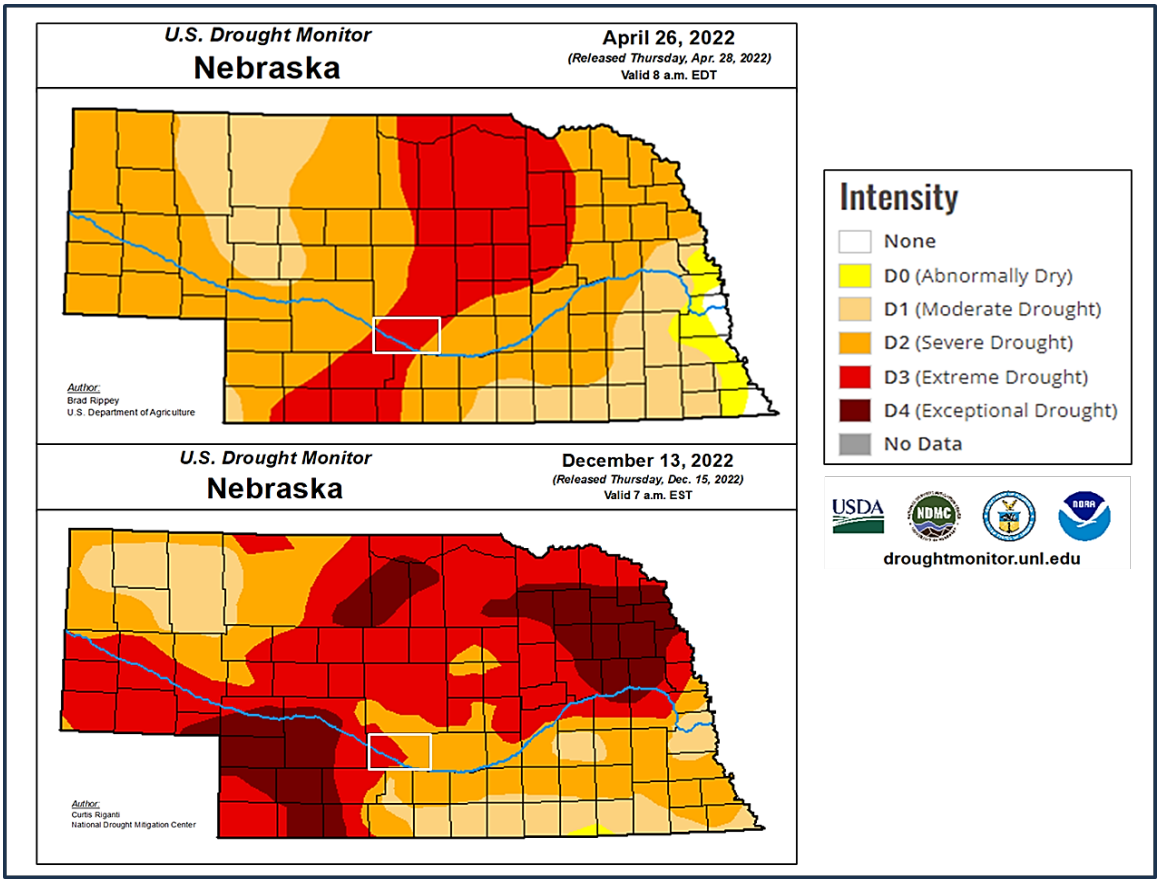
Each trip to the Dawson County Canal from the midpoint of the irrigation service territory is approximately 44 miles. Based on interviews with ditch riders, approximately 93 trips are made during each irrigation season. This results in a total of 44 x 93 = 4,092 miles driven. Assuming an average fuel economy of 23 miles per gallon, these trips use 178 gallons of fuel. According to the EPA Greenhouse Gas Equivalencies Calculator, 178 gallons of gasoline is equivalent to 3487 pounds of carbon dioxide (EPA 2024). Due to the automation of gates, **the project will reduce 4,092 miles driven**, thus **reducing use of fossil fuel and release of 3487 pounds of carbon dioxide** equivalent in greenhouse gases, annually.

Evaluation Criterion C – Other Project Benefits

1. ***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.*
     - *Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?*
     - *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).*

Drought is a regular occurrence in the Platte River basin and extreme drought conditions have been occurring since the early 2000's. In 2022, Dawson County faced 44 weeks of 'Severe Drought' (D2) or greater according to the U.S. Drought Monitor, of which, 11 weeks which were at the 'Extreme Drought' (D3) level. **Figure 9** was generated using the U.S. Drought Monitor mapping tool to illustrate a snapshot of the severity of drought in the region (US Drought Monitor 2022).

Figure 9. Nebraska Drought in 2022



Drought affects the water supplies in the basin in several different ways including direct stress to irrigated cropland and impacts to storage reservoirs upstream, downstream, and in the direct project area. NPPD relies on two primary sources for its surface water supply: (1) natural flows derived from streamflow naturally generated within the basin from earlier rain and snowfall, and (2) storage releases from Lake McConaughy and Sutherland Reservoir, which are both upstream of the project area. Drought tends to limit the amount of water available to these reservoirs, which, in part, have a large impact on the downstream river flow and affects supplies available to irrigators through NPPD canals.

The project is in an area that is experiencing water scarcity and has been deemed "Over Appropriated" by NDNR meaning that there is less water coming into the basin than there are appropriations to take or use this water. These areas are closed to new high-capacity wells and NDNR and the local Natural Resources District, CPNRD in this case, must develop a jointly administered Integrated Management Plan for the region. The goal of this plan is to bring the region back into balance between water use and water supply so that the economic viability as well as the social and environmental health, safety, and welfare of the affected area can be maintained. Better water management and water savings achieved through this project benefits and aligns with the Integrated Management Plan goals and objectives. The project also addresses the drought resiliency concern by reducing losses in the overall water delivery system, taking advantage of excess flow events, and allowing for better timing of diversions across the entire NPPD canal system.

- *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.*

Currently, the canal ditch riders who operate the gates must take frequent trips to make a manual change in the canal headworks since River Gates #2 and #3 are not automated. These trips impact energy sustainability because they require fuel and emit greenhouse gases (carbon dioxide, methane, and nitrous oxide) due to fuel combustion. This can also pose a safety risk during storm events for NPPD employees in wet, dark, and slippery conditions.

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

Each trip to the Dawson County Canal from the midpoint of the irrigation service territory is approximately 44 miles. Based on interviews with ditch riders, approximately 93 trips are made during each irrigation season. This results in **a total of 44 x 93 = 4,092 miles driven**. Assuming an average fuel economy of 23 miles per gallon, these trips use 178 gallons of fuel. Incorporating the current Federal mileage rate of $0.67/mile, this equates to **a cost of $2,741.64**. by automating the gates, the project will reduce 4,092 miles driven, thus reducing use of fossil fuel and release of greenhouse gases. Additionally, this will eliminate safety risks during storm events. It should also be noted that delays in manually opening River Gates #2 and #3 or the inability to access the gates during a severe storm, can lead to flooding of upstream and adjacent properties.

- *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 save ~200–250 labor hours during the irrigation season** by eliminating manual operation of the gates. This will allow water managers more time and flexibility to manage the gate. The saved labor hours will directly go towards more efficient management of the water supply system. Additionally, timely maintenance of the gate can be performed when water managers can quickly view the status of the gate from their computers and mobile phones.

- *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.*
  - *Indicate the quantity of conserved water that will be used for the intended purpose(s).*
  - *Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

The **713.8 AF per year of water conserved** by the project will remain in CNPPID's canal system instead of being released to the river at CNPPID's Jeffrey Return for Dawson County Canal's use. Because it remains in CNPPID's canal system, it will run through their Johnson 1 and Johnson 2 hydropower plants producing an estimated **162,033 additional KWh of clean energy annually**.

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

Not applicable.

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

Water is the lifeblood of the Platte River Basin so there is always competition for this resource. Since agriculture is the primary industry in the region, there are many high-capacity wells and surface water diversions and appropriations to support this industry. As a result, there is high demand for both surface water and groundwater that has resulted in groundwater declines which can impact base stream flows when water resources are hydrologically connected. In the central Platte River region near the project area, NDNR has declared the basin Over Appropriated triggering the development of an Integrated Management Plan and associated controls to bring the region back into balance between water use and water supply.

Prolonged dry conditions and variability in weather patterns has further compounded the problem particularly during the growing season. As this continues, more conflict can result over the limited water resources in the region and could trigger surface water use restrictions administered by NDNR or groundwater allocations overseen by the Natural Resources Districts (NRDs). Any water that can be conserved by this project would be available for other uses such as irrigation, hydropower, and groundwater recharge. Overall, more availability, reliability, and better timing for water would help reduce conflict in the region and this project will help meet this end goal.

2. ***Ecological Benefits.*** *Please provide information regarding how the project will provide ecosystem benefits, including the following:*
   - *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 subject to a recovery or conservation plan under the Endangered Species Act (ESA).*

The Platte River Recovery Implementation Program (PRIPP) currently maintains 10,000 acres of habitat and has a target to restore approximately 29,000 acres of habitat along the Platte River corridor protecting several threatened and endangered species like the Whooping Cranes, Least Tern, Piping Plover, and Pallid sturgeon. Several threatened or endangered species are listed within the Platte River Basin. Additionally, a final Whooping Crane designated Critical Habitat area is located along the Platte River, just 15 miles southeast of the project (**Figure 2**). Other non-PRRIP related species in the area include the American Burying Beetle, Blowout Penstemon, Northern Long-eared Bat, Prairie Bush-clover, and Western Prairie Fringed Orchid.

The Sandhill Crane migration is a major ecotourism event in Nebraska. According to a study by the University of Nebraska-Kearney (UNK) in 2017, the annual Sandhill Crane migration brought in 46,500 visitors and had an economic impact of $14.30 million in central Nebraska (UNK 2017). The project would benefit the Platte River through better water management helping to ensure efficient use and conservation of water supplies in the basin.

- *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.).*

The water savings we have computed will remain in CNPPID's canal system, proceed through their J1 & J2 hydropower plants, and then provide water to CNPPID irrigators.

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

No, it is unlikely for a species listing change due to the result of this project.

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

Not applicable.

3. ***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?*

Replacing the leaking, aging gates with more efficient and automated gates will provide greater control of the system and supports improved water management and better timing during irrigation season. This helps users receive irrigation water at prompt times during drought conditions when rainfall is variable and infrequent, and thus, prevents crop damage. Greater reliability and increased water use efficiency leads to improved resiliency and the ability to withstand dry conditions over long periods and variable weather patterns that have been prevalent in the region in recent years.

Having all gates automated will allow NPPD to take advantage of available excess flow for diversion to use for a multitude of uses including irrigation and additional recharge, which helps replenish the regional aquifer that is used by many residents, producers, and municipalities in the Basin. In this area, surface water and groundwater can be hydrologically connected meaning they influence each other, so any conservation measures can have an impact on reducing groundwater declines and maintaining base stream flows. The project also aligns with the goals and objectives in the Integrated Management Plan aimed at finding a better balance between water use and supply for the region which has been declared Over Appropriated.

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

Not applicable.

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

Yes, the project will directly reduce greenhouse gas emissions by **reducing over 4,000 miles of on-site vehicle travel** for manual operation and maintenance of the gate.

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

Not applicable.

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

Yes, the project also helps prevent damage to upstream properties during storm events. In Nebraska, the climate is highly unpredictable. Just in the past decade, we have seen extremely wet (2019) and dry years (2022). These extreme changes affect the communities adversely by exposure to drought and flooding conditions, thus causing damage and economic losses to

properties The automated gates will allow quicker response on gate operation and thus prevent water from accumulating and flooding onto upstream or adjacent non-NPPD properties.

Evaluation Criterion D – Disadvantaged Communities, Insular Areas, and Tribal Benefits

Evaluation Sub-Criterion D.1 – Disadvantaged Communities

1. *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 lateral canals from Dawson County Canal serve the Cozad, Lexington, Overton, and Elm Creek Nebraska areas. **Lexington is identified as a disadvantaged community on the CEJST**. **Table 2** below lists the categories and rankings for Lexington on the CEJST.

Table 2. Lexington, Nebraska Disadvantaged Community Ranking

Category	Rank	Criteria / Percentile to Qualify
Income Level		
Low Income	68th	Above 65th percentile
Climate Change		
Expected building loss rate	91st	Above 90th percentile
Housing		
Lack of green space	94th	Above 90th percentile
Legacy pollution		
Proximity to risk management plan facilities	91st	Above 90th percentile
Water and Wastewater		
Wastewater discharge	90th	Above 90th percentile
Workforce Development		
Linguistic isolation	92nd	Above 90th percentile
High school education	32%	Above 10%

Additionally, with respect to the additional hydropower benefits described in Evaluation Criterion B, several disadvantaged communities can benefit from the project. The additional hydropower will be delivered to the electrical grid using CNPPID's existing power purchase agreement being delivered to MEAN for their customers. MEAN delivers energy to a total of 36 communities of Nebraska. **According to the CEJST, 14 of the 36 communities are identified as disadvantaged communities in at least one category**. The hydropower generation benefit will benefit these disadvantaged communities.

2. *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 new gates will allow better timing of water diverted or allowed to move downstream in the Platte River and provide the additional surface water irrigation to support agriculture and promote economic growth for the Lexington community. The local economy is heavily

dependent on agriculture and relies on surface water and groundwater in the area. The increased water savings will allow the disadvantaged communities to be more economically resilient in periods of drought by contributing to a more reliable source of water available when needed.

Evaluation Sub-Criterion D.2 – Tribal Benefits

1. *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?*

CNPPID provides electricity from their J-1 and J-2 hydropower plants on a wholesale basis to MEAN. MEAN utilizes the pricing with CNPPID to provide benefits to tribes related to a Benefit Credit Agreement with tribes. This agreement provides tribes with a direct cash benefit as well as the tribes receiving Renewable Energy Credits (RECs) for MEAN's Department of Energy Western Area Power Administration (WAPA) hydropower allocation. The Tribes that benefit from MEAN are the Iowa Tribe of Kansas and Nebraska Kickapoo Tribe, Prairie Band Tribe, and Sac and Fox Tribe.

While CNPPID and MEAN cannot direct individual hydropower plant energy to any particular end-user, including tribal or underserved communities, the project will also benefit them to the extent increased renewable energy is offsetting use of greenhouse gas emitting fossil fuel plants, thus providing resilience to climate change. NPPD recognizes the importance of balancing affordability, reliability/resilience, and sustainability when addressing the business risks related to carbon emissions and emissions regulations. Specifically, the Dawson County Canal gate project will add an estimated additional 162,033 KWh per year of renewable clean hydropower energy to the grid.

2. *Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?*

Not applicable.

3. *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

1. *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.*

Not applicable.

2. *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?*

Not applicable.

3. *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.*

Not applicable.

4. *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.*

See **Figure 2** for a map of the service area.

Evaluation Criterion F – Readiness to Proceed

1. *Identify and provide a summary description of the major tasks necessary to complete the project.*

The project will be divided into four key tasks, starting with engineering planning and ending with technical reporting (**Table 3**). Several milestones within each task are outlined below, but refer to the "Technical Approach" in Section 1.3 PROJECT DESCRIPTION for more details:

Table 3. Major Project Tasks

Task	Activities / Description	Start	End	Responsible Party (L = Lead)
TASK 1: Engineering Planning and Design	• Planning documents • Final Design of gates and SCADA controls • Equipment and materials procurement • Secure permissions	Jan 2025	Aug 2025	NPPD

Task	Activities / Description	Start	End	Responsible Party (L = Lead)
TASK 2: Site Preparation and Communication	• Communication with stakeholders • Mobilization, staging, and site preparation • Monitor weather conditions and conduct safety	Jan 2025	Aug 2025	NPPD

TASK 3: Field Installation	• Construction activities
	  ○ Phase 1 – Removal of manual gates
	  ○ Phase 2 – Foundation preparation
	  ○ Phase 3 – Gate installations
	  ○ Phase 4 – Installation and calibration of SCADA controls
	• Stakeholder updates and continued communication with water users
	• Restoration, clean-up, and demobilization
		Sept 2025	Nov 2025	NPPD (L) + Contractor

TASK 4: Post-installation Testing & Reporting	• Post-installation gate function testing • Post-installation SCADA testing • Interim and financial reporting • Final Technical Report and Webinar • Project Requirement Check-off and close	Oct 2025	May 2026	NPPD

2. *Describe any permits that will be required, along with any process to obtain such permits.*

No permits are anticipated to be required because of exemptions related to the type of work to be conducted for this project, but since the work will be conducted in and near the Platte River, the U.S. Army Corps of Engineers (USACE) and other pertinent authorities have and will again be consulted. The USACE 404 Permit exemption summary reads as follows:

> *"Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(3)), certain discharges for the construction or maintenance of farm or stock ponds or irrigation ditches have been exempted from requiring a Section 404 permit. Included in the exemption are the construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance (but not the construction) of drainage ditches. Discharges associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant and functionally related to irrigation ditches are included in this exemption."*

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

NPPD has already made several site visits, created and reviewed site drawings, evaluated gate design options, and began planning the installation scope of work to complete the gate replacement project. Additionally, NPPD met with representatives of regional BOR offices to discuss environmental, cultural, and permitting considerations.

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

No new policies or administrative actions are necessary. NPPD routinely conducts construction activities similar to this project and has policies and procedures in place for safety, cultural resources, wildlife, and environmental concerns.

5. *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.*

As mentioned, NPPD has already prepared site drawings, evaluated various gate design options, and began planning the installation scope of work including developing a task list, specific activities, and an estimated timeline. Task 1 for this project includes preparation of complete planning documents and engineering design of gates and SCADA controls. A timeline is displayed in the response to question 6.

6. *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?*

The project will be implemented by NPPD staff and consultants/contractors for removal of the existing gates, installation of the new gates, installation and testing of the new SCADA components, and clean-up of the project area. Assuming that BOR funding is awarded in September of 2024 based on the website tracker, a contract is authorized and signed shortly thereafter, and all compliance issues have been addressed, we anticipate commencing project work in early 2025. The gate removal, installation, and testing timeframe falls within late September to late March working period when irrigation season is completed, and the area can be more safely accessed since river flows will be lower and the canal will be empty. This time period also accounts for nesting and roosting periods particularly for the northern long-eared bats, which have been identified in the area.

With reporting requirements, the project should be completed by May 2026, making the total project length 17 months. An estimated schedule including milestones is listed below in **Table 4**, but a more detailed schedule will be developed, if selected funding award.

Table 4. Schedule and Key Milestones

Task	Task/Milestones	Days to Complete	Date Begin	Date End
Task 1	**Engineering Planning & Design**			
	Plan development/approval	43	January 1, 2025	February 28, 2025
	Final design for gate and SCADA	25	March 3, 2025	April 4, 2025
	Equipment procurement	85	April 7, 2025	August 1, 2025
	Secure permissions/NTP	45	June 2, 2025	August 1, 2025
Task 2	**Site Preparation & Communication**			
	Communications with stakeholders	415	January 1, 2025	May 22, 2026
	Mobilization/staging/site prep	20	August 4, 2025	August 29, 2025
	Monitor conditions + Prep meetings	415	January 1, 2025	May 22, 2026
Task 3	**Field Installation – Gate + SCADA**			
	Phase 1 Fieldwork – Gate Removal	5	September 29, 2025	October 3, 2025
	Phase 2 Fieldwork – Foundation Preparation	5	October 6, 2025	October 10, 2025
	Phase 3 Fieldwork – Gate Installation	15	October 13, 2025	October 31, 2025
	Phase 4 Fieldwork – Electrical Installation	15	November 3, 2025	November 21, 2025
	Phase 4 Fieldwork – SCADA Installation and Calibration	15	November 3, 2025	November 21, 2025
	Stakeholder Updates	40	September 29, 2025	November 21, 2025
	Restoration/Clean-up + Demobilization	30	November 24, 2025	January 2, 2026
Task 4	**Post-installation Testing and Reporting**			
	Gate functional testing	25	January 5, 2026	February 6, 2026
	SCADA system testing	25	February 9, 2026	March 13, 2026
	Interim & Financial Reporting	325	March 1, 2025	April 3, 2026
	Final Report and Webinar	25	March 16, 2026	April 17, 2026
	Project Requirement Check-off & Close	25	April 20, 2026	May 22, 2026

Evaluation Criterion G – Collaboration

1. *Please describe how the project promotes and encourages collaboration in a way that helps increase the sustainability of the water supply. 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?*

This project supports and contributes to what others are also doing to ensure sustainability of water resources and resiliency to drought such as those efforts by the CPNRD, NDNR, and Central Nebraska Public Power and Irrigation District (CNPPID), frequent partners in

conservation efforts in the region. Each of these entities have contributed a letter of support for this project indicating their support for greater water savings and use efficiency, increased drought resiliency, and management of river diversions and excess flows. NDNR has also agreed to provide a significant portion of the Non-Federal funding share for this project indicating in their support letter that they view this type of project as an investment in water conservation for the region and state (**Appendix C**). Water resources (surface water and groundwater) transcend political boundaries and support a larger regional community than just the project area and NPPD understands that water savings in the Dawson County Canal benefit the entire basin and many more people.

As discussed in the Evaluation Criterion C section, the project location is in a region that has considerable competition for water resources and frequently experiences prolonged drought conditions including variable rainfall and hot, dry periods. It's imperative that stakeholders work together to leverage resources and efforts to achieve sustainability of water resources and drought resiliency since it impacts so many including the primary economic driver in the region, agriculture. This area is also deemed Over Appropriated requiring the implementation of an Integrated Management Plan to create a balance between water uses and water supplies so that the economic viability, as well as the social and environmental health, safety, and welfare of the affected area can be maintained. This is accomplished through conservation, drought planning, incentive programs, as well as regulation when necessary. This project supports those conservation goals and efforts to conserve and save water while supporting economic growth and development including increased power generation potential for one of our partners, CNPPID.

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

Collaboration is necessary and a common way of doing business in the region including working on conservation and management of natural resources. Individually, projects such as this one can have an impact on conserving water resources, but collectively, the many efforts of stakeholders and partners can have a very significant impact. Working together allows NPPD to scale up the benefits and leverage limited resources for greater regional impact including water savings, economic development, power generation, groundwater recharge, flood control, and drought resiliency. Each of the stakeholders in the area bring a valuable set of skills, resources, and knowledge that when combined lead to greater benefits and helps to reduce conflict between competing and diverse interests. The savings from this project will not only directly improve operations and efficiencies for the Dawson County Canal but will contribute to a larger effort to conserve water and support common goals of our partners and other stakeholders in the region.

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

Yes, NPPD is Nebraska's largest power generator in Nebraska and manages a large intricate network of irrigation canals and reservoirs that serve a large area and interact with or overlap geographic service areas of other irrigation, power, and natural resources districts. In many cases, these regional partners and stakeholders rely on the same water supplies and jointly cooperate on regional water resources management and hydraulic operations. Better managed and timed diversions and use of excess flow will benefit everyone in the region for greater drought resiliency, flood control, and additional water available for irrigation, power generation, groundwater recharge, and aquatic habitat.

Several stakeholders have expressed support for improvements to the existing facilities of NPPD including CNPPID, CPNRD, and NDNR (**Appendix B** – Letters of Support and **Appendix C** – Letter of Funding Commitment). The upgrade in the river gates and automation with SCADA controls would be an opportunity to show that NPPD prioritizes efficiency in water use management, and the benefits would transcend beyond the Dawson County Canal. Investing in the infrastructure upgrades would set an example for other neighboring districts and the water users to commit to water conservation.

- *Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

Yes, the Dawson County Canal already serves multiple sectors and water users in the region, so improvements to timing and operation of diversions would add to existing benefits. As an irrigation canal, the project will directly benefit surface water irrigation and the agricultural sector, but also provides groundwater recharge benefits. Efficiency in the canal system helps support hydropower generation, which serves many industrial, municipal, and residential customers. The gate automation directly provides water conservation benefits through more efficient and timely operations, which directly helps the environmental sector by supporting fish and wildlife habitat such as riverine, riparian, and wetlands habitats. In addition to the essential role the water plays in irrigating farmland and generating electricity in the area, the regional reservoir system and Platte River flows provide fishing, hunting, wildlife viewing, and boating opportunities for all Nebraskans. Overall, as more water is available and timing of flow is better managed, all these sectors can benefit from both additional flow and better-timed flow.

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

Letters of support from CNPPID, CPNRD, and NDNR are included in **Appendix B** and a letter of funding commitment is provided from NDNR in **Appendix C**.

Evaluation Criterion H – Nexus to Reclamation

1. *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, NPPD does not have a water service repayment or O&M 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, NPPD does not receive Reclamation water.

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

Although there are no active Reclamation projects or sites in or near the project area, the benefits of this project support and align with the goals of Reclamation's multi-state "*High Plains States Groundwater Recharge Demonstration Program*" that included Nebraska and several sites near the project priority areas. The goal of this BOR Program is to conserve water in the High Plains Aquifer, the same principal aquifer that underlies the project area, and will benefit from groundwater conservation efforts resulting from this project.

- *Is the applicant a Tribe?*

No, the applicant is not a Tribe.

1.5 PERFORMANCE MEASURES

Water savings will be quantified by collecting flow measurements at the measurement site located 1,000 ft downstream from the gates and with gage measurements at the NDNR river gaging site located 2,000 ft downstream. As noted above in response to Question 3, Evaluation Criterion A, direct field measurement of the gate leakage plus gains was made on 8/25/2022 using stream gaging equipment at an accessible site downstream of the gates on a day where NPPD was attempting to divert all of the available water at the diversion ("seeping of the river"). Similar field measurements will be made after the installation of gates (FM). Then, the downstream gage data (GM) will be used to calculate river gains. The following set of equations will be used to calculate river gains, post-project leakage, and actual water savings.

$$River\ Gains\ (\text{cfs/ft}) = \frac{GM - FM\ (\text{cfs})}{distance\ between\ FM\ and\ FM\ (\text{ft})}$$

$$Post\text{-}project\ leakage\ (\text{cfs}) = FM - [river\ gains\ (\text{cfs/ft}) * distance\ between\ FM\ and\ gates\ (\text{ft})]$$

$$Actual\ water\ savings\ (cfs) = Pre\text{-}project\ leakage\ (cfs) - Post\text{-}project\ leakage(cfs)$$

Reduction of gate leakage can also be visually confirmed if gate leakage is observed to be reduced to zero or near zero.

Additionally, Task 4 of the project includes the testing of SCADA controls and ensuring that the gate is operating as desired. Performance and success of project will be determined by successful operation of the gates, ability to operate the gates remotely, and evaluation of actual water savings. These metrics will be documented in the final report.

2. BUDGET NARRATIVE

2.1 FUNDING PLAN AND LETTERS OF COMMITMENT

The total proposed project budget is $658,092 (see SF-424A) with a 50% Federal cost share rate, NPPD will provide $32,905 in cash contributions and $296,141 through a Water Resources Cash Fund grant from NDNR for a total of $329,046 Non-Federal contribution (**Appendix C**). **Table 5** summarizes Non-Federal and Federal sources of funding for the proposed project.

Table 5. Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Nebraska Public Power District	$ 32,905
2. Nebraska Department of Natural Resources	$ 296,141
Non-Federal Subtotal	**$ 329,046**
REQUESTED RECLAMATION FUNDING	**$ 329,046**
TOTAL PROJECT FUNDING	**$ 658,092**

2.2 BUDGET PROPOSAL

NPPD proposes to apply all Federal and Non-Federal funds that may be associated with the grant agreement to funding the implementation of the Dawson County Canal River Gate Upgrade and Automation Project. A summary of the funding amounts and percentages is presented in **Table 6 6**. The Budget Summary presented in **Table 7** has been prepared using the prescribed outline from the NOFO and shows individual and aggregated costs.

Table 6. Project Funding Amounts and Percentages

FUNDING SOURCES	AMOUNT	PERCENTAGE
Costs to be reimbursed with the requested Federal funding	$ 329,046	50%
Costs to be paid by the applicant	$ 32,905	5%
Costs to be paid by NDNR – Cash Contribution	$ 296,141	45%
TOTAL PROJECT COST	**$ 658,092**	**100%**

Table 7. Budget Summary – Aggregate of Project Costs

BUDGET ITEM DESCRIPTION	COST $/Unit	QUANTITY	QUANTITY TYPE	TOTAL COST
Salaries and Wages			**Aggregated cost**	**$ 78,455.95**
• Irrigation Tech	$ 46.48	700	Rate	$ 32,534.04
• Civil Tech	$ 46.48	150	Rate	$ 6,971.58
• Mech & Elec Tech	$ 47.03	600	Rate	$ 28,218.30
• Surveyor	$ 52.56	10	Rate	$ 525.64
• Prof Labor	$ 61.97	150	Rate	$ 9,295.44
• Technician	$ 22.77	40	Rate	$ 910.80
Fringe Benefits			**Aggregated cost**	**$ 63,340.45**
• Irrigation Tech	$ 37.52	700	Rate	$ 26,265.96
• Civil Tech	$ 37.52	150	Rate	$ 5,628.42
• Mech & Elec Tech	$ 37.97	600	Rate	$ 22,781.70
• Surveyor	$ 42.44	10	Rate	$ 424.37
• Prof Labor	$ 50.03	150	Rate	$ 7,504.56
• Technician	$ 18.39	40	Rate	$ 735.60
Equipment			**Aggregated cost**	**$ 15,295.85**
• Pick-ups/SUVs	$ 20.09	300	Rate	$ 6,027.00

BUDGET ITEM DESCRIPTION	COST $/Unit	QUANTITY	QUANTITY TYPE	TOTAL COST
• Heavy Duty Trucks	$ 71.07	20	Rate	$ 1,421.40
• Med Duty Trucks	$ 49.96	30	Rate	$ 1,498.80
• Bobcat/Loader	$ 39.66	30	Rate	$ 1,189.80
• Dozer	$ 197.07	15	Rate	$ 2,956.05
• Excavators	$ 63.76	15	Rate	$ 956.40
• Loader/Backhoe	$ 40.17	20	Rate	$ 803.40
• 12K-20K w/o Air Brakes	$ 24.21	10	Rate	$ 242.10
• Survey Vehicle	$ 20.09	10	Rate	$ 200.90
Supplies and Materials			**Aggregated cost**	**$ 411,000.00**
• Wilco Gate	$ 150,000.00	2	Each	$ 300,000.00
• United Lift	$ 1,000.00	2	Each	$ 2,000.00
• Wilco Actuators Equipment	$ 30,000.00	2	Each	$ 60,000.00
• Troyers Walkway	$ 15,000.00	2	Each	$ 30,000.00
• Electrical Panel Components	$ 8,000.00	1	Each	$ 8,000.00
• Hardware + Misc Equipment	$ 6,000.00	1	Batch	$ 6,000.00
• SCADA Components	$ 5,000.00	1	Each	$ 5,000.00
Contractual/Construction			**Aggregated cost**	**$ 90,000.00**
• Safeway Scaffolding	$ 13,000.00	1	Each	$ 13,000.00
• Troyers Walkway Installation	$ 7,000.00	2	Each	$ 14,000.00
• Troyers Crane Work	$ 15,000.00	1	Each	$ 15,000.00
• Concrete Saw & Core Cutting	$ 15,000.00	1	Each	$ 15,000.00
• Electrical Panel Installation	$ 8,000.00	1	Each	$ 8,000.00
• Midlands – River Diversion	$ 25,000.00	1	Each	$ 25,000.00
Env & Cultural Compliance Costs				**$ -**
Other				**$ -**
TOTAL DIRECT COSTS				**$ 658,092**
Indirect Costs				**$ -**
TOTAL ESTIMATED PROJECT COSTS				**$ 658,092**

2.3 BUDGET NARRATIVE

a. *Salaries and Wages*

Chris Derickson, NPPD Maintenance and Construction Manager, and Randy Zach, NPPD Water Resources Advisor, will provide overall administration and oversight of the project on behalf of NPPD including overall project management and reporting. NPPD technical, surveying, drafting and other professional labor and technical personnel will track their time for this project in a specific capital project account. Accordingly, these anticipated expenses are listed under "Salaries and Wages" in **Table 7** using the rates and hours listed.

b. *Fringe Benefits*

Fringe benefits associated with project work by NPPD staff are included to determine costs for this category and listed under "Fringe Benefits" in **Table 7** using the rates and hours indicated.

c. *Equipment*

Includes equipment expenses related to vehicles and construction machinery use necessary to remove old gates, install the two new gates, and install the SCADA and electrical components. No equipment is anticipated to be purchased for this project and most is already owned by NPPD or will be rented. Quantities, rates, and total costs are listed in **Table 7**. Any additional equipment for removal of the existing gates and installation of the new gates will be included in in the "Contractual/Construction" category.

d. *Materials and Supplies*

Materials or supplies needed for this project including, but not limited to two new gates, lifts, actuators, walkways, electrical panel, grout, hardware, form boards, wiring, conduit or other materials for removal and installation of the gate, and SCADA components. Quantities, rates, and total costs are listed in **Table 7**. Some materials including water diversion material will be a part of a contract with an external contractor and included under the "Contractual/Construction" category.

Additionally, acquisition of office supplies needed for the project will be a general operating expense of NPPD that will take place outside of the grant agreement and these costs have not been included in **Table 7**.

e. *Contractual/Construction*

Due to the specialized nature of the project, NPPD will hire contractors to assist with some of lifting for the removal and installation of the new slide gates and related components. Contractors will be used for the river water diversion efforts required during the project's construction phase. Equipment, materials, supplies, and other related costs acquired and handled by the contractors will be included in this category. In accordance with NPPD policies, contractors will be selected that meet qualifications and experience requirements. Multiple contracts (5) are expected, totaling an estimated **$90,000**, will be executed for the implementation of this project to divert the river water, remove and dispose of the existing gate, install the new gate, restore any disturbed areas, and other related costs. Quantities, rates, and total costs are listed in **Table 7**.

f. *Consulting Services*

All engineering, technical, and surveying services will be conducted by NPPD staff, and these costs are included in 'Salaries and Wages,' so no amount is included in this category.

g. *Third-Party In-Kind Contributions*

No third-party in-kind contributions are budgeted for this project.

h. *Environmental and Regulatory Compliance Costs (as applicable to the project)*

The project will be implemented in an area that was previously disturbed to install the existing gates in the 1980s. No additional areas are anticipated to be disturbed for this project and all access roadways currently are in place. Therefore, no environmental and regulatory compliance costs have been budgeted for this project in **Table 7**. NPPD had a call with BOR personnel from the McCook, NE BOR Office, and the Missouri Basin Regional Office on 01/25/2024 to discuss environmental and cultural compliance issues. Although no specific items were identified at that time, NPPD will work with BOR if any are identified upon award and will cooperate in meeting all compliance issues as required.

i. *Other Expenses*

All project expenses are included in the cost items described above. Therefore, no costs are associated with this budget category in **Table 7**.

j. *Indirect Costs*

No indirect costs are budgeted for this project; thus, no costs are included in **Table 7**.

k. *Total Costs*

The total budget for the project is estimated at **$658,092**, with **$329,046 in requested grant funds** (Federal cost-share) and **$329,046 in Non-Federal** cost-share funds to be contributed by NPPD and NDNR. NPPD has pledged $32,905 and NDNR has agreed to contribute $296,141 for the Non-Federal share. The total Federal cost-share requested is 50 percent of total project costs with the remaining 50 percent provided by the applicant as required in the NOFO.

3. ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Proposed project activities are not anticipated to require environmental or cultural resources compliance through the National Environmental Policy Act. A final Whooping Crane designated Critical Habitat area is located along the Platte River within 15 miles southeast of the project location and is illustrated in **Figure 2**. The replacement and upgrade of the two river gates on the Dawson County Canal as proposed in this grant application will not affect any species listed or proposed to be listed as a Federal endangered or threatened species or designated critical habitat.

As a precursor for this project and anticipation of grant funding through the WEEG Program, NPPD had a conference call with Josh Neuffer and other colleagues from the McCook, NE BOR office, and Marlena Lanini Missouri Basin Regional Coordinator with the Montana BOR office to discuss the project and environmental and cultural compliance issues. In this discussion, no specific issues were identified, but several areas were mentioned to be aware of including NEPA, NHPA, ESA, 404 Permits, USFWS requirements, and others. BOR representatives stated that the regional offices will be ones to help and coordinate any compliance work once an award is made and a grants manager will be assigned. Based on other similar projects reviewed on the WaterSMART website, compliance requirements are anticipated to be minimal, so no budget amount has been added for this category.

The Buy America Domestic Procurement Preference (BABA) requirements were also discussed. Because the project is requesting over $250,000 in federal funds, it does exceed the Simplified

Acquisition Threshold (SAT) of $250,000.00 and would be subject to any requirements. NPPD has worked to identify sources that meet BABA requirements since the project will require purchase of replacement gates, related equipment and infrastructure, and SCADA components that may be subject to BABA provisions. NPPD will work with the BOR to ensure all BABA requirements are met if an award is made for this project.

1. *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

The proposed project will remove the existing manual gates and upgrade them with automated gates in an area that has already been disturbed in the past for initial installation and subsequent upgrades. New project work is not anticipated to adversely affect the air, water, or animal habitat in the area since access will occur using existing roadways and necessary controls will be put in place to control erosion and to maintain flows and typical conditions. NPPD will comply with any requests from state or federal agencies including BOR, USACE, the U.S. Fish and Wildlife Service, and others as determined in any environmental reviews or assessments.

2. *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?*

Several threatened or endangered species have been identified within the Platte River Basin including the American Burying Beetle, Blowout Penstemon, Northern Long-eared Bat, Least Tern, Piping Plover, Pallid sturgeon, Prairie Bush-clover, and Western Prairie Fringed Orchid. Additionally, a Critical Habitat area for Whooping Crane designated is located along the Platte River, just 15 miles southeast of the project (**Figure 2**) extending along the Platte River. The areas or any species would not be affected by any activities associated with the project and NPPD will plan around any migration, nesting, or roosting times and limit work to the time period of September 15 to April 1 each season.

3. *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.*

We are not aware of any wetlands that would fall under the CWA jurisdiction. The new gates will replace existing gates in an area that was previously disturbed for initial construction and access roads are already in place. Once selected, NPPD will work closely with our contracting officer and BOR representatives assigned to our project to make a determination for any required permitting or other environmental compliance requirements. Any consultant hired for work on this project will be informed of any requirements and will be overseen by NPPD personnel.

4. *When was the water delivery system constructed?*

The Dawson Canal System was initially constructed in 1894 and various modifications, repairs, and annual maintenance have been made since that time to continue operations.

5. *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.*

Yes, the project will upgrade two existing, manual irrigation canal river diversion gates. The river diversion was initially constructed in the early 1900's without concrete supports. The first concrete support structure was installed in the early 1960's and used timber "duck boards" for damming up the river. The concrete support structure was retrofitted in the 1980's with the removal of the "duck board" system and installation of the existing steel slide gates and hoist system.

6. *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.*

None that we are aware of at this time.

7. *Are there any known archeological sites in the proposed project area?*

None that we are aware of at this time.

8. *Will the proposed project have a disproportionate and adverse effect on any communities with environmental justice concerns?*

No.

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

No.

10. *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.

4. REQUIRED PERMITS OR APPROVALS

No approvals or permits are anticipated to be required for this project, but NPPD will consult with local, state, and federal authorities as necessary prior to any commencement of work to confirm. Although this work will be performed in the Platte River channel, NPPD has performed similar type of work in the past and it was determined that it falls under a U.S. Army Corps of Engineers (USACE) 404 Permit exemption and does not require a 404 permit. A summary of this exemption is included below:

> *"Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(3)), certain discharges for the construction or maintenance of farm or stock ponds or irrigation ditches have been exempted from requiring a Section 404 permit. Included in the exemption are the construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance (but not the construction) of drainage ditches. Discharges associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant and functionally related to irrigation ditches are included in this exemption."*

5. OVERLAP OR DUPLICATION OF EFFORT STATEMENT

There is no overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. 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 Federal or Non-Federal funding source.

6. CONFLICT OF INTEREST DISCLOSURE STATEMENT

No conflict of interest exists at the time of this submission.

7. UNIFORM AUDIT REPORTING STATEMENT

NPPD acknowledges the requirement for a Single Audit Report and has/will continue to comply with this requirement. NPPD does not meet the threshold of expending $750,000 USD or more in Federal award funds in the applicant's fiscal year that requires a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System and was not required to submit a Single Audit report for the most recently closed fiscal year.

8. CERTIFICATION REGARDING LOBBYING

Applicants requesting more than $100,000 in Federal funding must certify to the statements in 43 CFR §18, Appendix A. If this application requests more than $100,000 in Federal funds, the authorized official's signature on the appropriate SF-424 form also represents the applicant's certification of the statements in 43 CFR § 18, Appendix A.

NPPD will comply with any required certification as indicated by NPPD's authorized representative's signature since the request is greater than $100,000.

9. SF-LLL: DISCLOSURE OF LOBBYING ACTIVITIES

Not applicable. NPPD has **not** made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action.

10. LETTERS OF SUPPORT

Letters of support have been provided by CNPPID, CPNRD, and NDNR (**Appendices B** and **C**). These organizations have been long-term partners with NPPD and have collaborated to help best manage water resources in the region. The project provides particular benefit to NDNR, complementing their efforts to balance water use with supplies and move the region from Over Appropriated to a Fully Appropriated or better condition.

11. LETTER OF PARTNERSHIP

Not applicable. NPPD is a Category A applicant.

12. OFFICIAL RESOLUTION

NPPD will be the agency responsible for administering the grant award. NPPD has committed existing budget resources to ensure the financial and legal obligations associated with receiving Federal financial assistance through the WaterSMART Water and Energy Efficiency Grants

FY24 will be met. After the project is selected for award, NPPD will provide an official resolution to indicate this commitment.

13. LETTER OF FUNDING COMMITMENT

If a project is selected for award under this funding opportunity and cost share funding is anticipated to be provided by a source other than the applicant, the third-party cost share must be supported with letters of commitment prior to award. Letters of commitment should identify the following elements:

- *The amount of funding commitment*
- *The date the funds will be available to the applicant*
- *Any time constraints on the availability of funds*
- *Any other contingencies associated with the funding commitment*

Cost-share funding from sources outside the applicant's organization (e.g., loans or State grants) should be secured and available to the applicant prior to award.

Reclamation will not execute a financial assistance agreement until non-Federal funding has been secured or Reclamation determines that there is enough evidence and likelihood that non-Federal funds will be available to the applicant after executing the agreement.

NPPD's funding partner for the project, NDNR, has provided a signed letter to indicate this commitment of $296,141 and it is included in **Appendix C**.

APPENDIX A: References

- University of Nebraska-Kearney. 2017. The Economic Impact of the Annual Crane Migration on Central Nebraska. https://unknews.unk.edu/wp-content/uploads/2017/07/Crane-Economic-Impact-Study.pdf

- U.S. Environmental Protection Agency. 2024. Greenhouse Gas Equivalencies Calculator. https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

- U.S. Drought Monitor. 2024. Map Archives. https://droughtmonitor.unl.edu/Maps/MapArchive.aspx

APPENDIX B: Letters of Support

415 Lincoln St.
P.O. Box 740
Holdrege, NE 68949-0740

CENTRAL
Nebraska Public Power and Irrigation District

Phone: (308) 995-8601
Fax: (308) 995-5705
Web: www.cnppid.com

January 24, 2024

Randy Zach
Nebraska Public Power District
P.O. Box 499
1414 15th St
Columbus, NE 68602-0499

Re: Nebraska Public Power District's WaterSMART Water & Energy Efficiency Grant Application for Upgrades to the Dawson County Canal

Dear Randy:

The Central Nebraska Public Power and Irrigation District ("Central") supports the grant application of Nebraska Public Power District ("NPPD") for installing river gate upgrades on the Dawson County Canal. The better water management opportunities provided by these upgrades will result in water savings, increased drought protection, and better use of excess flows.

Central's and NPPD's systems significantly interact with one another, including overlapping geographic areas, relying on some of the same water supplies, and jointly coordinating hydraulic operations. Central believes that the benefits from the project will be valuable to the two district's interrelated operations.

Sincerely,

Devin Brundage
General Manager

Central Platte Natural Resources District
215 Kaufman Ave Grand Island NE 68803
T: (308) 385-6282 F: (308) 385-6285
www.cpnrd.org

January 25, 2024

Randy Zach
Nebraska Public Power District
P.O. Box 499 1414 15th St
Columbus, NE 68602-0499

Re: NPPD WaterSMART Water & Energy Efficiency Grant Application

Dear Mr. Zach,

The Central Platte Natural Resources District (CPNRD) supports Nebraska Public Power District's (NPPD) WaterSMART grant application being submitted to the Bureau of Reclamation in February 2024.

I understand the benefits the proposed project provides to the CPNRD related to:

1. Better management of water will help save storage water.
2. Drought protection by reducing water passing the Dawson County Canal, making water available for other beneficial uses.
3. Better use of water for agricultural purposes.

The CPNRD supports the efforts of NPPD as they seek funding for these projects.

Sincerely,

Lyndon Vogt
General Manager
Central Platte Natural Resources District

Nebraska's NRDs: • Protecting Lives • Protecting Property • Protecting the Future

NEBRASKA

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

Jim Pillen, Governor

February 12, 2024

Randy Zach, Water Resources Advisor
Nebraska Public Power District
1414 15th Street, PO Box 499
Columbus, NE 68602-0499

Dear Randy:

Please consider this letter a formal expression of support and commitment from the Nebraska Department of Natural Resources (Department) to provide up to $296,141 of matching state funding for the Nebraska Public Power District's (District) Bureau of Reclamation WaterSMART grant application for the Dawson County Canal River Gate Upgrade and Automation.

The Department views this type of project as an investment in water conservation, drought protection, increased clean hydropower generation, and helps move the basin from an over appropriated condition into a fully appropriated condition. The Department's current plans pertaining to the project area include an integrated management plan and the Upper Platte Basin-Wide Plan. These two documents both recognize the benefits of the types of activities this grant will help to fund and aim to support shared goals aimed at the long-term sustainability of irrigation uses in the basin.

Should your grant application be approved, Department staff will work with you to develop a contract that implements this financial commitment. Once again, the Department fully supports your District's efforts to reduce the amount of water that bypasses the Dawson County Canal headworks. The Department appreciates your District's efforts in working to support the state's integrated management plan and Basin-Wide plan goals.

Sincerely,

Thomas E. Riley

Thomas E. Riley, P.E., Director

Thomas E. Riley, P.E., Director

Department of Natural Resources
245 Fallbrook Blvd., Suite 201
Lincoln, Nebraska 68521-6729

OFFICE 402-471-2363
FAX 402-471-2900

dnr.nebraska.gov

APPENDIX C: Letter of Funding Commitment

NEBRASKA

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

Jim Pillen, Governor

February 12, 2024

Randy Zach, Water Resources Advisor
Nebraska Public Power District
1414 15th Street, PO Box 499
Columbus, NE 68602-0499

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Should your grant application be approved, Department staff will work with you to develop a contract that implements this financial commitment. Once again, the Department fully supports your District's efforts to reduce the amount of water that bypasses the Dawson County Canal headworks. The Department appreciates your District's efforts in working to support the state's integrated management plan and Basin-Wide plan goals.

Sincerely,

Thomas E. Riley

Thomas E. Riley, P.E., Director

Thomas E. Riley, P.E., Director

Department of Natural Resources
245 Fallbrook Blvd., Suite 201
Lincoln, Nebraska 68521-6729

OFFICE 402-471-2363
FAX 402-471-2900

dnr.nebraska.gov

Dawson County Canal River Gates Upgrade and Automation Project

February 22, 2024

WaterSMART—Water and Energy Efficiency Grant Program Application

NOFO: R24AS00052

Fiscal Year 2024

Bureau of Reclamation

BUDGET NARRATIVE

Applicant:

Nebraska Public Power District

1414 15th Street, Columbus NE 68602-0499

Contact: Randy Zach, Water Advisor

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BUDGET NARRATIVE

As required for this NOFO, the Budget Narrative for the Dawson County Canal River Gates Upgrade and Automation Project application has been broken out for submission. Categories are described below and in **Tables 1, 2, and 3** at the end of this document, which summarize the dollar amounts for Federal and Non-Federal Funding Sources (**Table 1**), Project Amounts and Percentages (**Table 2**), and Aggregated Project Costs (**Table 3**). These tables are also included in the project application and numbered as Tables 5, 6, and 7, respectively.

a. *Salaries and Wages*

Chris Derickson, NPPD Maintenance and Construction Manager, and Randy Zach, NPPD Water Resources Advisor, will provide overall administration and oversight of the project on behalf of NPPD including overall project management and reporting. NPPD technical, surveying, drafting and other professional labor and technical personnel will track their time for this project in a specific capital project account. Accordingly, these anticipated expenses are listed under "Salaries and Wages" in **Table 3** using the rates and hours listed.

b. *Fringe Benefits*

Fringe benefits associated with project work by NPPD staff are included to determine costs for this category and listed under "Fringe Benefits" in **Table 3** using the rates and hours indicated.

c. *Equipment*

Includes equipment expenses related to vehicles and construction machinery use necessary to remove old gates, install the two new gates, and install the SCADA and electrical components. No equipment is anticipated to be purchased for this project and most is already owned by NPPD or will be rented. Quantities, rates, and total costs are listed in **Table 3**. Any additional equipment for removal of the existing gates and installation of the new gates will be included in in the "Contractual/Construction" category.

d. *Materials and Supplies*

Materials or supplies needed for this project including, but not limited to two new gates, lifts, actuators, walkways, electrical panel, grout, hardware, form boards, wiring, conduit or other materials for removal and installation of the gate, and SCADA components. Quantities, rates, and total costs are listed in **Table 3**. Some materials including water diversion material will be a part of a contract with an external contractor and included under the "Contractual/Construction" category.

Additionally, acquisition of office supplies needed for the project will be a general operating expense of NPPD that will take place outside of the grant agreement and these costs have not been included in **Table 3**.

e. *Contractual/Construction*

Due to the specialized nature of the project, NPPD will hire contractors to assist with some of lifting for the removal and installation of the new slide gates and related components. Contractors will be used for the river water diversion efforts required during the project's construction phase. Equipment, materials, supplies, and other related costs acquired and handled by the contractors will be included in this category. In accordance with NPPD policies, contractors will be selected that meet qualifications and experience requirements. Multiple contracts (5) are expected, totaling an estimated **$90,000**, will be executed for the

implementation of this project to divert the river water, remove and dispose of the existing gate, install the new gate, restore any disturbed areas, and other related costs. Quantities, rates, and total costs are listed in **Table 3**.

f. *Consulting Services*

No third-party in-kind contributions are budgeted for this project.

g. *Third-Party In-Kind Contributions*

No third-party in-kind contributions are budgeted for this project.

h. *Environmental and Regulatory Compliance Costs (as applicable to the project)*

The project will be implemented in an area that was previously disturbed to install the existing gates in the 1980s. No additional areas are anticipated to be disturbed for this project and all access roadways currently are in place. Therefore, no environmental and regulatory compliance costs have been budgeted for this project in **Table 3**. NPPD had a call with BOR personnel from the McCook, NE BOR Office and the Missouri Basin Regional Office on 01/25/2024 to discuss environmental and cultural compliance issues. Although no specific items were identified at that time, NPPD will work with BOR if any are identified upon award and will cooperate in meeting all compliance issues as required.

i. *Other Expenses*

All project expenses are included in the cost items described above. Therefore, no costs are associated with this budget category in **Table 3**.

j. *Indirect Costs*

No indirect costs are budgeted for this project; thus, no costs are included in **Table 3**.

k. *Total Costs*

The total budget for the project is estimated at **$658,092**, with **$329,046 in requested grant funds** (Federal cost-share) and **$329,046 in Non-Federal** cost-share funds to be contributed by NPPD and NDNR. NPPD has pledged $32,905 and NDNR has agreed to contribute $296,141 for the Non-Federal share. The total Federal cost-share requested is 50 percent of total project costs with the remaining 50 percent provided by the applicant as required in the NOFO.

FUNDING PLAN AND BUDGET PROPOSAL

The total proposed project budget is $658,092 (see SF-424A and C) with a 50% Federal costshare rate. NPPD will provide a $32,905 contribution (5%) for the Non-Federal share and the Nebraska Department of Natural Resources (NDNR) will provide a $296,141 contribution (45%) for the remainder of the 50% Non-Federal costshare amount.

Table 1 summarizes Non-Federal and Federal Funding Sources. **Table 2** summarizes Non-Federal and Federal Funding Amounts and Percentages. NDNR has provided a combined Letter of Support and Funding Commitment that is included with the full application.

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

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Nebraska Public Power District	$ 32,905
2. Nebraska Department of Natural Resources	$ 296,141
Non-Federal Subtotal	**$ 329,046**
REQUESTED RECLAMATION FUNDING	**$ 329,046**
TOTAL PROJECT FUNDING	**$ 658,092**

Table 2. Project Funding Amounts and Percentages

FUNDING SOURCES	AMOUNT	PERCENTAGE
Costs to be reimbursed with the requested Federal funding	$ 329,046	50%
Costs to be paid by the applicant	$ 32,905	5%
Costs to be paid by NDNR – Cash Contribution	$ 296,141	45%
TOTAL PROJECT COST	**$ 658,092**	**100%**

Table 3 on the following pages provides a Budget Summary and Aggregate of Costs including individual costs per category, rates, and quantities. Details of each category can be found on pp. 1 and 2 of this document.

Table 3. Budget Summary – Aggregate of Project Costs

BUDGET ITEM DESCRIPTION	COST $/Unit	QUANTITY	QUANTITY TYPE	TOTAL COST
Salaries and Wages			**Aggregated cost**	**$ 78,455.95**
• Irrigation Tech	$ 46.48	700	Rate	$ 32,534.04
• Civil Tech	$ 46.48	150	Rate	$ 6,971.58
• Mech & Elec Tech	$ 47.03	600	Rate	$ 28,218.30
• Surveyor	$ 52.56	10	Rate	$ 525.64
• Prof Labor	$ 61.97	150	Rate	$ 9,295.44
• Technician	$ 22.77	40	Rate	$ 910.80
Fringe Benefits			**Aggregated cost**	**$ 63,340.45**
• Irrigation Tech	$ 37.52	700	Rate	$ 26,265.96
• Civil Tech	$ 37.52	150	Rate	$ 5,628.42
• Mech & Elec Tech	$ 37.97	600	Rate	$ 22,781.70
• Surveyor	$ 42.44	10	Rate	$ 424.37
• Prof Labor	$ 50.03	150	Rate	$ 7,504.56
• Technician	$ 18.39	40	Rate	$ 735.60
Equipment			**Aggregated cost**	**$ 15,295.85**
• Pick-ups/SUVs	$ 20.09	300	Rate	$ 6,027.00
• Heavy Duty Trucks	$ 71.07	20	Rate	$ 1,421.40
• Med Duty Trucks	$ 49.96	30	Rate	$ 1,498.80
• Bobcat/Loader	$ 39.66	30	Rate	$ 1,189.80
• Dozer	$ 197.07	15	Rate	$ 2,956.05
• Excavators	$ 63.76	15	Rate	$ 956.40
• Loader/Backhoe	$ 40.17	20	Rate	$ 803.40
• 12K-20K w/o Air Brakes	$ 24.21	10	Rate	$ 242.10
• Survey Vehicle	$ 20.09	10	Rate	$ 200.90
Supplies and Materials			**Aggregated cost**	**$ 411,000.00**
• Wilco Gate	$ 150,000.00	2	Each	$ 300,000.00
• United Lift	$ 1,000.00	2	Each	$ 2,000.00

BUDGET ITEM DESCRIPTION	COST $/Unit	QUANTITY	QUANTITY TYPE	TOTAL COST
• Wilco Actuators Equipment	$ 30,000.00	2	Each	$ 60,000.00
• Troyers Walkway	$ 15,000.00	2	Each	$ 30,000.00
• Electrical Panel Components	$ 8,000.00	1	Each	$ 8,000.00
• Hardware + Misc Equipment	$ 6,000.00	1	Batch	$ 6,000.00
• SCADA Components	$ 5,000.00	1	Each	$ 5,000.00
Contractual/Construction			**Aggregated cost**	**$ 90,000.00**
• Safeway Scaffolding	$ 13,000.00	1	Each	$ 13,000.00
• Troyers Walkway Installation	$ 7,000.00	2	Each	$ 14,000.00
• Troyers Crane Work	$ 15,000.00	1	Each	$ 15,000.00
• Concrete Saw & Core Cutting	$ 15,000.00	1	Each	$ 15,000.00
• Electrical Panel Installation	$ 8,000.00	1	Each	$ 8,000.00
• Midlands – River Diversion	$ 25,000.00	1	Each	$ 25,000.00
Env & Cultural Compliance Costs				**$ -**
Other				**$ -**
TOTAL DIRECT COSTS				**$ 658,092**
Indirect Costs				**$ -**
TOTAL ESTIMATED PROJECT COSTS				**$ 658,092**