LAHONTAN DAM TOWER

REHABILITATION AND WATER CONSERVATION PROJECT

APPLICANT:

Truckee-Carson Irrigation District

2666 Harrigan Road, Fallon, NV 89406

PROJECT MANAGER:

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TABLE OF CONTENTS

Technical Proposal

Executive Summary

Date: February 20, 2024
Applicant Name: Truckee-Carson Irrigation District
City, County, and State: Fallon, Churchill County, Nevada
Applicant Category: Category A (Irrigation District)
Total Project Cost: $4,385,713.74

Brief Project Summary:
The Truckee-Carson Irrigation District (TCID) operates and maintains the federally owned Lahontan Dam which serves as the primary irrigation storage facility for the Federal Newlands Project. Water from the reservoir is drawn into the outlet works through a 114-foot-high concrete intake tower via slide gates (six on the downstream side and six on the upstream side). The tower is largely composed of original components dating back to 1915.

The Project will consist of replacing the six gates on the upstream side of the tower along with the six stems to operate the gates. TCID will also need to purchase three stems for the downstream side to replace old stems that were previously removed. All trash racks will be removed. New trash racks will be built and installed. Adding to the complexity and cost of the project, installation of the new gates and upstream trash racks will have to be done underwater by a certified dive team. The benefits realized from the Project will include improved system reliability, water conservation and improved power generation.

1.0 Project Location

The project is located approximately 10 miles northeast of Silver Springs, Nevada, and 16 miles west of Fallon, Nevada, and is contained within the County of Churchill. The project is located within the Federal Newlands Project. The coordinates for the project are 39.46182 Latitude and 119.06766 Longitude.

Figure 1

Figure 2

2.0 Technical Project Description

2.1 Background

Lahontan Dam and Old Lahontan Power Plant are Newlands Project Facilities completed in 1915. Lahontan Dam is an earthen-filled embankment structure on the Carson River located

approximately 10 miles northeast of Silver Springs, Nevada, and 16 miles west of Fallon, Nevada. The dam was constructed by the U.S. Bureau of Reclamation between 1911 and 1915, and impounds Lahontan Reservoir, which is a major feature of the Newlands Project. The reservoir has an active storage capacity of 289,721 acre-feet at reservoir water surface (RWS) (and spillway crest elevation) 4,162.0 feet, without flashboards. An additional 23,263 acre-feet of provisional irrigation storage can be achieved with the use of 20-inch-high wooden flashboards that are installed across the two spillway crests. There are two spillways located within the embankment, one near each abutment. Each spillway consists of a 250-foot-long uncontrolled concrete overflow ogee crest at elevation 4,162.0 feet, a concrete chute that curves toward the midpoint of the dam, and a circular stilling basin that is shared by both spillways and the outlet works at the toe of the dam.

The outlet works are located through the left section of the embankment. Water is drawn into the outlet works through a 114-foot-high concrete intake tower (Figure 3) located 271 feet upstream from the dam centerline. Hoist controls for the hydraulically operated outlet works gates are within the outlet works gate house on top of the tower. The intake tower has six 3' x 8' upper-level slide gates with inlet invert elevation 4,116.0 feet on its downstream side, and six 3' x 8' lower-level slide gates with inlet invert elevation 4,070.0 feet on its upstream side. The tower is divided into two twin 14-foot-diameter vertical shafts that are not connected to one another. Each vertical shaft has three upper and three lower elevation slide gates which deliver water to the associated dome valve (cylinder gate).

The existing gates leak water from the reservoir which pools around the dome valves. The water then leaks through the dome valves into the outlet system. This leaked water is a loss to the reservoir during non-irrigation periods while TCID is trying to build capacity in the reservoir for the following irrigation season. This lost water eventually makes its way back to the river channel, not used for irrigation or power generation, at the rate of approximately 10 cubic feet per second (CFS).

At the bottom of each shaft is an 8.5-foot diameter dome valve (cylinder gate) that controls flow into its associated outlet conduit. Both conduits are the same in that they have a curved 7-foot-diameter steel liner that transitions from vertical, immediately below each dome valve (cylinder gate), to larger diameter horizontal orientated gooseneck, leading to the gently sloping outlet conduit. Additionally, there are two, three-foot by three-foot sluice gates, referred to as mud gates, with an inlet invert elevation of 4,060.00 feet on the upstream side of the tower immediately below each dome valve but above the gooseneck. These gates have been abandoned by sealing the conduits with a concrete plug.

The right outlet conduit discharges directly into the stilling basin through a nine-foot diameter horseshoe shaped concrete conduit with no other downstream control gates located on it. The left conduit was modified in 1924 to serve as a penstock. The modification consisted of placing a 78-inch diameter steel lining inside the concrete conduit. After the

steel penstock failed, it was replaced in 1984 with a 96-inch-diameter cathodic protected steel pipe. The left conduit can divert water to the two powerplants located downstream and/or discharge into the stilling basin via the right branch of a bifurcation in the conduit. Releases to the stilling basin through the left conduit are controlled by a hydraulically operated 66-inch fixed-cone (Howell-Bunger) outlet works valve. The discharge capacity of the left outlet works conduits at reservoir water surface elevation is 4,162.0 feet/1,031 cfs, based on the generating capacity of the two power plants. The designed discharge capacity of the right outlet works conduit is 1,200 cfs, based on cavitation concern of the gooseneck section of the outlet works conduit.

Old Lahontan powerplant's installed capacity is 1,920-kW, which includes three Pelton Wheel style turbine generating units rated at 640 kilowatts, which were installed between 1911 and 1915. Just upstream of the units and outside of the powerhouse is a 96" butterfly valve which can be used to shutoff flows to Old Lahontan Power Plant. Title to Old Lahontan Power Plant was transferred to TCID in 2022, however the penstock upstream of the butterfly valve remains in Reclamation's inventory as part of Lahontan Dam outlet works.

TCID completed construction of the New Lahontan Plant in 1987 with an installed capacity of 4,000 kilowatts using one Francis type turbine and generating unit. Upstream of the unit is a 74" butterfly valve and 74" penstock connecting the butterfly valve to the bifurcation and 96" penstock.

Figure 3

2.2 Project Description

The Project will consist of replacing the six gates on the upstream side of the tower along with the six stems and related components to operate the gates. New frames for the gates will be installed using existing slide slots. TCID will also need to purchase three stems for the downstream side to replace old stems that were previously removed. All trash racks will be removed and material will be purchased to rebuild them. TCID personnel will remove the trash racks and perform the labor to rebuild them. The trash racks on the upstream side will need to be reinstalled by a contractor because this work will be done underwater; the trash racks on the downstream side will be reinstalled by TCID personnel.

The installation of the gates and trash racks on the upstream side will need to be done underwater by a team of certified divers, adding to the complexity and cost of the project. Normal operations of Lahontan Reservoir require a minimum pool of 4,000 acre feet or a water surface elevation of 4,090.00 feet, which is twelve feet above the top of the upstream (lower) gates and one foot above the top of the lower trash racks. Under normal conditions the lower gates and trash racks are under water.

Due to the condition and age of the tower gates, TCID is reluctant to complete some of the required testing procedures on the lower gates due to the risk of gate failure potentially resulting in increased and uncontrolled leakage through any affected gates. Current leakage from the gates also exceeds the maximum volume necessary to safely perform maintenance on the facility.

It is unlikely Lahontan Reservoir could be lowered to dead pool, which corresponds to the lowest elevation, if all the gates were open, to refurbish the lower slide gates and embedded slots more easily. Dead pool maintains approximately 270 ac-ft of water in the reservoir. In order to refurbish the lower slide gates and embedded slots and seats, the work will have to be completed underwater. (Figure 4 - Illustrating tower at low water lever)

Figure 4

Based on recommendations from Reclamation's Technical Service Center (TSC), TCID plans to hire a gate manufacturer to construct the gates and frames. TCID has consulted with two gate manufacturers for estimates to replace the six lower gates. Their recommendation is to remove the existing gates and install new gates and frames inside the existing slots without having to do extensive work under water. The gates and frames may be replaced with stainless steel instead of cast iron depending on design requirements. Design work will be needed to engineer

Additionally, TCID intends to remove the existing trash racks in front of the gates (Figure 5) and install new stainless steel trash racks, which will sit behind the existing trash racks in the bulkhead slot. The new stainless steel trash racks would maintain the same spacing as the original trash racks.

Figure 5

The left dome valve was initially used to regulate flows out of the left conduit outlet works prior to the installation of the steel penstock to the Old Lahontan Power Plant. With the installation of the penstock, the line was bifurcated and an outlet works gate was installed at the end of the left conduit to regulate flows out of the left conduit in case the power plant was not operational. Since the initial installation of the penstock, an additional power plant has been constructed, and a Howell Bunger valve has replaced the original gate at the end of the left conduit. Flows out of the left conduit are now regulated by either the power plants or the Howell Bunger valve and the dome valve is no longer used to regulate flows. The left dome valve is now a redundant emergency gate along with the three upper and three lower tower slide gates. As originally intended, the six slide gates act as emergency or guard gates used to stop flows when inspecting the tower, dome valve and penstock. The dome valve is typically fully open during irrigation season when the power plant is operational or partially opened during non-irrigation season. The left dome valve is typically only closed during operational testing of the full gate stroke. With the left dome valve in place, maintenance activities continue to be required on an annual basis. There is always a risk that the dome valve will close unintentionally which could be catastrophic to the downstream penstock and power plants. This Project also plans to remove the left dome valve after refurbishment and replacement of the tower slide gates.

3.0 EVALUATION CRITERIA

Evaluation Criteria A – Quantifiable Water Savings

1) *Describe the amount of estimated water savings.*
   It is expected that the Project will result in the saving of 2,399.43 acre feet of water annually. This number is arrived at by measuring the flow below Lahontan Dam during the non-irrigation season when all mechanisms in the tower and power plants controlling releases are shut down and in the closed position. The flow during this time, when it should be zero, is 10 cfs. This equals 19.83 af per 24 hour period and 2,399.43 acre feet per year (non-irrigation season equals 121 days).

   1.983 af/day
   10 cfs x 1.983 = 19.83 af/day
   19.83 x 121 days = 2,399.43 af (losses during outage)

2) *Describe current losses.*
   Current losses are the result of leakage from the existing antiquated gates on the upstream side of the intake tower. These are the original gates that were installed in 1915. The water leaks around the seals of the gates and pools around the dome valves, which also leak, and results in the water returning to the river channel. The lost water does not provide any beneficial use for the water users because it stays in the river channel and is lost to seepage and eventually makes its way to the Stillwater Flats at the end of the system.

3) *Describe the support/documentation of estimated water savings.*
   The water savings described above are arrived at by calculating the measured flow below Lahontan Dam when flows should be zero, times the days of the non-irrigation season. These flows are measured by a USGS stream gage below Lahontan Dam[1] which shows flows at approximately 10 cfs during this outage window. The observer may notice a fluctuation in those flows during the outage window. This is due to temporary measures taken by TCID to reduce the leakage.

4) *Please address the following questions according to the type of infrastructure improvement you are proposing for funding.*
   (1) Canal Lining/Piping: This Project does not include canal lining or piping.
   (2) Municipal Metering: This Project does not include municipal metering.

[1] see - https://waterdata.usgs.gov/monitoring-location/10312150/#parameterCode=00065&period=P7D&showMedian=false

(3) Irrigation Flow Measurement: This Project does not include irrigation flow measurement.
(4) Tur Removal: N/A
(5) Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles: N/A
(6) High Efficiency Indoor Appliances and Fixtures: N/A
(7) Commercial Cooling Systems: N/A

Evaluation Criteria B – Renewable Energy

Subcriterion B.1 – Implementing Renewable Energy Projects Related to Water Management and Delivery

NA

Subcriterion B.2 – Increasing Energy Efficiency in Water Management

This Project will increase renewable energy efficiency by reducing the losses from the Lahontan Reservoir during a period when the associated powerplants are not running. By reducing leakage occurring during the outage period, TCID will be able to reserve that water in the reservoir for hydropower generation during the irrigation season.

TCID owns and operates the Old Lahontan Power Station, the New Lahontan Power Station, and the 26' Drop Power Station, all of which are downstream from the reservoir and only generate power when releases are made during the irrigation season (March 15 – November 15). The efficiency of the system is directly affected by both the water availability and the elevation in the reservoir. Higher elevations in the reservoir create greater head-pressure for power generation.

It is estimated that the conserved water, as a result of the Project work, will be able to generate approximately 116.3kwh.

26' Drop = 43kwh
New Lahontan = 73.3kwh
121 days at 10cfs x 116.3kwh = 14,072.3kwh annually

The estimated kwh calculation was derived by reviewing the records of power generated by the two stations per hour and reviewing the power generation lost when the flow is reduced by 30 cfs. This number was then divided into thirds to show approximate kwh lost when flows are reduced by 10 cfs (the flow that the repairs are expected to preserve). The only variable impacting this number which is unknown, is the impact of water elevation and corresponding head pressure, in the reservoir. The total kwh of 116.3 was then multiplied over 121 days (the number of days the 10 cfs conserved water can be used during the irrigation season).

Evaluation Criteria C – Other Project Benefits

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

    a. *Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability. Consider the following:*

        i. *Describe recent, existing, or potential drought or water scarcity conditions in the project area.*

The Newlands Project is located in the State of Nevada which is the driest state in the nation and commonly experiences prolonged periods of drought. The primary source of water for TCID users is the Carson River which depends entirely on snow runoff from the Carson River watershed located in the Sierra Nevada Mountains. The secondary source of water is the Truckee River. TCID is only allowed to divert water from this secondary source when it is unable to meet its targets in the Lahontan Reservoir. Further, TCID is legally required to reduce its dependency on this source through means of conservation under federally imposed Operating Criteria and Procedures for the Newlands Reclamation Project, Nevada.

The region can best be described as an area of extremes with prolonged droughts followed by a brief flash of flooding. As an example, the winter of 2022-2023 set new records for snowfall in the mountains which ended a prolonged period of extreme drought in the region. Another example is the winter of 2016-2017 which also ended an extreme drought.

During periods of drought, TCID must reduce the allocation of water afforded to the water users. This reduction is best illustrated by the following examples:

2012 90% allocation

2013 75% allocation

2014 50% allocation

2015 20% allocation

2016 70% allocation

2017 100% allocation (flooding)

***

2021 70% allocation

2022 85% allocation

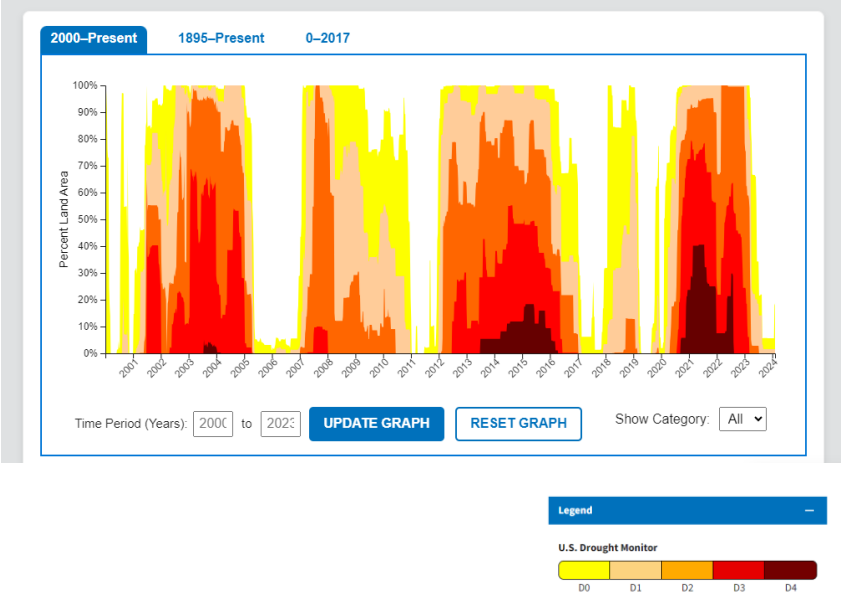
2023 100% allocation (flooding)

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

The snowpack for the Carson River is currently 49% of the average median for this time of year while the snowpack for the Truckee River is currently 54% of the median. The Lahontan Reservoir has sufficient carryover capacity from the large 2023 water year, but the area is expected to return to another period of drought. (show source)

iii. 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).

Droughts in the region are often cyclical with the duration of dry periods spanning 5-7 years followed by major precipitation breaking that cycle. It appears that we are now entering a dry period with the snowpack currently at 48-50% of median. This pattern is illustrated by the following graph taken from the Nevada page at Drought.gov.[2]



b. 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.

NA

[2] file:///C:/Users/District%20Manager/Downloads/Nevada%20_%20Drought.gov.html

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

The Project will reduce the losses in water that are not used for any beneficial purpose. All water that is conserved in the reservoir is then made available for users throughout the irrigation season, which is especially impactful during drying years – cuts in allocations may be minimized through the use of conserved water.

d. Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?

The Project will directly result in more efficient management of water by making water that is otherwise lost available for use by the water users.

e. Please address where any conserved water will be used for the intended purpose(s).

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

All the conserved water made available by the reduction in leakage at the intake tower will be made available to the water users below Lahontan Dam. This includes the entire Carson Division of the Truckee-Carson Irrigation District and includes, but is not limited to, farmland, wildlife areas, and pasture lands.

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

The water that is currently lost to leakage will be conserved and stored in the Lahontan Reservoir. Water is then released and put to use within the Carson Division of the Truckee-Carson Irrigation District.

f. Will the project assist States and water users in complying with interstate compacts?

Yes, the water conserved by the Project will assist in TCID's obligation to reduce its reliance on the diversion made from the Truckee River as required by the federally imposed Operating Criteria and Procedures for the Newlands Reclamation Project, Nevada.

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

Yes, the Newlands Project is often subject to litigation over water usage and water rights. With TCID's obligation to reduce its reliance on diversions from the Truckee River, the Project will minimize the likelihood of additional litigation to compel TCID to fulfill that obligation.

2) *Ecological Benefits.*

a. *Will the project benefit species?*

No.

b. *Will water remain in the system for longer periods of time?*

Yes, water conserved by the Project will remain in the Lahontan Reservoir until released into the irrigation system. This will benefit the fish population and recreation opportunities in Lahontan Reservoir by maintaining higher water elevation and improving water quality and temperature when the elevation nears minimum pool of 4,000 acre feet. Higher elevations will further benefit the oxygenation levels in the water which benefits the fish population.

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

Unknown.

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

Unknown.

3) *Climate Change.*

a. *Describe how the project addresses climate change and increases resiliency. For example, does the project help communities respond to or recover from drought?*

The Project will increase the area's resiliency by providing an additional quantity of water that is currently lost from leakage. This will help during dry periods by conserving any water that is stored in Lahontan Reservoir and making it available to water users.

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

While this is not the primary purpose of the Project, the secondary benefits flow to the health of the entire ecosystem by persevering water in the Lahontan Reservoir and distributing it in a controlled manner throughout the irrigation system.

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

No.

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

Yes, the Project will include installing new gates at the intake tower which will reduce or eliminate the leakage for 50 or more years and provide the climate resilience described above for that period of time.

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

No.

Evaluation Criteria D – Disadvantaged Communities and Tribal Benefits

Subcriterion D.1 Disadvantaged or Underserved Communities

This Project will serve or benefit a disadvantaged or underserved community. The communities benefiting from the Project include:

- Tract Number 32031940200 (Pyramid Lake Tribe) is identified in the screening tool as disadvantaged. This community will benefit from the Project because the water saved will directly impact the amount of water that will need to be diverted from the Truckee River. All water that is not diverted has its terminus in the Pyramid Lake, which is an important fishery for the tribe.
- Tract Number 32001950500 (Fallon Paiute Shoshone Tribe) is identified in the screening tool as disadvantaged. This community will benefit from the Project because the water saved will be made available to this important water user as part of the Carson Division. This tribe uses the irrigation water for agricultural purposes and is directly impacted by the allocation made available to all water users.

Subcriterion D.2 Tribal Benefits

a. *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?*

Yes, the Project will directly benefit both the Pyramid Lake Tribe by reducing the amount of water diverted from the Truckee River, and the Fallon Paiute Shoshone Tribe by conserving water that will then be made available to them as a water user.

b. *Does the proposed project support Tribally led conservation and restoration priorities, and/or incorporate or benefit Indigenous Traditional Knowledge and practices?*

No.

c. *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?*

Yes, the Project will improve the resilience of both Tribes identified above by reducing the amount of water lost through the leaking gates and otherwise as described under subsection a. of this sub criterion. The Project also serves to support Reclamation's Tribal trust responsibilities to both tribes.

Evaluation Criteria E – Complementing On-Farm Irrigation Improvements

TCID is unable to identify specific on-farm projects that will serve to complement the proposed project. However, local farmers are constantly taking advantage of NRCS funding programs to improve irrigation practices. Those projects will complement this proposed project in conserving additional water resources.

Evaluation Criteria F – Readiness to Proceed

1) *Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description provided in Section D.2.2.2. Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.*

This Project is largely dependent on water elevations at Lahontan Reservoir. To simplify the installation of the gates TCID must wait for the levels to be at or near minimum pool of 4,000 ac-ft or a water surface elevation of 4,090.00 feet. Thus, the start date for the Project will need to be flexible to await the proper conditions. TCID anticipates being near minimum pool by the proposed start date of October 1, 2025 if the winter of 2024-2025 is below or near average for snowpack. However, the required materials including the gates, stems, and steel for the trash racks can be ordered and stored by TCID so that they are ready to be installed when the proper conditions are present.

TCID anticipates going out to bid on the necessary contracts upon the award of the grant and execution of the funding agreement. These efforts will be completed by Spring of 2025 to prepare for the work to be completed in the Fall of 2025.

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

No permits are required as a part of this Project.

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

TCID has worked with BOR and potential contractors in the development of the design for the gates and related installation work. TCID intends to hire an engineering firm to provide design assistance and construction management services. The engineering firm will be hired upon execution of the funding agreement.

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

TCID will seek approval from its Board of Directors for the various contracts for the Project. TCID does not anticipate any such roadblocks.

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.*

Design work for the Project is largely complete having gone through a review with BOR staff prior to this application. TCID plans to hire an engineering firm that will provide general review of the design plans and provide any necessary feedback. Any additional design work will be completed by the end of February 2025.

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 following represents the estimated project schedule for major tasks:

- NEPA and Cultural Compliance — Complete by August 1, 2025
- Design Work Completion — Complete by Feb. 28, 2025
- Bid Review and Contractor Selection — Complete by March 31, 2025
- Order Materials — Complete by July 31, 2025
- Construction Period — Oct. 1, 2025 – Dec. 31, 2025

TCID further affirms that it consulted with the local BOR Area Office in the preparation of the NEPA and Cultural compliance schedule.

Evaluation Criteria G – Collaboration

1) *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?*

Yes, there is community support for the Project. No other partners are directly involved in the Project. However, letters of support from community members are included in this application.

2) *What is the significance of the collaboration/support?*

The Newlands Project is often the battleground for disputes over water usage. The Project is unlikely to gain any negative attention due to the fact that it will conserve a portion of water that is normally lost from the system.

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

Unknown.

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

Yes, the Project will result in benefits to agriculture, environmental and recreation. All of these types of users benefit from the ability of TCID to conserve even a minimal amount of water.

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

Letter of support is attached.

Evaluation Criteria H – Nexus to Reclamation

This Project is directly connected to a Reclamation facility. The Lahontan Dam and the intake tower described herein are owned by the Bureau of Reclamation. TCID is responsible for the operation and maintenance of those facilities per the terms of a contract identified as Contract No. 7-07-20-X0348-X.

LETTER OF SUPPORT

Office of the
CHURCHILL COUNTY COMMISSIONERS

Myles Getto
Justin Heath
Bus Scharmann

February 12, 2024

RE: Truckee-Carson Irrigation District WaterSMART Grant Application

Dear Grant Application Reviewer,

Please accept this letter as Churchill County's support of the Truckee-Carson Irrigation District's WaterSMART grant application to fund work on the intake tower at Lahontan Dam. The future viability of this facility is important to our community as it supports local recreation and water sustainability for our ag producers.

Churchill County is also a water rights owner, and supports water conservation efforts such as this, especially given the susceptibility of our region to drought. Conservation projects of this kind are vital to the economic strength of our community and support the families that live here.

If you have any questions regarding the county's support of TCID's grant application, please feel free to reach out to me or our County Manager at jim.barbee@churchillcountynv.gov.

Sincerely,

Myles Getto
Chairman

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www.churchillcountynv.gov • pammoore@churchillcountynv.gov

Churchill County, Nevada, is an equal opportunity provider and employer.

TRUCKEE-CARSON IRRIGATION DISTRICT

Funding Plan, Budget Proposal and Budget Narrative

FUNDING PLAN

TCID estimates the total cost of the Project to be $4,385,713.75 and is requesting a 50% split with BOR. A summary of the non-federal and federal funding sources is provided in Table 1 and 2, and the total project costs are presented in Table 3. The detailed budget breakdown is provided Exhibit A.

Table 1:
Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with federal funding	$ 2,192,856.87
Costs to be paid by applicant	$ 2,192,856.87
Value of third-party contributions	$ N/A
TOTAL ESTIMATED PROJECT COSTS	$ 4,385,713.74

Table 2:
Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entitites	$
1. Truckee-Carson Irrigation District	$ 2,192,856.87
Non-Federal Subtotal	$
REQUESTED RECLAMATION FUNDING	$ 2,192,856.87

Cost-Share Requirement

The cost-share requirement of $2,192,856.87 will be supplied entirely by Truckee-Carson Irrigation District (TCID, Applicant) as cash and in-kind contributions. TCID has carefully reviewed the project and has determined that it will allocate funds as identified below. All non-federal cost share identified below has been secured and will be allocated for TCID's share of costs for the project.

Source of Funds

All applicable cost share committed by TCID to support the design, construction and implementation of the project costs, not including in-kind contributions, will be funded through existing cash on hand. These funds are currently available in a reserve account and were derived from TCID's annual operation revenues. A resolution was passed by the TCID Board of Directors committing to the expenditures required for this Project. (See Attached Resolution).

No third-party contributions are included in the cost-share portion and there are no pending grants or loans awaiting approval for the project.

The budget proposal does not include any project costs incurred prior to the award.

BUDGET PROPOSAL

TCID is seeking a 50% cost share for the total cost of the project as more specifically outlined in Exhibit A. TCID's portion of the cost share will come from cash, in-kind contributions from personnel time, use of TCID-owned equipment and de minimus indirect costs. A summary of the proposed project budget is contained in Table 3.

Table 3:
Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION $/Unit	COMPUTATION Quantity	Quantity Type	TOTAL COST
Salaries and Wages				
TCID Employee Wages				$ 95,859.95
				$
Fringe Benefits				
TCID Employee Fringe Benefits				$ 52,707.00
Travel				
None				$ -
Equipment				
Diesel Air Compressor				$ 1,633.20
Excavator				$ 8,408.73
Handheld Concrete Saw				$ 750.00
Lowboy				$ 269.40
Mig Welder				$ 308.00
Plasma Cutter				$ 416.00
Sandblaster				$ 1,824.00
Sandblasting Hose				$ 99.60
Semi for Lowboy				$ 2,920.20
Skid Steer				$ 7,813.62
Skid Steer Trailer				$ 327.75
Telehandler				$ 9,642.00
Truck 4x4 1500 (3)				$ 27,128.40
Truck 4x4 1500 (Foreman)				$ 9,898.20
Truck 4x4 1500 (Assistant)				$ 9,898.20
Truck F450 (731)				$ 2,440.50
Supplies and Materials				
				$
Contractual/Construction				
Winch for Man Lift				$ 78,748.00
Steel for Trash Racks				$ 47,692.00
Gates - Six Lower				$ 832,000.00
Stems - Six Lower				$ 156,913.00
Stems - Three Upper				$ 30,424.00
Gate and Trash Rack Removal and Installation (upstream)				$ 2,631,419.00
Inspection (BOR)				$ 25,000.00
Engineering				$ 300,000.00
NEPA and Cultural (Far Western)				$ 20,944.00
NEPA Review (BOR)				$ 7,500.00
Other				
None				$ -
TOTAL DIRECT COSTS				$ 4,362,984.75
Indirect Costs				
Included				$ 22,729.00
TOTAL INDIRECT COSTS				$ 22,729.00
TOTAL ESTIMATED PROJECT COSTS				$ 4,385,713.75

BUDGET NARRATIVE

This budget narrative provides explanations for each of the items included in the Budget Proposal. The costs for the project are primarily categorized as "construction costs" and encompass the following:

- An engineering firm will be retained to perform some pre-construction and construction-phase tasks.
- A contractor will be selected for the manufacturing and supplying of the 6 lowers gates, 3 downstream stems and 6 upstream stems and related components.
- A contractor will be selected to supply the steel to be used for the new trash racks. The work required to construct the trash racks will be done by TCID personnel as in-kind contribution. TCID will install the trash racks on the downstream side whereas a contractor will install the gates on the upstream side.
- Gate installation and construction of gate frames will be done by a contractor which will likely require the use of certified underwater divers and welders to perform the work.
- Following the installation of the gates, TCID personnel will then remove the left dome valve as an in-kind contribution.
- There will be costs related to NEPA and Cultural Compliance and Inspections
- A mechanized hoist will need to be purchased and installed inside the tower to facilitate the transportation of personnel and equipment inside the shafts.
- TCID-owned equipment will be used where applicable as in-kind contribution.

Estimates for the above-described construction activities are more particularly set forth in attached Exhibit A.

TCID has, and will follow, applicable internal procedures and policies related to the procurement of materials and selection of contractors. These procedures and policies comply with the corresponding laws and regulations in the State of Nevada for such public works and purchasing.

A. Salaries and Wages/Personnel

TCID expects to spend money on salaries and wages during the duration of the project for project management, design involvement and assistance, evaluation of contractor proposals, construction oversite, and some construction related activities performed by TCID personnel. These recipient costs will be included as in-kind contributions by TCID as a portion of its share of the total project cost.

B. Fringe Benefits

TCID's fringe benefits are estimated at 55% of employee compensation costs and consist of Medi care (1.45%), Retirement (17%), employee health insurance including dependent coverage (33%), worker's compensation insurance (4%).

C. Travel
No costs related to travel are requested.

D. Equipment
No additional equipment will be purchased as part of this project.

E. Supplies
TCID will need to purchase a mechanized hoist to transport personnel and equipment down the shafts from the top of the tower.

F. Contractual
No separate contracts will be awarded other than those listed under “construction”.

G. Construction
Construction costs include costs for the following project categories: engineering services for pre-construction and construction phases, gate manufacturing, stem manufacturing, steel supply for trash racks, gate installation, NEPA and Cultural compliance, inspections. These costs are more specifically outlined in Exhibit A.

H. Other Expenses
TCID has not identified or included any additional expenses associated with this project.

I. Indirect Costs
TCID does not have a current Federal negotiated indirect cost rate agreement so indirect costs were calculated using the 10% de minimis rate against MTDC as detailed in Exhibit A. All of the indirect costs are being treated as in-kind contributions.

J. Third Party Contributions
No Third-Party Contributions will be used for the project.

FUNDING RESOLUTION

TRUCKEE-CARSON IRRIGATION DISTRICT

RESOLUTION NO. 2024-02

TITLE: A RESOLUTION AUTHORIZING APPLICATION FOR A WATERSMART GRANT THROUGH THE UNITED STATES BUREAU OF RECLAMATION FOR WATER AND ENERGY EFFICIENCY. THIS RESOLUTION SPECIFICALLY AUTHORIZES THE APPLICATION FOR A WATERSMART GRANT THROUGH FUNDING OPPORTUNITY NUMBER R24AS00052 FOR THE FUNDING OF IMPROVEMENTS TO BE MADE AT THE LAHONTAN DAM INTAKE TOWER.

SUMMARY: The District is applying for a WaterSMART grant from the United States Bureau of Reclamation for the funding of improvements to be made at the Lahontan Dam intake tower. This grant requires provision of a like value or match of District resources which may be made by provision of money, labor and use of equipment. This resolution provides board approval for the application.

WHEREAS, the District is submitting an application to the United States Bureau of Reclamation for a WaterSMART grant bearing a maximum possible award amount of $5,000,000, for water and energy efficiency, in the Newlands Federal Reclamation Project; and,

WHEREAS, approval of the application by the Board of Directors is a condition of the application process instituted with, and made for, the said grant; and,

WHEREAS, the WaterSMART application, Funding Opportunity R24AS00052, is made for the purpose of funding improvements to be made at the Lahontan Dam intake tower including the replacement of gates, stems, and trash racks all of which will improve water conservation and energy efficiency; and,

WHEREAS, as a condition of the said WaterSMART grant the District must provide a like amount of value as match to the grant, including money and/or provision of labor and equipment; and,

WHEREAS, the District is able to, and intends to provide, match to Funding Opportunity R24AS00052 through provision of money, labor and equipment for the work to be performed; and,