WaterSMART

Environmental Water Resources Projects

FY2023

Notice of Funding Opportunity No. R23AS00089

Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Del Norte, CO

SUBMITTED BY:

COLORADO RIO GRANDE RESTORATION FOUNDATION

IN PARTNERSHIP WITH:

SAN LUIS VALLEY IRRIGATION DISTRICT

PROJECT MANAGER

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TECHNICAL PROPOSAL AND EVALUATION CRITERIA

Executive Summary

Date: March 24, 2023
Applicant Name: Colorado Rio Grande Restoration Foundation
Applicant Location: Category B applicant (Colorado Rio Grande Restoration Foundation) – Alamosa; Alamosa County, Colorado
Category A partner (San Luis Valley Irrigation District) – Center; Saguache County, Colorado
Applicant Type: Category B applicant working with Category A partner

Project Summary

The Colorado Rio Grande Restoration Foundation (CRGRF), in partnership with San Luis Valley Irrigation District (SLVID), will improve the diversion infrastructure associated with the Farmers Union Canal (FUC) and Rio Grande #1 Ditch, located near Del Norte, CO, to meet agricultural, environmental, recreational, and community needs. The FUC and Rio Grande #1's diversion structures and headgates represent critical water infrastructure, delivering water to twelve irrigation ditches. However, this infrastructure creates a barrier to fish, is hazardous for boaters, and requires frequent maintenance. The Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project (project) will construct a new diversion structure that will provide safe fish and boat passage, enhance aquatic and riparian habitat, and deliver water to the FUC, Rio Grande #1, and multiple other ditches. The project has been carefully designed to create passage for fish, including native small-bodied fish such as Rio Grande chub, and to create safe boat passage. It will also benefit agricultural water users by reducing maintenance needs and increasing water delivery reliability and efficiency through headgate upgrades, including automation. This project was identified in the Rio Grande Stream Management Plan, a collaborative and stakeholder-driven planning effort.

Project Duration

The project is expected to be completed within 27 months after award of Bureau of Reclamation (BOR) WaterSMART funding (expected by April 2024). Environmental and cultural resources compliance is expected to take 5-6 months and the construction period is estimated to be 3-4 months. Barring any significant and unforeseen delays in permit approvals, the project will be completed no later than July 2026.

Project Start Date

The project's estimated start date is April 2024.

Estimated Project Completion Date

The estimated completion date is July 2026.

Located on Federal Facility or Federal Land

This project is not located on federal land and is not focused on a federal facility.

Project Location

The Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project (project) is located in Rio Grande County, CO less than one mile east of Del Norte, CO (Figure 1). The project latitude is 37°41'03.0"N, and the longitude is 106°20'39.2"W.

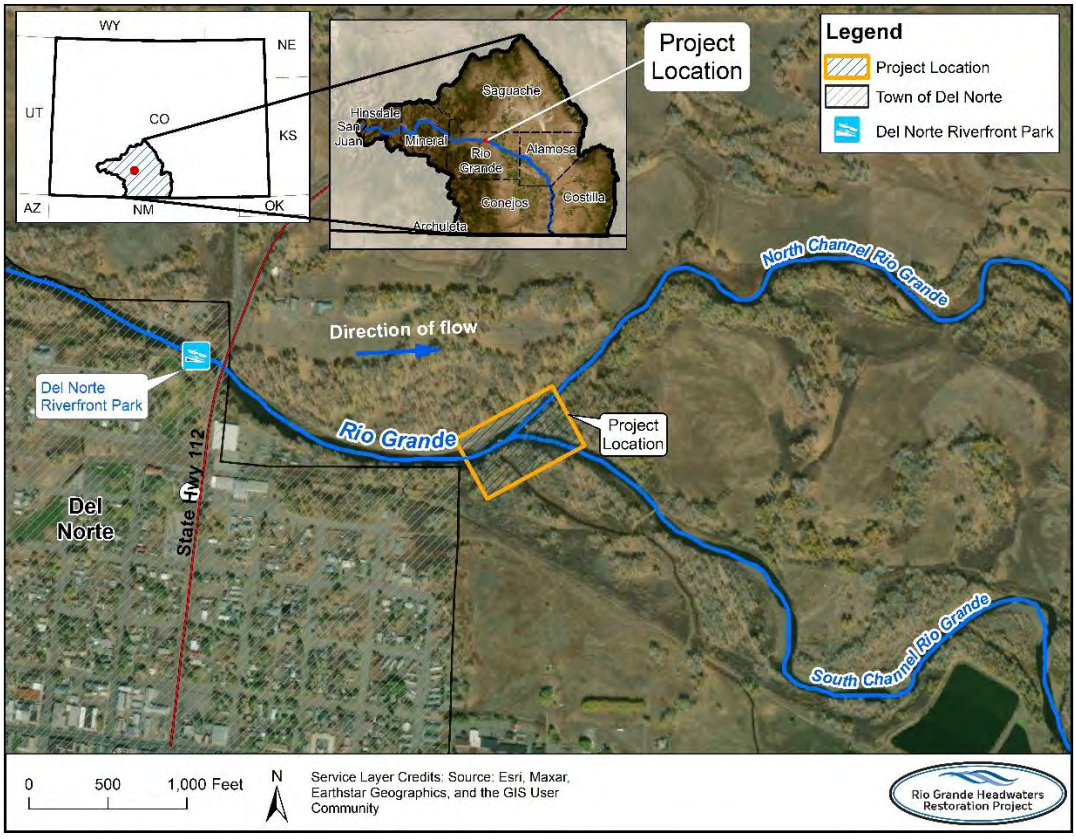

Figure 1. *Project site location on the Rio Grande near Del Norte, CO.*

Technical Project Description

This is a multi-purpose project to enhance fish and boat passage on the Rio Grande, as well as overall river health, while also improving irrigation infrastructure. The SLVID owns and operates Rio Grande Reservoir and is responsible for storing and distributing irrigation water to the Farmers Union Canal (FUC). The diversion infrastructure used to deliver water to the FUC and the nearby Rio Grande #1 (RG #1) Ditch is aging and inefficient, and the FUC diversion structure creates a barrier to both fish and boat passage. The project will replace the existing FUC diversion structure with a new diversion structure that includes a rock ramp fishway and a section specifically designed for boat passage. The new diversion will provide adequate hydraulic head pressure to serve the RG #1 Ditch, located less than 150 feet upstream, allowing the existing RG #1 diversion dam to be removed. In addition, the existing FUC and RG #1 Ditch headgates, which deliver water to the FUC, RG#1, and ten other downstream ditches will be replaced with new automated headgates. The project will also include significant aquatic and riparian habitat restoration through the installation of rock and root wad structures as well as riparian revegetation.

The project is located less than one mile downstream of the recently completed Del Norte Riverfront Park, a popular park featuring a playwave and other recreation infrastructure (see Figure 1, above). The FUC diversion infrastructure bifurcates the Rio Grande into its north and south channels. The RG #1 Ditch is located just upstream of the FUC and diverts irrigation water to the south of the river. The figures below show a map (Figure 2) and aerial photo (Figure 3) of the diversion infrastructure that is the focus of this project.

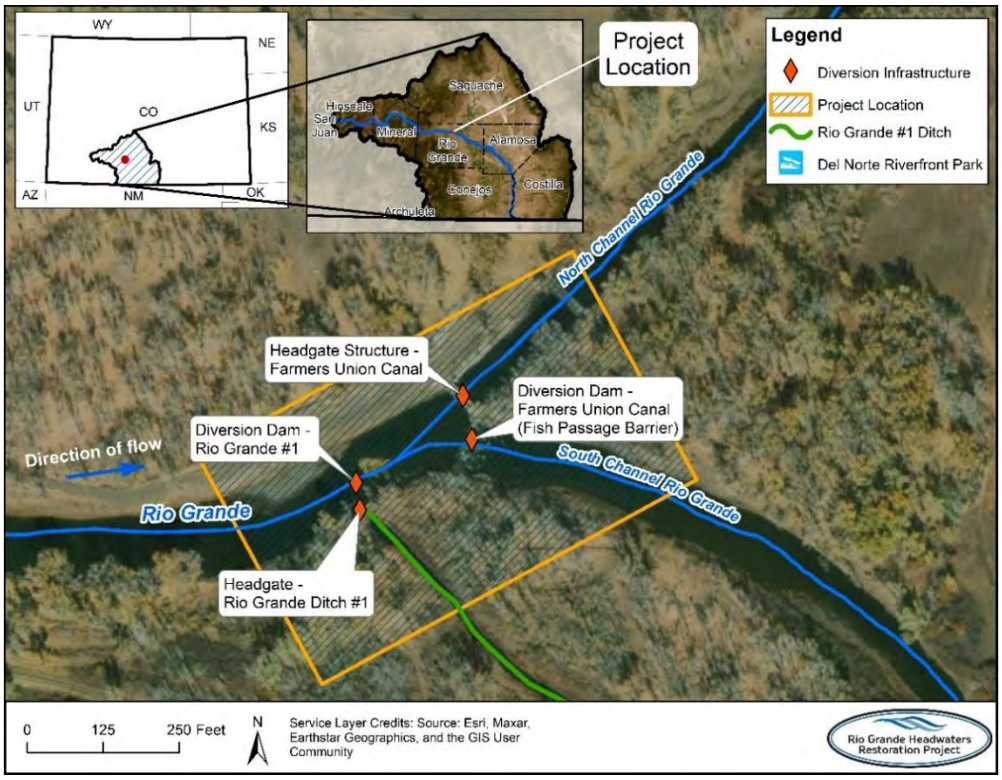

Figure 2. *Diversion infrastructure to be replaced and improved within the project area.*

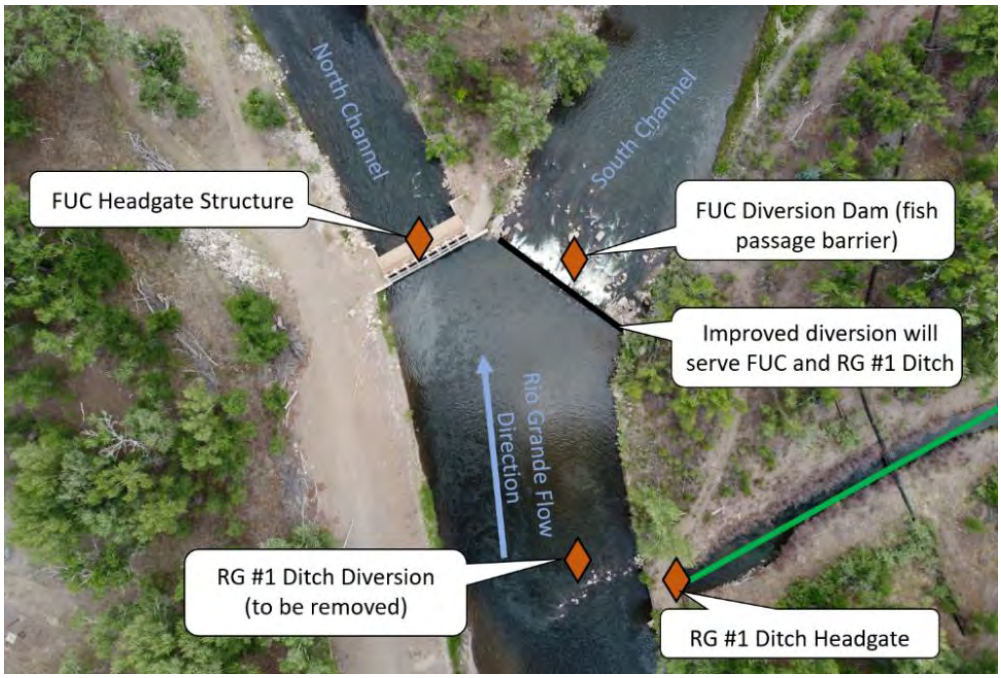

Figure 3. *Aerial photo of diversion infrastructure bifurcating the Rio Grande.*

By controlling flows into the north and south channels, this important irrigation infrastructure delivers water to the FUC (140 water users), the RG #1 Ditch, and ten other ditches, providing irrigation water to over 41,000 acres, as shown in figures 4 and 5.

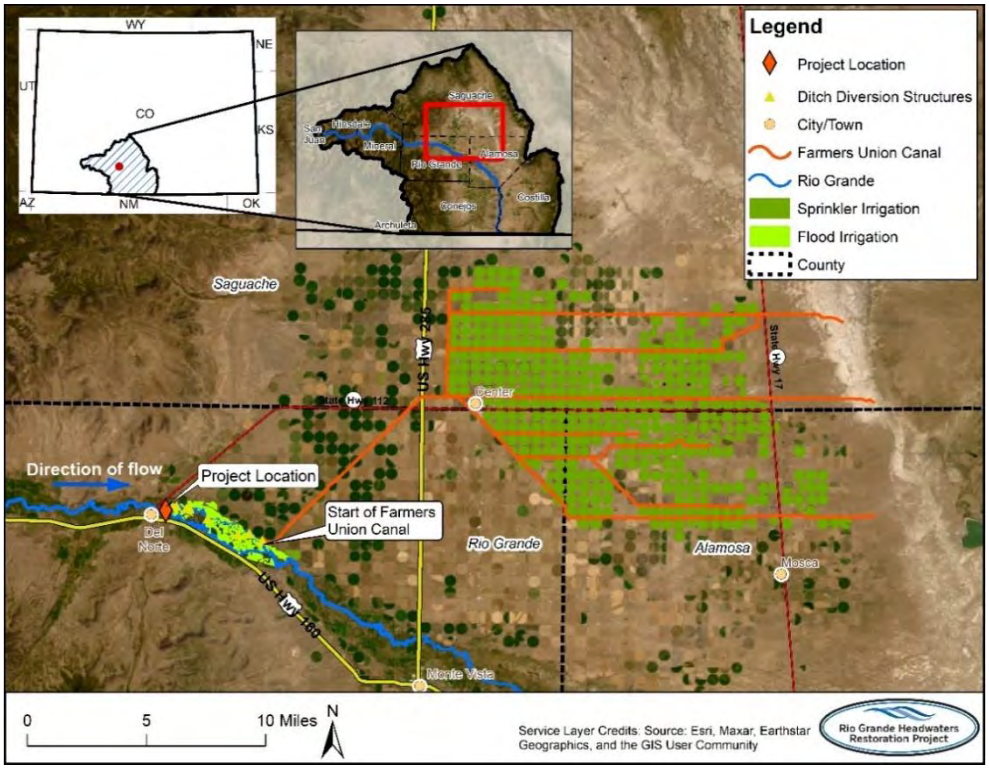

Figure 4. *Irrigated lands that rely on Farmers Union Canal diversion infrastructure.*

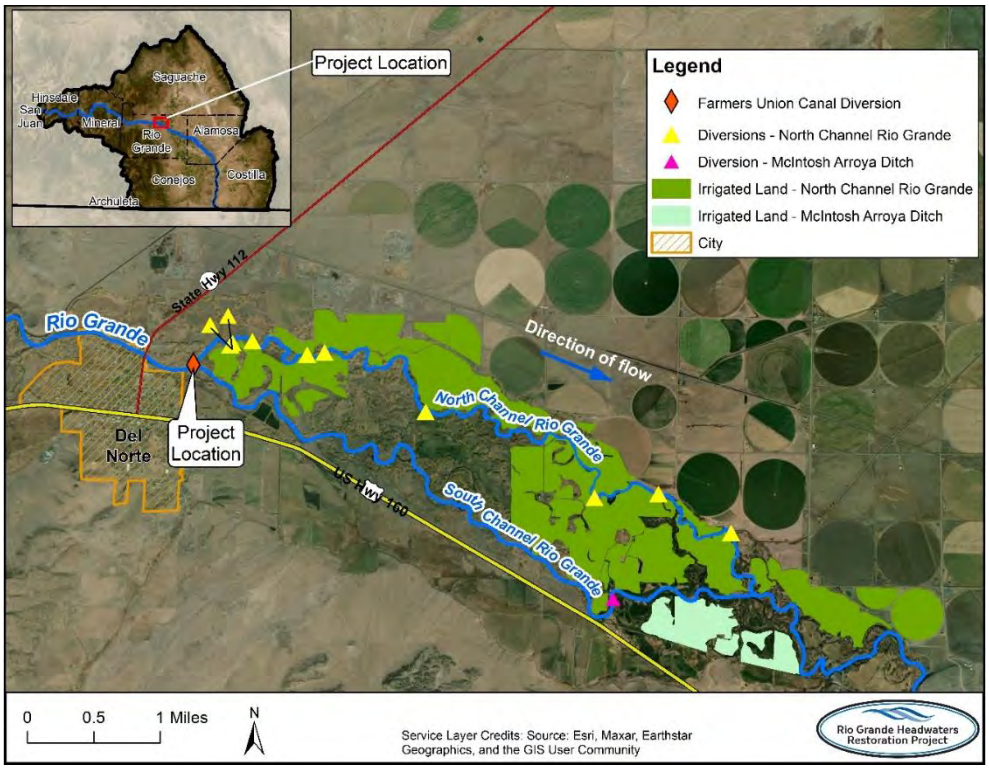

Figure 5. *Irrigation ditches on the north and south channels of the Rio Grande benefitting from the Farmers Union Canal diversion infrastructure that is a component of this project. Ditch diversion locations and irrigated land are shown.*

However, the FUC and RG #1 Ditch rely upon aging and inefficient diversion and water control headgates that are incapable of creating adequate hydraulic head pressure to divert the ditch's water rights during low streamflow conditions. The existing FUC diversion structure is a push-up dam comprised of steel plating, concrete blocks, and river rock. It creates a barrier to fish passage, is unsafe for recreational boaters, disrupts the river's natural sediment transport regime, and frequent instream maintenance of the diversion structure adversely affects aquatic habitat. Salmonid species are likely able to navigate the diversion at some flows, however the structure prevents passage of small-bodied native fish at all flows due to high velocity areas and the abrupt vertical drop formed by the diversion. Boat navigation is difficult to impossible due to sharp sheet metal, concrete rubble, and rebar in the diversion. The FUC headgate infrastructure includes a series of eight wooden headgates that are set in concrete. The headgates are difficult to operate efficiently and portions of the concrete is eroding, causing leakage. The existing RG #1 Ditch diversion is also a push-up dam consisting of large boulders and does not create adequate head pressure to serve the ditch. The existing RG #1 headgate is a steel slide gate that functions poorly. Existing diversion infrastructure in the project area is shown in Figure 6.

Figure 6. *FUC diversion (upper left); aerial view of FUC diversion (upper right); FUC headgate infrastructure looking upstream (lower left); Rio Grande #1 Ditch diversion and headgate (lower right).*

The proposed project will address the issues described above through substantial improvements to the FUC and RG #1 diversion infrastructure, as well as aquatic and riparian restoration at and near this infrastructure. The project includes the following:

- Replacing the diversion structure servicing the FUC with a grouted rock ramp diversion that serves both the FUC and RG #1 Ditch;
- Removing the existing diversion dam servicing the RG #1 Ditch;
- Replacing and automating the headgate infrastructure servicing the FUC and RG #1 Ditch, which will also benefit ten other irrigation ditches, including the Weiss, Brey, Rio Grande #2, Kane Callan, Anna Raber, Off, Raber, Hall-Voss, Cochran Pioneer, and McIntosh Arroya ditches;
- Enhancing 542 linear feet of aquatic habitat through improved sediment transport at the upgraded FUC diversion dam and the installation of fish habitat features;
- Stabilizing of 646 linear feet of streambank; and
- Restoring 0.2 acres of riparian habitat using 1,200 willow transplants.

The CRGRF and SLVID hired Huitt-Zollars, Inc (HZI) to complete engineering and project designs for the construction of the new grouted rock diversion structure, headgate improvements and automation, and river restoration. Project designs have been reviewed and approved by the project's Technical Advisory Group (TAG), which is made up of the following entities: SLVID, CRGRF, Colorado Division of Water Resources (DWR), Colorado Parks and Wildlife (CPW), Trout Unlimited (TU), San Luis Valley Water Conservancy District (SLVWCD), and project landowners.

Diversion Structure Improvements

The CRGRF and SLVID will hire a contractor to remove the current FUC and RG #1 diversion dams, clear and shape the river channel, and enact pollution control. The contractor will then complete grade preparation, dewatering, and temporary erosion control measures and build a new grouted rock ramp diversion to replace the existing FUC diversion. The new diversion will be made up primarily of grouted boulders and will include a rock ramp fishway as well as a boat passage section (see project designs in Appendix B). The rock ramp fishway will feature boulders that protrude above the grout to break up flow vectors and provide refugia for fish as they navigate the structure. The fishway is also designed to maintain a slope of 4.5% or less and provide adequate water depth for fish passage during low flow conditions. The new diversion will serve both the FUC and RG #1. Rock materials are expected to be locally sourced basalt.

Aquatic and Riparian Habitat Enhancement

The contractor will implement streambank stabilization and aquatic and riparian habitat restoration in the project area. Restoration activities will include streambank shaping, channel shaping, rock and root wad structure installation, and riparian revegetation. Streambank and streambed will be completed upstream and downstream of the diversion infrastructure and will result in a low-flow channel and deeper pools at the newly improved diversion structure described above. Riparian revegetation will include, but is not limited to, willow clump plantings and seeding of native riparian forb species.

Headgate Improvements
The contractor will remove four of the eight FUC headgates and replace them with new steel slide gates. At the four new headgates, the contractor will install headgate automation using solar power, electric motors, and Supervisory Control and Data Acquisition (SCADA) technology. Additionally, the contractor will fabricate and install headgate footing scour plate protections and repair eroding concrete at seven of the eight FUC headgates. The contractor will also remove and replace the RG #1 Ditch headgate with a new steel headgate and will install the same automation features described above for the FUC headgates.

Throughout all construction activities, the contractor will enact pollution control to minimize adverse impacts. Following construction activities, all upland areas disturbed during onsite activities will be reseeded with appropriate native species.

Applicant Category and Eligibility of Applicant

The Colorado Rio Grande Restoration Foundation (CRGRF) is a nonprofit Category B applicant acting in partnership and agreement with the San Luis Valley Irrigation District (SLVID), a Category A applicant. The SLVID is an irrigation district founded in 1908 under the Irrigation Act of 1905 to provide storage and distribution of irrigation water to landowners within the SLVID boundaries. The SLVID comprises portions of Alamosa, Rio Grande, and Saguache counties. Rio Grande Reservoir, located near the headwaters of the Rio Grande in Hinsdale County, is owned and operated by the SLVID. The CRGRF has over 20 years of experience in river restoration and a successful track record of partnering with diverse stakeholders to implement multi-benefit irrigation infrastructure and restoration projects on the Rio Grande and its tributaries.

The CRGRF and SLVID have partnered to develop the project scope and complete project engineering designs. The SLVID owns and operates the diversion structure and headgate infrastructure included in the project scope. The letter of partnership is included in Appendix A.

Performance Measures

The primary objectives of this project are to improve diversion infrastructure and implement river restoration to improve fish and boat passage, enhance aquatic and riparian habitat, and improve irrigation diversion infrastructure function and efficiency. The project's anticipated outcomes are quantified in Figure 7, below. Actual project outcomes and benefits will be monitored and measured during and immediately following construction, as well as over a 5-year period after completion. Monitoring measurements will include photo points, cross-section surveys, water quality measurements, ditch diversion records, slope and velocity measurements in the fish passage section of the new diversion structure to evaluate fish passage, and a visual assessment of boat passage characteristics. These performance measures are discussed in more detail in *Evaluation Criterion E- Performance Measures*.

Evaluation Criteria

Evaluation Criterion A- Project Benefits (25 points)

This criterion evaluates the extent to which the project will benefit ecological values and watershed health that have a nexus to water resources or water resources management.

Subcriterion A.1: Project Benefits

General Project Benefits

Explain how the project will benefit ecological values that have a nexus to water resources or water resources management, including benefits to plant and animal species, fish and wildlife habitat, riparian areas, and ecosystems that are supported by rivers, streams, and/or other water sources, or that are directly influenced by water resources management.

- ***In your response, identify the specific ecological values benefitted and how those ecological values depend on, or are influenced by, water resources or water resources management.***

The project will provide multiple environmental benefits for the Rio Grande Basin and State of Colorado. By replacing poorly functioning and inefficient diversion infrastructure at the Farmers Union Canal (FUC) and Rio Grande #1 (RG #1) Ditch, the project will create new fish passage, stabilize streambanks, restore aquatic and riparian habitat, and reduce instream habitat disturbance caused by frequent maintenance. These results will improve the health and function of the Rio Grande in the following ways:

- Designs will ensure that small-bodied fish species, including Rio Grande chub, as well as salmonids, can easily navigate the structure. Additionally, rock clusters immediately upstream and downstream of the FUC headgates will facilitate fish passage in the north channel and create refugia for fish as they navigate the area.
- Rock clusters and root wads along with riparian revegetation will stabilize streambanks and provide benefits such as stream shading, water temperature buffering, and create deeper pool habitat for fish, resulting in increased extent and quality of aquatic and riparian habitat.
- Maintenance of existing infrastructure leads to frequent disturbance of the river channel, adversely impacting aquatic habitat. The project will consolidate the two diversions serving the FUC and RG #1 Ditch into a single, improved structure that serves both ditches. By consolidating the two diversions, maintenance needs will be significantly reduced.
- The new diversion structure will allow for adequate sediment transport, which will support healthy aquatic habitats upstream and downstream of the diversion.

In addition, the project will enhance the function and efficiency of irrigation infrastructure, which will benefit agricultural water users, protect wet meadow habitat supported by irrigation, and improve the ability of water administrators to effectively administer water rights. Project benefits are summarized below in Figure 7.

Metric	Quantity
Fish habitat opened (miles)	1.42
Riparian area revegetated (acres)	0.2
Streambank stabilized (linear feet)	646
Aquatic habitat restored (linear feet)	542
Diversion structures improved	2
Irrigation ditch headgates replaced	5
SCADA automation installed	5
Improved ditch diversion efficiency (acre-feet/year)	729.6

Figure 7. *List of project benefit metrics.*

Together, the project's benefits will improve the ability of the Rio Grande to meet the needs of multiple water users and uses.

- ***Explain whether the project will increase water supply reliability for ecological values by improving the timing or quantity of water available; improving water quality and temperature; or improving stream or riparian conditions for the benefit of plant and animal species, fish and wildlife habitat, riparian areas, and ecosystems; or through similar approaches.***

Improvements to the FUC diversion infrastructure will increase water supply reliability for ecological values by improving the timing and quantity of water available, improving water quality and temperature, and improving stream and riparian conditions for the benefits of ecological values. This project will improve diversion efficiency, ensuring accurate and timely delivery of water rights. The improved function and efficiency of this infrastructure will support and complement SLVID's local water managers' efforts to maximize reservoir releases and river flows and use flexible water management strategies, such as re-timing reservoir release schedules, to efficiently and reliably deliver water rights while also benefitting aquatic species habitat and recreation. Specifically, the infrastructure's improved function and efficiency will enable the SLVID to divert their water rights during low flow conditions. The diversion infrastructure's improved function during low flows will enable the SLVID to work with partner agencies such as the SLVWCD, Rio Grande Water Conservation District, local Groundwater Management Subdistricts, Colorado DWR, CPW, Rio Grande Water Users Association, and other reservoir operators to utilize releases from Rio Grande Reservoir for multiple uses, including stream augmentation as well as aquatic habitat and/or recreation.

By improving the irrigation infrastructure, this project will also protect and enhance infrastructure and associated water rights supporting 2,268 acres of flood-irrigated farmland. Much of this irrigated land is wet meadows, which provide critical habitat for waterbirds, such as sandhill cranes, and other wildlife.

As stated above, the project also includes riparian revegetation using willow transplants and native riparian seed, and installation of rock clusters and root wads, which will increase stream shading, help buffer water temperature, and create new and more complex pool habitat for aquatic species. Stabilization of streambanks will reduce erosion, thereby increasing overall water quality within the project area and downstream. Additionally, by reducing instream maintenance, aquatic and riparian areas will experience less disturbance and further limit erosion.

Will the project improve watershed health in a river basin that is adversely impacted by a Reclamation water project?

No, the project is not located in a river basin that is adversely impacted by a Reclamation water project.

Is the project for the purpose of meeting existing environmental mitigation or compliance obligations under Federal or State law?

No, the project is not for the purpose of meeting existing environmental mitigation or compliance obligations under Federal or State law.

If the project will benefit aquatic or riparian ecosystems within the watershed (e.g., by reducing flood risk, reducing bank erosion, increasing biodiversity, or preserving native species), explain the extent of those benefits (i.e., magnitude and geographic extent). Estimate expected project benefits to ecosystems and provide documentation and support for this estimate, including a detailed explanation of how the estimate was determined.

The existing FUC and RG#1 diversion infrastructure acts as a barrier to fish passage, fragments aquatic habitat, disrupts natural sediment transport, and requires frequent instream maintenance that further degrades aquatic and riparian habitat. The project will improve this infrastructure and provide aquatic and riparian habitat benefits, the extent of which was estimated using project designs and GIS.

Fish Passage
The project will consolidate the two diversion structures into a single diversion that will serve both ditches and increase fish habitat connectivity by incorporating fish passage. Removing the fish barrier at the FUC diversion will create fish passage to allow access to the river upstream of the project until the Rio Grande Canal. The extent of this new habitat, shown in Figure 8, was measured using GIS and is approximately 1.42 river miles.

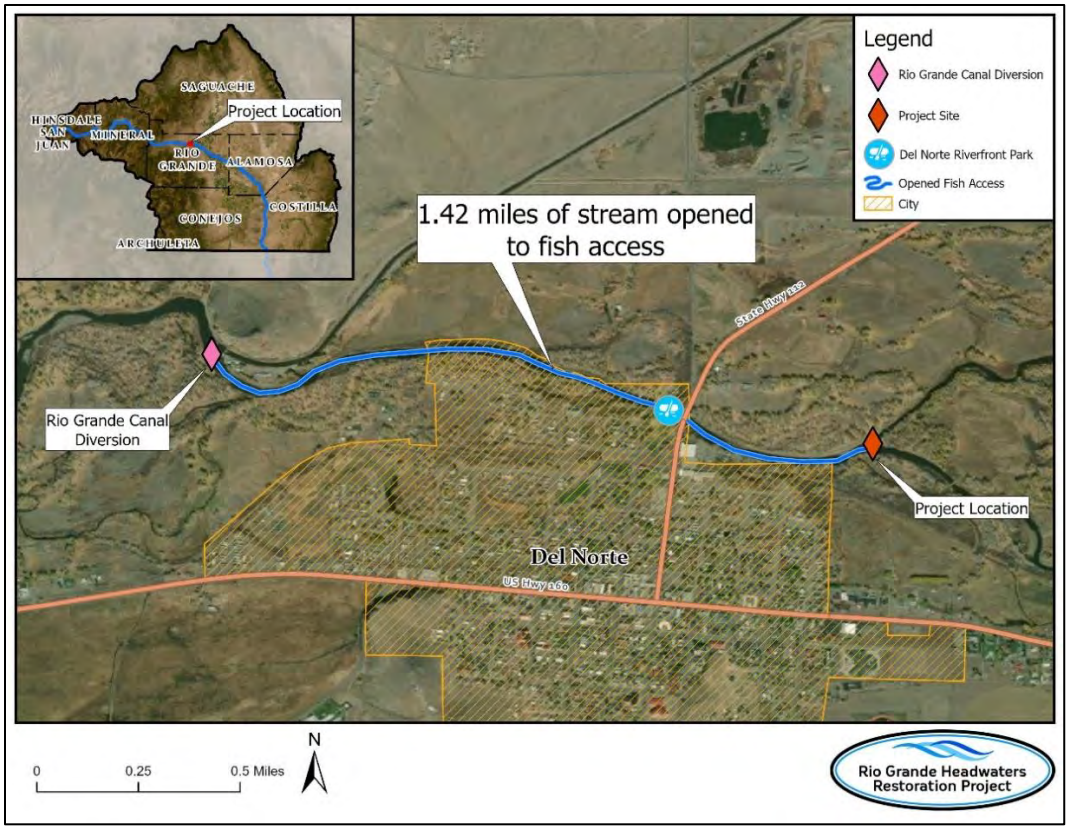

Figure 8. *New fish habitat opened on the Rio Grande by creating passage at the FUC diversion.*

The best available science on fish passage requirements was used to inform the project's fish passage design elements, considerations, and criteria (Swarr, 2018). The design of the diversion structure includes the following elements to facilitate fish passage:

- The rock ramp fish passage will maintain a slope of 4.5% or less.
- Boulders will protrude above the grouted rock ramp to reduce velocity and create refugia along the rock ramp fishway. Each boulder will allow fish to rest in the eddy formed by each boulder on their way upstream.

These features will ensure that small-bodied fish species as well as salmonids can easily navigate the structure. Additionally, rock clusters immediately upstream and downstream of the FUC headgates, which are adjacent to the diversion structure on the north channel of the Rio Grande, will facilitate fish passage in the north channel. Similar to the boulders integrated into the diversion structure's rock ramp fishway, these rock clusters with root wads will create refugia for fish as they navigate the headgates.

Sediment Transport and Aquatic Habitat

The existing FUC diversion structure causes large volumes of fine sediment to be deposited upstream of the structure due to low velocities and limited sediment transport capacity at the diversion. The accumulation of sediment upstream of the diversion and lack of sediment downstream degrades aquatic habitat. The new structure will increase sediment transport capacity, resulting in improved aquatic habitat both upstream and downstream of the

diversion. The new diversion structure will also reduce the risk of downstream flooding due to enhanced control and function of the infrastructure and an increased capacity to convey high flows. Aquatic habitat will be restored along an estimated 542 linear feet of streambed as a result of this project.

Other Habitat Benefits
The project will increase stream shading, enhance riparian bird habitat, help buffer water temperature, reduce erosion, and create new pool habitat for aquatic species by stabilizing streambanks, restoring riparian vegetation, and installing rock clusters and root wads. The project will result in 0.2 acres of riparian revegetation and 646 linear feet of stabilized streambank.

Overall, the project will contribute to the health and function of the Rio Grande, providing benefits to aquatic and terrestrial species habitat.

If the project will benefit specific species and habitats, describe the species and/or type of habitat that will benefit and the status of the species or habitat (e.g., native species, game species, federally threatened or endangered, State listed, or designated critical habitat). Describe the extent (i.e., magnitude and geographic extent) to which the project will benefit the species or habitat, including an estimate of expected project benefits and documentation and support for the estimate.

The project will benefit a variety of fish and bird species and their habitats. By creating fish passage and improving aquatic habitat, the project will benefit both native and game fish species. There are healthy, self-reproducing brown and rainbow trout populations in this section of the Rio Grande which provide important angling opportunities. Rio Grande chub (RGC) and longnose dace, both of which are native small-bodied fish species, are also present in this reach of the Rio Grande. RGC is endemic to the Rio Grande Basin in Colorado and New Mexico and is a tier 1 species of concern in Colorado, while longnose dace is abundant and not a species of concern. Historically, RGC were known to have been present in the Rio Grande mainstem and many of its tributaries, however today they only exist in a few small populations. There are currently three known aboriginal RGC populations in Colorado, one of which is located approximately 9 miles downstream of the project site near Sevenmile Plaza. (Bestgen et al., 2003; CPW, 2017). In 2017, CPW conducted an extensive fish sampling effort roughly 9 miles downstream of the FUC, near the Sevenmile Plaza. The survey revealed an aboriginal population of RGC. As such, CPW's fisheries management objectives for this reach of the Rio Grande include creating passage for and enhancing habitat to support RGC.

One of the major stressors affecting the native and non-native fish species described above is barriers to movement. As such, this project will help support these fish species by improving habitat and passage for these species. The project will create fish passage at the new FUC diversion structure, thereby improving habitat connectivity and allowing fish to access 1.42 river miles of habitat upstream (Figure 8). The fish passage component of this project has been specifically designed to allow for passage of trout species as well as RGC and other small-bodied

fish using the fish passage criteria established by Swarr (2018). Additionally, the project's streambank and streambed restoration work will enhance aquatic habitat for these fish species. Restoration metrics were estimated using GIS tools as well as project designs, and include the following:

- 646 linear feet of restored streambank through the installation of rock and root wad structures; and
- 542 linear feet of enhanced streambed/aquatic habitat resulting from restored sediment transport at the FUC diversion structures. The existing FUC diversion structure disrupts sediment transport by backing up fine sediments. The new diversion structure will allow for adequate sediment transport, thereby supporting healthy aquatic habitat.

In addition, the project will benefit the Southwestern Willow Flycatcher (SWWF), a tier 1 endangered subspecies in Colorado and an endangered subspecies under the Endangered Species Act. SWWF breed and nest from May-August throughout the San Luis Valley, and are a riparian-obligate species, relying on dense stands of willows along streams and river corridors. Restoring 0.2 acres of riparian vegetation within the project area with willow transplants and other native species will increase overall habitat availability and connectivity for SWWF.

If the proposed project will benefit federally listed threatened or endangered species, address the following:

- ***Is the species subject to a recovery plan or conservation plan under the ESA?***
- ***What is the relationship of the species to water supply?***
- ***What is the extent of the proposed project that would reduce the likelihood of listing or would otherwise improve the status of the species?***
- ***Is the species adversely affected by a Reclamation project?***

The Southwestern Willow Flycatcher (SWWF) is an endangered subspecies and is subject to a recovery plan under the ESA, which was completed in 2002 (USFWS, 2002c). As noted above, SWWF rely heavily on dense stands of willows along river and stream corridors for breeding and nesting. Additionally, wetland areas provide necessary forage for this species. The project will increase overall habitat and habitat connectivity by planting 1,200 willows to restore 0.2 acres of riparian habitat, stabilizing 646 linear feet of streambank, and restoring 542 linear feet of streambed geomorphology and aquatic habitat. This species is not adversely affected by a Reclamation project.

As noted above, the Rio Grande chub is listed as a tier 1 species of concern in Colorado. RGC is currently under consideration for ESA listing, and therefore is not subject to a recovery plan under the ESA. However, the 2018 Conservation Agreement for RGC and Rio Grande sucker (RGS) is a collaborative and cooperative document developed to implement conservation measures to reduce or eliminate threats that may warrant listing RGC and/or RGS under the ESA (RGC and RGS Conservation Team, 2018). This project will support one of the agreement objectives of improving watershed conditions and instream habitat for RGC within the project area. The new diversion structure will provide passage for RGC and other small-bodied fish. Additionally, the project will support water managers' efforts to improve streamflow conditions

to benefit aquatic species, including RGC. RGC is not adversely impacted by a Reclamation project.

Will the project address drought conditions or drought-related impacts on water supplies, habitat, species, or the ecosystem as a whole? If yes, describe past and current drought conditions and impacts and forecasted drought conditions and anticipated impacts. How will this project help build resilience to drought?

The project will address drought-related conditions and impacts to water supplies and aquatic habitat. The Upper Rio Grande watershed in Colorado has experienced periods of drought in the past. For example, in 2002 the Rio Grande's annual flow, measured at the Del Norte stream gage, was 164,000 acre-feet, compared to the river's average annual flow of 331,933 acre-feet. The 2002 drought adversely affected aquatic species due to low flow conditions and high water temperature, and left many agricultural producers without irrigation water. Another past drought period was 1953–1956, the driest four-year period of recorded streamflow for the Rio Grande (RGBRT, 2022).

In recent years, the Upper Rio Grande has experienced abnormally dry conditions, such as the 2018 water year, and is predicted to experience increasingly hotter and drier conditions throughout the end of the century (RGBRT, 2022). The Rio Grande Basin mean monthly peak flows are expected to shift to an earlier spring peak runoff and lower mid- to late-summer flows, creating shorter spawning windows and summer low-flow conditions that could adversely affect various fish species (Llewellyn and Vaddey, 2013). Additionally, low flow conditions combined with warmer air temperatures due to climate change could result in warmer water temperatures that would negatively impact cold-water fish species (RGBRT, 2022).

This project will help mitigate and build resilience to current and potential drought impacts by improving infrastructure to support water managers' efforts to manage reservoir releases to maintain adequate streamflow and water temperature for aquatic species. The project will also create deeper pools where fish can take refuge during low-flow conditions.

If the project will result in long-term improvements to water quality (e.g., decrease sediment or nutrient pollution, improve water temperature, or mitigate impacts from floods or drought), explain the extent of those benefits (i.e., magnitude and geographic extent). Estimate the expected project benefits to water quality and provide documentation and support for this estimate, including a detailed explanation of how the estimate was determined.

The project will improve water quality by reducing sediment pollution and improving water temperature and dissolved oxygen levels.

Sediment Pollution
Streambank stabilization using riparian revegetation, rock structures, and root wads, will result in decreased soil erosion and sediment pollution. The amount of soil/sediment prevented from entering the river system annually as a result of restoration actions is estimated to be 155 cubic feet per year. This estimate was developed using the channel stability index value established for this reach of the Rio Grande (0.24, established by Montgomery-Watson Harza, 2001) multiplied by the length of streambank stabilized (646 linear feet) for a total of 155 cubic feet of sediment per year. In addition, the project will improve the FUC water diversion infrastructure, which currently

Water Temperature and Dissolved Oxygen
The project will also buffer water temperature and help prevent temperatures from reaching levels that are harmful to aquatic life (considered to around 68^{o}F for trout). This will be achieved through the following two mechanisms:

- Streambank and streambed restoration, including installation of streambank stabilization structures and restored sediment transport processes at the new FUC diversion dam will result in deeper pool habitat at the project site. These pools will help buffer water temperature and provide refuge for aquatic species during low flow conditions.
- Additionally, this project provides infrastructure to support flexible water management operations, including potential re-timing of upstream reservoir releases to maintain adequate streamflow for aquatic species. By helping to meet minimum environmental streamflow targets, water temperature will also be improved.

The cooler water will also maintain higher dissolved oxygen levels, which is critical to the health of aquatic species. The benefit of re-timed reservoir releases will extend from Rio Grande Reservoir to the project location, roughly 75 river miles. The exact magnitude of water quality benefits will depend on future streamflow conditions and cannot be quantified at this time.

Are there project benefits not addressed in the preceding questions? If so, what are these benefits?

This project is located approximately ½ mile downstream of the Del Norte Riverfront Park, where a recreational playwave, boat ramp, and pedestrian river access were recently installed. With increasing recreational use, especially boating, on the Rio Grande near Del Norte, boaters are increasingly likely to encounter the hazardous FUC diversion dam. By incorporating boat passage into the design of the new diversion, this project will provide important improvements to community safety.

Water Conservation and Efficiency Project Benefits

Describe the amount of estimated water savings (in acre-feet per year) that are expected to result directly from the project. Include a specific quantifiable water savings estimate; do not include a range of potential water savings. Describe the support/documentation for this

estimate, including a detailed explanation of how the estimate was determined, including all supporting calculations.

The estimated water savings resulting from this project is 729.6 acre-feet per year. This was estimated by calculating the annual amount of water over a 5-year period, from 2018 to 2022, that could not be delivered to the FUC headgate due to inadequate diversion infrastructure at the project location. As noted above, the current FUC diversion infrastructure is not capable of creating adequate head pressure at the FUC headgates, especially during low flow conditions, to deliver water rights to the north channel Rio Grande. Additionally, diurnal streamflow fluctuations result in inaccurate water delivery to the north channel. The improved diversion structure will create adequate head pressure and the automated headgates will adjust to account for diurnal fluctuations in order to accurately deliver the appropriate amount of water to the north and south channels of the Rio Grande, even during low-flow conditions.

A detailed explanation of this calculation is provided below:
The estimated water savings were calculated by comparing the amount of water diverted at the FUC headgate on a daily basis versus the amount that was available to the FUC that day. These amounts were determined based on daily FUC diversion records, Rio Grande streamflow, and Rio Grande Reservoir releases. The amount of water available for diversion at the FUC is based on its water rights. The FUC's water rights are "in priority" and available for diversion only when flow in the Rio Grande (measured at the Del Norte stream gage) is sufficient. FUC water rights can also be stored in Rio Grande Reservoir and released throughout the irrigation season. However, reservoir releases are assessed a 10% transit loss by the Colorado Division of Water Resources Division 3 Engineer, so the water actually available for diversion is the amount released from the reservoir minus 10%.

On each day a shortage was recorded, there was sufficient flow recorded at the Del Norte stream gage to fully satisfy the FUC's in-priority water rights. It is reasonable to assume that the shortages are due to inadequate diversion infrastructure and/or inefficiencies of the existing diversion infrastructure at the project site, which controls flows between the north and south channels of the Rio Grande (Figure 1). The flow in the river often exhibits diurnal fluctuations up to several hundred cubic feet per second each day and the existing infrastructure is often unable to accommodate these changes. Figure 9 shows the amount of water that was lost to the FUC on days when it was unable to divert its full water right.

Water Year	Total Shortage on Days of Under-delivery (acre-feet)
2018	359
2019	2,143
2020	336
2021	263
2022	547

Figure 9. *Annual water year summary of total shortage on days of under-delivery.*

Based on Figure 9, the average annual shortage is 729.6 acre feet per year. Figure 10 is an hourly analysis of three consecutive days of shortage from May 13 to 15, 2022 and illustrates the water delivery shortages resulting from diurnal fluctuations in streamflow.

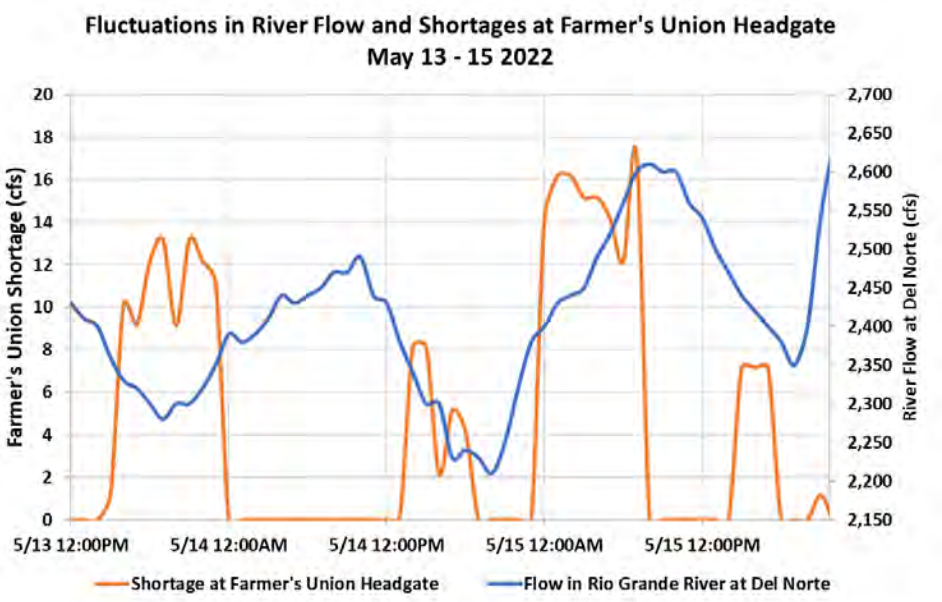

Figure 10. *Hourly analysis of shortage at FUC headgate, May 13th to May 15th, 2022.*

Explain where the water that will be conserved is currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground) and how the water is currently being used. For example, are current losses returning to the system and being used by others? Are current losses entering an impaired groundwater table, becoming unsuitable for future use? 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 water that will be conserved currently remains in the river and is diverted by the next in-priority downstream water right, located approximately 1 mile downstream. The water remains in the river for a short distance downstream of the project location, however the ecological benefits are minimal due to the short distance.

Explain, in detail, how water conserved as a result of the project will be used to increase water sustainability for ecological values. Will the project commit conserved water to remain instream? If so, provide detailed support for that commitment. Will a formal mechanism (e.g., collaboration with a State agency or non-profit organization, or other mechanisms allowable under State law) be used? Or, if a formal mechanism will not be used, describe the arrangement proposed to contribute conserved water for ecological benefits. Explain the roles of any partners in the process and attach any relevant supporting documents.

The conserved water is expected to support aquifer levels in the San Luis Valley Closed Basin and improve the timing of streamflow in the Rio Grande for aquatic species.

The conserved water will be diverted into the FUC ditch system, which delivers irrigation water in the San Luis Valley's Closed Basin. Colorado state legislation requires that aquifers in the San Luis Valley meet sustainability requirements by 2031. The unconfined aquifer system within a large portion of the Closed Basin is currently not meeting this requirement. A portion of the conserved water diverted into the Closed Basin will seep into the unconfined aquifer, resulting in aquifer recharge. Increased aquifer recharge will work toward the goal of aquifer sustainability, and in doing so, support groundwater-dependent wetlands in the Closed Basin.

The FUC stores 8,000 to 15,000 acre-feet per year in Rio Grande Reservoir during the winter storage season and releases this water during irrigation season. Using existing diversion infrastructure, the FUC is unable to deliver water rights to the north channel Rio Grande during low streamflow conditions, which occur in mid- to late-summer after spring runoff. For this reason, FUC irrigation water is released from Rio Grande Reservoir during spring runoff when streamflow is high and can be diverted into the north channel. The upgraded diversion infrastructure resulting from this project will allow for greater control of flows at the river's bifurcation and reliable delivery of water rights to ditches on the north and south channels of the river during all flow conditions. Greater water delivery control will provide the FUC water users and other partners with new opportunities to re-time reservoir releases, especially during low flow conditions, for instream and riparian benefits, without losing valuable water. Local water management partners, including the SLVWCD, Rio Grande Water Conservation District, San Luis Valley Groundwater Management Subdistricts, Colorado DWR, CPW, Rio Grande Water Users Association, and other reservoir operators intend to work together to identify opportunities to release stored reservoir water when it has the greatest positive benefits for aquatic species as well as water rights holders. These efforts are expected to result in environmental streamflow targets, which are quantified in Rio Grande Stream Management Plan (Attachment A), being met more often.

Describe the benefits that are expected to result from increased instream flows. Will increased instream flows assist in reducing basin-wide water supply and demand imbalances or in complying with an interstate compact? Will increased instream flows result in benefits to fish and wildlife? If so, describe the species and expected benefit of the project. Will the increased instream flows result in benefits to habitat or other ecological benefits? If so, describe these benefits. Will the flows specifically benefit federally designated critical habitat?

As described above, re-timed reservoir releases are expected to increase instream flows in mid- to late-summer when flows are low. The instream flows are expected to benefit aquatic species habitat by increasing pool depth and maintaining healthy water temperature and dissolved oxygen levels for fish. Fish species which will benefit include brown, brook and rainbow trout as well as native species such as Rio Grande chub and longnose dace. Instream flows are also expected to support healthy riparian vegetation and habitat for sensitive bird species including the southwestern willow flycatcher by maintaining root zone saturation. The flows will not benefit federally designated critical habitat.

Additionally, the improved diversion infrastructure and added water management flexibility provided by this project will improve planning and administration of the interstate Rio Grande Compact. Under the terms of the Rio Grande Compact of 1938 (Compact), Colorado must deliver a portion of the Rio Grande's flow to New Mexico on an annual basis (Compact, 1938). Water administrators are challenged with predicting and managing flows on a daily basis to best serve water rights holders while also meeting Compact deliveries. For this reason, inefficient and poorly functioning irrigation water delivery infrastructure, which may not predictably and reliably divert its exact decreed water right, is an obstacle to effective Compact administration. This project's irrigation infrastructure improvements will better equip water managers to serve water rights while meeting Compact deliveries with greater accuracy and precision.

Water Management and Infrastructure Improvement Benefits

If the project will make more water available, or make water available at a more advantageous time or location, how much additional water will be made available? Describe the amount of estimated water (in acre-feet per year) expected to be made available directly from the project. Include a specific quantifiable water contribution estimate and describe the support/documentation for this estimate, including a detailed explanation of how the estimate was determined.

The project will make more water available for diversion to the FUC along the north channel Rio Grande. On average, the project is expected to provide an additional 729.6 acre-feet per year to the FUC. The calculation for this estimate is described above. Additionally, the project will increase water management flexibility and is expected to make more water available between Rio Grande Reservoir and the project location during low streamflow conditions due to re-timed releases from Rio Grande Reservoir.

Restoration Project Benefits

The project does not include a restoration project component specifically related to invasive species, forest fuels management activities, or post-wildland fire sediment removal. The project includes other types of restoration benefits, which are discussed above.

Subcriterion A.2: Multiple Benefits

If the project will benefit multiple water uses (e.g., benefits to ecological values AND benefits to other water uses, including municipal; agricultural; Tribal; commercial, recreational, subsistence, or Tribal ceremonial fishing; and river-based recreation), explain how and to what extent the project will benefit multiple water uses.

The improved diversion infrastructure will benefit aquatic species, agricultural water users, and recreational users by:

- Providing fish passage for a variety of species and enhancing aquatic habitat through increased sediment transport capacity and restored;

- Consolidating the diversion structures for both the FUC and the RG #1 Ditch into a single, improved diversion, thereby significantly reducing maintenance needs for water users on both ditch systems;
- Installing headgate automation to significantly reduce on-site headgate adjustment needs, which will instead be controlled remotely; and
- Creating safe boat passage to benefit recreational boaters.

When complete the project will help ensure the Rio Grande continues to support diverse human, agricultural, and ecological communities.

If the project will provide multiple restoration benefits (e.g., benefits to ecological values or watershed health; fish and wildlife habitat; protection against invasive species; enhancement to commercial, recreational, subsistence, or Tribal ceremonial fishing; enhancement of river-based recreation), explain how.

The project will provide multiple restoration benefits to increase the ecological integrity and resiliency of this important river system. Fish passage at the new diversion will help support healthy fish populations, while boat passage will enhance river-based recreation opportunities. In addition, aquatic and riparian habitat restoration, including and riparian revegetation, installation of rock and root wads, and restored sediment transport at the diversion structure will enhance aquatic and riparian habitat complexity.

Will the project reduce water conflicts within the watershed? If so, explain how.

The project will reduce water conflicts in the Upper Rio Grande watershed as a result of increased irrigation infrastructure efficiency. Under the terms of the Rio Grande Compact of 1938 (Compact), Colorado is required to deliver a portion of the Rio Grande's flow to New Mexico on an annual basis (Compact, 1938). Colorado's annual delivery requirement varies depending upon the cumulative streamflow of the Rio Grande at the Del Norte gage, which must be measured with both precision and accuracy to minimize conflict. While cumulative streamflow determines the total amount of water delivered to New Mexico, water administrators are challenged with predicting and managing flows on a daily basis to best serve water rights holders while also meeting Compact water deliveries. As such, a primary obstacle in effective Compact administration is inefficient and poorly functioning irrigation infrastructure, which can cause water managers to over- or under-deliver Compact flow requirements. This project's irrigation infrastructure improvements will better equip water managers to efficiently serve water rights while meeting annual Compact deliveries with greater accuracy and precision. This will reduce the potential for conflict among water users by increasing predictive power and confidence in meeting Compact flow requirements.

Evaluation Criterion B- Collaborative Planning (20 points)

Is your proposed project supported by a specific strategy or planning document?

Yes, this project is identified as a priority in the 2020 Rio Grande Stream Management Plan (SMP), as well as the 2022 Rio Grande Basin Implementation Plan (BIP).

- ***When was the plan or strategy prepared and for what purpose?***

The Rio Grande Stream Management Plan (SMP) was completed in 2020 and is a collaborative and stakeholder-driven planning effort. It was developed with support from a 2018 WaterSMART Cooperative Watershed Management Phase I grant (R18AP00117). The purpose of the Rio Grande SMP is to assess stream conditions to enable local stakeholders to develop informed and data-driven management actions, with the goal of preserving and enhancing water uses and community values (CRGRF, 2020). This project is a result of the SMP planning process and collaboration between the SLVID, owner of the FUC, CRGRF, CPW, Colorado DWR, SLVWCD, and TU. Participation from diverse stakeholders ensures that both consumptive and non-consumptive needs are being met through project design and implementation.

The first Rio Grande BIP was published by the Rio Grande Basin Roundtable (RGBRT) in 2015 as a water resources management plan for the Rio Grande Basin in Colorado. The 2015 Rio Grande BIP, along with BIPs from the eight other major river basins in Colorado, helped inform the 2015 Colorado Water Plan. In 2019, the RGBT began the process of updating the original BIP, starting with an updated water resources analysis. The updated BIP was published in 2022 and includes everything from the basin's achievements since 2015 to detailed projects and strategies to meet the basin's current water needs as well as creating a sustainable water future. The BIP focuses on the actions that local partners can take to meet current and future needs as well as goals, anticipated outcomes, initiatives, and projects that provide a pathway to success.

- ***What types of issues are addressed in the plan? For example, does the plan address water quantity issues, water quality issues, and/or issues related to ecosystem and watershed health or the health of species and habitat within the watershed?***

Rio Grande SMP addresses a variety of water resources issues and challenges. The SMP includes a detailed stream health conditions assessment in which the following stream health variables are assessed: hydrologic regime, geomorphic condition, riparian vegetation, aquatic species, water quality, recreation, and diversion infrastructure. The SMP also developed environmental flow targets aimed at supporting aquatic species and recreational flow targets to support boating and fishing. These variables were assessed at the reach scale, and areas where stream health was degraded in one or more categories, the SMP identified opportunities to improve conditions. The focus of identified projects and strategies in the SMP was to improve stream health and function for multiple users and uses, ranging from riparian revegetation to enhancing aquatic habitat and opportunities to meet environmental and/or recreational flow targets more often.

- ***Is one of the purposes of the strategy or plan to increase the reliability of a water supply for ecological values?***

The Rio Grande SMP is a comprehensive plan that addresses diverse water resources issues such as water quantity, water quality, issues related to ecosystem and watershed health, health of species and habitat within the watershed, and recreation (CRGRF, 2020). As mentioned above, the SMP established minimum streamflow targets to support aquatic life. The plan also outlines strategies to meet the streamflow targets, which includes flexible water management to increase the reliability of water supply for aquatic life and other ecological values.

- ***Was the strategy or plan developed through a collaborative process?***

The Rio Grande SMP was a collaborative and stakeholder-driven planning effort which was funded in part by a WaterSMART Cooperative Watershed Management Phase I grant (R18AP00117). The SMP process engaged diverse local stakeholders representing a variety of water users and uses (CRGRF, 2020).

- ***Was the strategy or plan developed as part of a collaborative process by a watershed group, as defined in Section 6001(6) of the Cooperative Watershed Management Act OR a water user and one or more stakeholders with diverse interests (e.g., stakeholders representing different water use sectors such as agriculture, municipal, Tribal, recreational, or environmental)?***

Both the Rio Grande SMP and the Rio Grande BIP were developed as part of a collaborative planning process. The SMP was led by a nonprofit watershed group, the CRGRF, and the BIP was developed by the Rio Grande Basin Roundtable, both of which are defined as watershed groups in Section 6001(6) of the Cooperative Watershed Management Act.

- ***Describe who was involved in preparing the plan and whether the plan was prepared with input from stakeholders with diverse interests (e.g., water, land, or forest management interests; and agricultural, municipal, Tribal, environmental, and recreation uses)? Describe the process used for interested stakeholders to provide input during the development of the strategy or plan. For some Tribal strategies or plans, collaboration could include working with entities representing multiple interests within the Tribe (e.g., Tribal water agencies; Tribal fish and wildlife agencies, cities, or towns on Tribal land; Tribal fisheries; Tribal industries; and agriculture).***

The Rio Grande SMP process was guided by and reflects the interests of a Technical Advisory Team (TAT), which was composed of a diverse group of state and federal officials, local water managers, nonprofit organizations, private landowners, and other local stakeholders (CRGRF, 2020). Staff from the Rio Grande National Forest, Bureau of Land Management, US Fish and Wildlife Service, Conejos Water Conservancy District, CPW, and local government were involved. Additionally, representatives from ditch companies, farmers, ranchers, and private landowners participated in the TAT. To gain input from interested stakeholders for the SMP planning process, the following steps were taken:

- An initial stakeholder survey was distributed to document community values related to the Rio Grande.
- A series of public community meetings were held to provide a forum for stakeholder engagement and to gather input.
- Regular updates were provided to the Rio Grande Basin Roundtable and several other local water districts and stakeholder groups.
- The project was described and public meetings were advertised via email newsletters, local radio programming, and social media.
- Significant outreach to individual landowners and ditch shareholders was completed.
- TAT meetings were held throughout the planning process, with a particular focus on guiding the river health assessment and the identification and prioritization of projects.

Robust stakeholder outreach was the guiding process in the SMP's creation, and helped tailor the river conditions assessment towards areas where improved data would yield a greater understanding of the problems faced by local stakeholders.

- ***If the strategy or plan was prepared by an entity other than the applicant, explain why it is applicable to the proposed project. Describe whether and how the applicant was involved in the development of the strategy or plan. If the applicant was not involved in the development, explain why.***

Both the Rio Grande SMP and the BIP were prepared by the CRGRF, along with other stakeholders. The CRGRF was awarded funding from a WaterSMART Cooperative Watershed Management Phase I grant (R18AP00117), which allowed us to facilitate the Rio Grande SMP process. The BIP was prepared by the CRGRF on behalf of the Rio Grande Basin Roundtable, a group that facilitates discussions on water management issues, educates Coloradans, and engages local communities in water-related projects and information. The RGBRT is made up of members of the public who represent the diverse agricultural, municipal and industrial, environmental, and recreational water needs of the Rio Grande Basin. The RGBRT encourages locally-driven collaborative solutions to water management issues and collaborates with other Roundtables to find solutions to intra-basin issues.

Describe how the plan or strategy provides support for your proposed project.

- ***Does the proposed project implement a goal or need identified in the plan?***

The project meets multiple Rio Grande SMP goals by increasing agricultural water use efficiency, improving recreational safety, and enhancing aquatic and riparian habitats (CRGRF, 2020). Specifically, the project is identified as meeting seven of the Rio Grande SMP's eleven goals. The SMP goals are listed below. The goals which this project meets are in bold.

- **Improve function and reduce maintenance of irrigation infrastructure, both for water users and river health.**
- **Maintain or improve bank and channel stability, especially near important wildlife habitat and critical infrastructure such as homes, diversion structures, roads, and bridges.**

- **Maintain and improve the function of floodplains, associated alluvial aquifers, and natural channel processes.**
- **Maintain and improve the extent and condition of riparian areas.**
- Work toward aquifer sustainability and mitigate impact of groundwater withdrawal on streamflow depletion.
- **Maintain or improve water quality, with a focus on mine reclamation projects and compliance with State water quality standards.**
- **Maintain or improve long-term sustainability of Rio Grande fisheries and associated aquatic habitat.**
- **Improve infrastructure to support recreational access and use on the Rio Grande.**
- Collect additional streamflow data and continue snowpack monitoring to better characterize Rio Grande hydrology and improve streamflow forecasting.
- Consider flow targets identified in the Aquatic Habitat Needs Assessment in the context of reservoir operations.
- Using guidance from the recreational needs assessment, consider opportunities to maintain or enhance boatable days for recreational uses, especially in the context of reservoir operations and infrastructure updates.

Additionally, the project meets three of the five 2022 Rio Grande BIP's Basin Goals shown below in bold:

- **Healthy watersheds that provide critical ecosystem services, resiliency, improve water quality, and enhance local wildlife habitats.**
- Aquifers with sustainable supplies of groundwater.
- **Vibrant and resilient agriculture, recreation, municipal, and industrial economies.**
- **Adaptive, flexible, and creative water administration.**
- Citizens who are engaged and informed on local, state, and regional water issues.

The project is listed in the Rio Grande BIP under the name, "North Branch Splitter Rehabilitation Project" (RGBRT, 2022). When identified in the Rio Grande BIP, the project is listed with the representative percentages of its associated benefits. The project met agriculture needs (50% of project), environment and recreation needs (20% of project), administration needs (20% of project), and municipal and Industrial needs (5% of project).

- ***Describe how the proposed project is prioritized in the referenced plan or strategy.***

The proposed project is listed in section 4.1 of the SMP under *Goals and Priority Action Items*. As noted above, the project meets many of the SMP's goals. In the Rio Grande BIP, the project is listed as a priority project in section 6 (*Strategic Vision for the Future*) as well as in *Volume 2, Appendix A* (*Future Rio Grande Basin Projects*). The Rio Grande SMP and BIP both recognize that the project will provide benefits for river health and for multiple water users and uses.

Evaluation Criterion C- Stakeholder Support for Proposed Project (15 points)

Describe the level of stakeholder support for the proposed project. Are letters of support from stakeholders provided? Are any stakeholders providing support for the project through cost-share contributions or through other types of contributions to the project?

The proposed project has received a high level of support from local, state, and federal stakeholders. Letters of support are attached in Appendix A and include letters from:

- San Luis Valley Irrigation District
- Colorado Parks and Wildlife
- Trout Unlimited
- Senators Bennet and Hickenlooper (joint letter)
- Rio Grande Basin Roundtable
- San Luis Valley Water Conservancy District
- Colorado Water Conservation Board
- Colorado Division of Water Resources
- Town of Del Norte
- Rio Grande #1 Ditch
- McIntosh Arroya Ditch water users
- Joint letter on behalf of nine irrigation ditches on the north channel of the Rio Grande
- Rio Grande Headwaters Land Trust

The San Luis Valley Irrigation District will provide significant logistical and technical support by reviewing and providing input on engineering designs, working collaboratively with the construction contractor to enable access, and operating and maintaining the diversion infrastructure. Additionally, TAG members, including staff from CPW, TU, Colorado DWR, and SLVWCD, have reviewed, provided input on, and approved project designs. *Note - the CRGRF, CWCB, RiGHT, and RG #1 Ditch water users have committed funds to support this project*.

Explain whether the project is supported by a diverse set of stakeholders, as appropriate, given the types of interested stakeholders within the project area and the scale, type, and complexity of the proposed project. For example, is the project supported by entities representing agricultural, municipal, Tribal, environmental, or recreation uses?

The project is supported by diverse stakeholders, as listed above, and collectively represent agricultural, municipal, environmental, and recreation uses.

Is the project supported by entities responsible for the management of land, water, fish and wildlife, recreation, or forestry within the project area? Is the project consistent with the policies of those agencies?

The project is supported by entities responsible for natural resource management within the project area, and the project is consistent with the policies of those agencies. As noted above, the project is supported by the Colorado DWR, the state agency responsible for administering water rights and the Rio Grande Compact; CPW, the state agency responsible for perpetuating wildlife resources in the state; and the Rio Grande Basin Roundtable, a local organization

committed to representing the major water uses of the Rio Grande Basin and addressing basin-wide challenges. This project is included in the Rio Grande SMP and the Rio Grande BIP, a planning process throughout which these entities played an active role (CRGRF, 2020; RGBRT, 2022).

Additionally, this project is supported by the Colorado Water Conservation Board (CWCB), a state agency whose mission is to "conserve, develop, protect and manage Colorado's water for present and future generations." The CWCB awarded grant funding for final designs, permitting, and project construction.

Is there opposition to the proposed project? If so, describe the opposition and explain how it will be addressed. Opposition will not necessarily result in fewer points.

There has been no opposition to the proposed project. Diverse stakeholders, including, but not limited to the project's Technical Advisory Group, have been involved throughout the project planning process and have been provided multiple opportunities for comment and input on project designs. This communication and collaboration, which will continue throughout final project design and implementation, will ensure the project will provide benefits for multiple water users and uses. The letters of support in Appendix A illustrate the support this project has received.

Evaluation Criterion D- Readiness to Proceed (20 points)

Describe the implementation plan for the proposed project. Include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. This may include, but is not limited to, design, environmental and cultural resources compliance, permitting, and construction/installation.

The project timeline is anticipated to span from April 2024 to July 2026. Project designs are complete, and the next step in the implementation plan is environmental and cultural resources compliance. The project implementation schedule is shown below in Figure 11.

Project Task	Timeline	Notes
Environmental Compliance and Public Bid		
Contractor completes environmental and cultural resources compliance	April 2024 - August 2024	Contractor TBD
BOR reviews environmental and cultural resources permits and approvals	September 2024	
Public bid package prepared, released, and contractor selected	October 2024 - November 2024	
Project Task	**Timeline**	**Notes**
Construction and Monitoring		
Construction contractor mobilizes equipment and delivers materials	November 2024 - February 2025	Timeline allows for possible delays; includes construction management
Project construction, including diversion infrastructure replacement and river restoration	February 2025 - April 2026	Allows for two construction seasons to account for possible delays; includes construction management
Project monitoring and evaluation of outcomes	May 2026 - July 2026	Post-construction monitoring depends upon construction schedule
Final project wrap-up and reporting	June 2026 - July 2026	

Figure 11. *Project implementation schedule.*

Once construction is complete, CRGRF staff will monitor the project site and evaluate project outcomes. In addition, CRGRF will continue to monitor the project site for 5 years following construction.

Describe any permits and agency approvals that will be required, along with the process and timeframe for obtaining such permits or approvals.

The CRGRF has spoken with Reclamation staff at the Albuquerque Area Office regarding environmental compliance needs and estimated costs. Reclamation staff indicated that a contractor will likely need to complete environmental and cultural resources compliance, including all required permits and agency approvals. NEPA, ESA, and NHPA compliance will be needed, as well as a CWA 404 permit through the U.S. Army Corps of Engineers (USACE). The project is expected to fit within a USACE Nationwide stream restoration and irrigation infrastructure CWA 404 permit. The CWA 404 Nationwide permit will require an Environmental Assessment, which will include a Biological Assessment, Aquatic Resources Delineation Report, and Cultural Resources Assessment. Reclamation staff will review all required permits and approvals.

Identify and describe any engineering or design work performed specifically in support of the proposed project. If additional design is required, describe the planned process and timeline for completing the design. Priority will be given to projects that are further along in the design process and ready for implementation.

Project engineering is complete and a complete design has been prepared by Huitt-Zollars, Inc (see Appendix B). Project engineering included a detailed topographical site survey, geotechnical evaluation, historic hydrologic analysis and development of a 2-D streamflow

model, and an alternatives analysis that included five alternatives. The project's TAG reviewed alternatives and selected the alternative that meets the TAG's multiple objectives, including fish and boat passage, aquatic habitat enhancements, improved water diversion efficiency, and increased automation and reduced maintenance. The design selected by the TAG provides benefits to multiple water users and uses and is ready to be used in a public bid process.

Changes to the current design are not anticipated, however HZI will modify designs if issues are identified during the environmental and cultural resources compliance process. No additional engineering needs are anticipated.

Does the applicant have access to the land or water source where the project is located? Has the applicant obtained any easements that are required for the project? If so, please provide documentation. If the applicant does not yet have permission to access the project location, please describe the process and timeframe for obtaining such permission.

The CRGRF has permission to access the land where the project is located, which is facilitated by the SLVID. No easements are required.

Identify whether the applicant has contacted the local Reclamation office to discuss the potential environmental and cultural resource compliance requirements for the project and the associated costs. Has a line item been included in the budget for costs associated with compliance? If a contractor will need to complete some of the compliance activities, separate line items should be included in the budget for Reclamation's costs and the contractor's costs.

The CRGRF has contacted Reclamation's Albuquerque Area Office to discuss the potential environmental and cultural resource compliance requirements for the project and the associated costs. The cost estimate outlined in the budget proposal was developed based on these conversations.

Is the project completely or partially located on Federal land or at a Federal facility? If so, explain whether the agency supports the project and has granted access to the Federal land or facility, whether the agency will contribute toward the project, and why the Federal agency is not completing the project. Note: Other sources of Federal funding cannot be included within the scope of the project proposed for Reclamation funding under this NOFO. Other Federal agencies can contribute toward the completion of environmental and cultural resource compliance, provide access to land, and provide project oversight as necessary; however, any costs associated with these activities should not be included within the project budget.

No, the project is not located on federal land or at a federal facility.

Evaluation Criterion E- Performance Measures (5 points)

Describe the performance measures that will be used to quantitatively or qualitatively define actual project benefits upon completion of the project. Include support for why the specific performance measures were chosen.

The primary anticipated outcomes of this project are improved diversion infrastructure and river restoration resulting in improved fish and boat passage, enhanced aquatic and riparian habitat, and improved irrigation diversion infrastructure function and efficiency. Before, during, and after completion of project construction, the CRGRF will work with CPW and TU fisheries biologists as well as the SLVID to evaluate project benefits. The following performance measures will be used to evaluate actual project benefits:

- Measure velocity and slope of rock ramp fish passage to ensure the as-built structure meets design specifications. Onsite monitoring during construction will ensure these parameters are met.
- Visual assessments to determine adequate function of boat passage in the new diversion structure.
- Complete cross sectional surveys to document changes in streambed morphology and to evaluate how fish habitat structures and streambed shaping has improved fish habitat.
- Measure standard water quality parameters, including temperature, pH, dissolved oxygen, and conductivity.
- Collect pre- and post-construction photo documentation using established photo points. Photographic documentation will track conditions of the riparian plant communities, bank stabilization, and overall visual condition of the project area.
- Document ditch diversion rates using Colorado DWR's ditch diversion records to ensure the improved infrastructure is accurately delivering water rights.
- Review streamflow data including reservoir release amounts and Rio Grande streamflow using data from multiple stream gages to evaluate benefits of expected re-timed reservoir releases.
- Ensure the project is constructed according to engineering specifications established in the final design, including headgate automation.

These performance measures were selected specifically for this project because they will accurately evaluate the project outcomes and benefits, including aquatic and riparian habitat enhancement, fish and boat passage improvements, water quality improvements, improved timing of streamflow for aquatic species, and water diversion efficiency, which are listed in Figure 7.

All applicants are required to include information about plans to monitor improved streamflows, aquatic habit, or other expected project benefits. Describe the plan to monitor the benefits over a 5-year period once the project has been completed. Provide details on the steps to be taken to carry out the plan.

CRGRF staff will track metrics and oversee all monitoring for the project. Following project completion, CRGRF will continue to monitor the site annually for 5 years to document conditions and ensure project outcomes are meeting the needs of multiple water users and uses. Annual monitoring protocol will include each of the performance measures listed above.

Evaluation Criterion F- Presidential and DOI Priorities (15 points)

Subcriterion E.1: Climate Change

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits? Estimate the extent to which the project will build resilience to drought and provide support for your estimate.

As the Rio Grande Basin faces water shortages and prolonged periods of drought, the need for more resilient river ecosystems, as well as efficient water resources management, is becoming increasingly crucial. The Upper Rio Grande has and is expected to experience more increasingly frequent hot and dry conditions resulting in earlier spring peak runoff and lower mid- to late-summer flows that adversely impact aquatic and riparian species (Llewellyn and Vaddey, 2013). This project will help mitigate and build resilience to drought impacts by increasing water delivery efficiency to support re-timed reservoir release and by implementing river restoration.

The proposed project will assist in administration of Rio Grande water rights by improving diversion efficiency and measurement capabilities for the north and south channels of the river. Improved function and efficiency of water diversion infrastructure at the project site is expected to afford water managers more flexibility in timing of water releases from Rio Grande Reservoir, particularly during periods of low river flows. Efforts to re-time reservoir releases will mitigate drought conditions by helping to maintain adequate streamflow and water quality for aquatic species.

Riparian revegetation and aquatic habitat enhancement through installation of rock and root wad structures as well as restoring natural sediment transport at the new diversion structure will also increase resilience by creating more suitable aquatic habitat where fish and birds can take refuge, especially during hot and dry conditions. Riparian revegetation and improved floodplain habitat is also expected to allow enhance alluvial water storage within the river channel. During dry periods in late summer and fall, the water stored in the alluvium is slowly released, resulting in the augmented baseflow and increased drought resiliency

The project's infrastructure improvements are expected to last at least 30 years and river restoration efforts and are expected support the river's long-term resilience to climate impacts.

In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?

River restoration and bank stabilization will increase resiliency to flooding, particularly downstream of the project.

Will the proposed project establish and use a renewable energy source?
No.

Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation?

The proposed project will reduce greenhouse gas emissions through riparian revegetation and other restoration actions. Carbon will be sequestered by planting woody riparian species such as willows, and by seeding portions of the project area with herbaceous riparian species. Additionally, streambank stabilization and the installation of root wads has the potential to sequester carbon in the form of organic material in accumulated soil and woody material. The potential for these restoration practices to sequester carbon has been quantified by Hinshaw and Wohl (2021).

Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water? Does this infrastructure complement other green solutions being implemented throughout the region or watershed?

The project complements other recent projects in the San Luis Valley that have improved the community's access to the outdoors and to nature. For example, the Del Norte Riverfront Park, located roughly ½ mile upstream of the proposed project, provided new river access for the community of Del Norte and surrounding towns. The project also enhanced riparian vegetation along the riverfront, providing cool and shaded areas for the community to use during hot summer months. Similar efforts to improve community access to nature and the outdoors are underway in the towns of Monte Vista and Alamosa. The proposed project will complement these efforts by supporting river-based recreation opportunities and enhancing community safety through the removal of a hazardous diversion dam.

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

As noted above, climate change is expected to cause the Rio Grande to experience more frequent low-flow conditions in mid- to late-summer, increasing the risk of water temperature and dissolved oxygen levels reaching levels that stress aquatic species (RGBRT, 2022). This project seeks to maintain water temperature and dissolved oxygen levels that are healthy for aquatic species through increased instream pool habitat and re-timed reservoir releases to support instream flows.

Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?

The project will support irrigated lands which promote healthy lands and soils. As shown in figures 4 and 5, the project will protect and enhance the irrigation infrastructure used to flood-

irrigate 2,268 acres of farmland, much of which is wet meadows. In addition to providing valuable habitat, these wet meadows support healthy soils and riparian areas and help recharge shallow alluvial aquifers. Additionally, some of this flood-irrigated land is protected in perpetuity through conservation easements.

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

The project does not contribute to climate change resiliency in ways other than what is described above.

Subcriterion E.2: Disadvantaged or Underserved Communities

Will the proposed project serve or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety through water quality improvements, new water supplies, or economic growth opportunities.

The project will benefit the disadvantaged and underserved community of Del Norte located in Rio Grande County, Colorado. Agriculture is the dominant industry in the region, and a growing tourism and outdoor recreation economy is emerging. Addressing the degraded FUC diversion and headgates will directly benefit both economies by increasing water efficiencies and creating safe boat passage. With new river recreation infrastructure at the Del Norte Riverfront Park, just upstream of the project location, boaters are increasingly likely to encounter the FUC diversion dam, and the incorporation of safe boat passage into the design will provide important improvements to community safety.

Describe, in detail, how the community is disadvantaged based on a combination of variables.

The Town of Del Norte is identified as a disadvantaged community according to the US Council on Environmental Quality's Climate and Economic Justice Screening Tool (USCEQ, 2022). The median household income in Del Norte is $36,944; less than half of Colorado's household median. Of Del Norte's 1,667 residents, 782 identify as Hispanic. Grant funding is critical to implement this important project.

If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.

The Town of Del Norte meets the underserved definition in E.O. 13985. Del Norte is a rural community as defined by the US Census Bureau, and 47% of its population identifies as Hispanic.

Subcriterion E.2: Tribal Benefits

Does the proposed project directly serve and/or benefit a Tribe? Will the project improve water management for an Indian Tribe?
N/A

Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?
N/A

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

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Project Budget

Funding Plan and Letters of Commitment

The non-federal share of costs for this project is $940,000. The Colorado Rio Grande Restoration Foundation (CRGRF) has already secured this amount through a combination of state grants, private foundations, and cash contributions from project partners. The non-Federal share of the project cost comes from the following sources:

- **Colorado Water Conservation Board (CWCB) - $600,000**: The CRGRF has been awarded $600,000 in non-Federal funding from CWCB through their Colorado Water Plan Grant Program. As of March 24, 2023, this funding is secured and is currently available to CRGRF to pay for project expenses. An award letter for these funds is shown in Appendix A.
- **San Luis Valley Irrigation District (SLVID) - $180,000:** SLVID will contribute $180,000 to help cover project costs. This funding has been committed and is secured and available to the CRGRF to pay for costs throughout project implementation.
- **Rio Grande Headwaters Land Trust (RiGHT) - $150,000:** RiGHT has specifically allocated $150,000 to this project from a Gates Family Foundation grant to which CRGRF is a subgrantee. This funding has been committed and is secured and available to the CRGRF to pay for costs throughout project implementation.
- **Rio Grande #1 Ditch water users - $10,000:** The Rio Grande #1 Ditch water users will contribute $10,000 to help cover project costs. This funding has been committed and is secured and available to the CRGRF to pay for costs throughout project implementation.

Letters of commitment of matching funds from the four entities listed above are included in Appendix A.

Budget Proposal

The amount requested from Reclamation is $1,274,625.00, with $940,000.00 to be paid by the non-federal entities listed in Table 1.

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

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. Colorado Water Conservation Board	$600,000.00
2. San Luis Valley Irrigation District	$180,000.00
3. Rio Grande Headwaters Land Trust (Gates Family Foundation)	$150,000.00
4. Rio Grande #1 Ditch water users	$10,000.00
Non-Federal Subtotal	$940,000.00
REQUESTED RECLAMATION FUNDING	**$1,274,625.00**

The total project cost is $2,214,625.00, with $940,000.00 to be paid by non-federal entities, as shown in Table 2.

Table 2. *Total Project Cost Table*

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$1,274,625.00
Costs to be paid by the applicant	$0.00
Value of third-party contributions	$940,000.00
TOTAL PROJECT COST	**$2,214,625.00**

Project costs are shown by category in Table 3.

Table 3. *Project Costs by Category*

Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project - Budget					
Budget Item Description		Computation		Quantity Type	TOTAL COST
		Cost per Unit	Quantity		
Salaries and Wages					
	Daniel Boyes, Executive Director	$ 33.02	400	Hour	**$13,208.00**
	Cassandra McCuen, Program Manager	$ 30.38	400	Hour	**$12,152.00**
	Emma Reesor, Administrative Director	$ 32.52	150	Hour	**$4,878.00**
Fringe Benefits					
	Daniel Boyes, Executive Director	$ 3.01	400	Hour	**$1,204.00**
	Cassandra McCuen, Program Manager	$ 2.78	400	Hour	**$1,112.00**
	Emma Reesor, Administrative Director	$ 2.96	150	Hour	**$444.00**
Travel					
	Twenty (20) site visits via car: Alamosa, CO to Del Norte, CO (mileage) (each trip = 62 miles roundtrip)	$ 0.655	1240	Miles	**$812.20**
Equipment					
	None - included in Contractor budget				**$ -**
Supplies and Materials					
	None - included in Contractor budget				**$ -**
Contractual - Construction					
Project Bidding and Construction Management					
	Bidding Services & Construction Management (Huitt-Zollars, Inc)	$ 64,160.00	1	Lump Sum	**$64,160.00**
Project Construction - Diversion Infrastructure Replacement & Habitat Restoration					
	Project Construction (Contractor TBD)	$ 1,853,150.00	1	Lump Sum	**$1,853,150.00**
	Construction Contingency	$ 185,315.00	1	Lump Sum	**$223,505.00**
Project Environmental Compliance and Permitting					
	Environmental and cultural resource compliance costs (NEPA, NHPA, ESA, CWA; Contractor TBD)	$ 35,000.00	1	Lump Sum	**$35,000.00**
Other - Environmental and Regulatory Compliance					
	Bureau of Reclamation compliance costs (NEPA, NHPA, ESA, CWA)	$ 5,000.00	1	Lump Sum	**$5,000.00**
				TOTAL	**$2,214,625.20**

Budget Narrative

The following narrative describes each component of the project budget.

Salaries and Wages

Three key personnel will be working this project:

- The project manager is Daniel Boyes, Executive Director of the Colorado Rio Grande Restoration Foundation. Mr. Boyes is responsible for oversight of the project and its outcomes, as well as overseeing fundraising for the project. He will also assist with managing all contracts, overseeing community and stakeholder engagement, and ensuring the project is completed in a timely manner and within budget. Mr. Boyes' oversight is expected to require 400 hours at a rate of $33.02 per hour.
- The project assistant is Cassandra McCuen, CRGRF Program Manager. Ms. McCuen will lead community and stakeholder engagement efforts, coordinate directly with contractors, and ensure the project is completed in a timely manner and within budget. Ms. McCuen's project management assistance is expected to require 400 hours at a rate of $30.38 per hour.
- The project administrator is Emma Reesor, CRGRF Administrative Director. Ms. Reesor will be responsible for budget management and expense tracking, which is expected to require 150 hours at a rate of $32.52 per hour.

Personnel expenses, excluding travel and fringe benefits, total $30,238.00. The number of hours includes hours for the CRGRF staff described above to comply with all required BOR reporting requirements, including final project report and evaluation. It also includes the staff's time spent on-site during construction to document construction activities. The number of hours required for project management and administration was estimated based on staff time needed to manage past projects with a similar scope.

Fringe Benefits

The project budget includes $2,760.00 for fringe benefits for the CRGRF staff, which include Medicare, Social Security, and Workers Compensation. These amounts total $3.01 per hour for the CRGRF's Executive Director, $2.78 for the CRGRF's Program Manager, and $2.96 for the Administrative Director. These rates were calculated by the CRGRF's accountant based on 2022 tax and workers compensation costs and are less than 35% of individual staff members' compensation rates.

Travel

Collectively, the CRGRF personnel listed above expect to travel from their office location in Alamosa CO to visit the project site in Del Norte, CO a total of twenty (20) times throughout the project. The purpose of site visits is to assist with pre-bid meetings with partners and contractors, document construction activities, and complete post-project monitoring. Site visits will be day trips totaling 62 miles roundtrip, totaling 1,240 miles. The total travel cost of $812.20 was calculated using the 2023 IRS calculated mileage rate of $0.655 per mile. No other travel expenses, such as per diem, are applicable.

Equipment
No equipment purchases or rentals (outside of the construction contract) are anticipated.

Materials and Supplies
No materials or supplies (outside of the construction contract) are anticipated.

Contractual (Construction Management)
Project engineering and design was completed by Huitt-Zollars, Inc (HZI). With engineering and project designs complete, the CRGRF has contracted with HZI to develop bidding documents and complete construction management. The contract amount is $64,160.00 and the costs are itemized in Appendix C.

Contractual (Construction)
CRGRF, along with the project's Technical Advisory Group (TAG), will select a contractor to construct the project through a competitive public bid process. For a list of entities involved in the TAG, see *Technical Proposal and Evaluation Criteria, Technical Project Description*. The total estimated cost of construction is $1,853,150.00. Construction cost estimates for the river restoration, diversion structure, and headgate refurbishment are itemized in Appendix C. Cost estimates are based on an Engineer's Opinion of Probable Cost, prepared by HZI. Construction contingency in the amount of $223,505.00 was applied to the construction cost estimates for the project to account for potential increases in materials of construction costs. As described above, HZI will develop bidding documents, facilitate the public bid process, and oversee construction management.

Environmental and Regulatory Compliance
The CRGRF will work with Reclamation to ensure compliance with Federal environmental and cultural resources laws and other regulations. The budget allocates $40,000.00 to support costs associated with environmental and cultural resources compliance. This cost estimate was based on conversations with Reclamation's Albuquerque Area Office. We plan to hire a consultant to complete environmental and cultural resources compliance. $35,000.00 is budgeted for the consultant's services. Reclamation staff will need to review all permits and approvals produced by the consultant, for which there is $5,000.00 budgeted. The scope of environmental and cultural resources compliance is described in the *Technical Proposal and Evaluation Criteria* section of this application.

Third-Party In-Kind Contributions
Although not quantified in the budget, project partners expect to contribute significant in-kind support to complete this project. SLVID staff will assist with construction management and will facilitate site access. Additionally, the project's Technical Advisory Group (TAG), which includes the following entities: SLVID, CRGRF, Colorado Division of Water Resources (DWR), Colorado Parks and Wildlife (CPW), Trout Unlimited (TU), San Luis Valley Water Conservancy District (SLVWCD), and project landowners, has been involved in the project since its inception. The TAG will continue to assist when needed. Engagement from these partners will ensure project methods meet the needs outlined in the *Technical Project Description*.

Pre Award Costs

The budget application assumes that all project costs will be incurred after award.

Environmental and Cultural Resource Compliance

- ***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 project is expected to result in some minor disturbance of streambanks and the streambed, including some riparian vegetation, such as willows. Project construction will occur in previously disturbed areas at and near the Farmers Union Canal (FUC) and Rio Grande #1 (RG#1) Ditch diversion dams and headgates as well as the streambanks and streambed immediately upstream and downstream of the infrastructure. At the location of the existing diversion structure, sheet metal, tires, and concrete blocks must be removed from the channel before the new diversion is constructed. As a result of material removal and new construction, some sediment mobilization is expected, however the impact will be short-lived. Due to the temporary nature of the disturbances, and because the streambanks and streambed do not currently offer high-quality habitat, the impacts of earth moving are not expected to have a measurable impact on air quality, water quality, or aquatic or terrestrial wildlife habitat. Potential impacts to aquatic species will be minimized by completing construction activities when impacts to aquatic and terrestrial wildlife are least likely. Work will occur outside of the nesting season for sensitive bird species and the CRGRF will communicate with the local Colorado Parks and Wildlife aquatic biologist to ensure the timing of construction activities do not impact aquatic species during critical life stages, such as spawning.

- ***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?***

The USFWS Information for Planning and Consultation (IPaC) list was reviewed for federally listed species and critical habitat that could occur in the project area (USFWS, 2022a).

There is potential for southwestern willow flycatcher (SWWF) and yellow-billed cuckoo (YBCU), two federally listed species, to occur in the project area. SWWF are an endangered subspecies and YBCU are a threatened species under the Endangered Species Act. The proposed project area does not contain critical habitat for either of these species (USFWS, 2023). Additionally, the potential for these species to occur in the project area is low due to a lack of suitable habitat. Furthermore, as noted above, construction will occur outside of the SWWF and YBCU nesting season.

There is no critical habitat or likely occurrence of the endangered gray wolf, threatened Mexican spotted owl, candidate monarch butterfly, or the proposed threatened silverspot

butterfly within the project area, thus, project activities are unlikely to adversely affect these species. Preferred habitat for the gray wolf typically includes temperate forests, mountains and tundra, taiga, and grasslands (USFWS, 2022d). The area surrounding the project area is agricultural, populated with a high degree of human activity, and is not suitable habitat for wolves (CEC, 2022). The nearest known occurrences of Mexican spotted owl are in the Wet Mountains, approximately 140 miles northeast of the project area (USFWS, 2012). Small populations of milkweed host plants for the monarch butterfly were confirmed roughly 2 miles upstream of the project area in 2022, however, no recorded occurrences of the species were identified in that area (CEC, 2022). Finally, with no bog violets confirmed near the project area, there is no suitable habitat for silverspot (CEC, 2022).

- ***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.***

The USFWS's National Wetlands Inventory (NWI) online mapping tool was used to determine whether wetlands or other surface waters within the project area fall under CWA jurisdiction as "Waters of the United States" (USFWS, 2022b). Mapping results showed that only the riverine systems associated with the Rio Grande fall under CWA jurisdiction in the project area. The riverine systems are mapped as riverine, upper perennial, unconsolidated bottom, permanently flooded (R3UBH). The proposed project is not expected to have any significant or long-term impacts on these surface waters. An aquatic resources delineation report will be completed to document the extent of surface waters or potential wetlands not shown on NWI, and this will be included in USACE permitting requirements. Any impact to surface waters and/or wetland habitat during construction requiring mitigation will be mitigated through onsite riparian revegetation.

- ***When was the water delivery system constructed?***

The FUC diversion structure, headgate, and water delivery system was constructed in 1896 to support the delivery of irrigation water. The RG #1 Ditch diversion and headgate were also constructed in the late 1890s.

- ***Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.***

The proposed project will modify and upgrade the diversion structures and headgates serving the FUC and RG #1 Ditch, resulting in lower infrastructure maintenance needs. The diversion structures and headgates were originally constructed in the late 1890s. Although extensive improvements have not been made to these diversion structures, both are push-up dams that are typically modified once per year, which has impacted their historic properties. Similarly,

modern modifications and alterations to the FUC and RG #1 headgates, including modern equipment, have impacted their original historic properties.

- ***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.***

CRGRF contacted Reclamation staff at the Albuquerque Area Office and the Colorado State Historic Preservation Office (SHPO), who noted that there are historic features in the project area. However, as noted above, modern modifications to this infrastructure, including regular modifications to the existing push-up diversion structure, have impacted the historic integrity of these historic features.

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

The Compass database search tool, provided by the Colorado SHPO, was used to search for archaeological sites in the proposed project area. Search results show that no previously recorded archaeological sites are mapped in the project area.

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

The project is not expected to have a disproportionately high or adverse effect on low income or minority populations. The project will enhance public safety and support local recreational and agricultural economies.

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

No, the proposed project will not limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on Tribal lands. The project is not located on Tribal lands and will not change existing access in the area.

- ***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?***

The project is not expected to contribute to the introduction of, continued existence, or spread of noxious weeds or non-native invasive species in the area. To reduce the possibility of introducing invasive plant species into the project area, the following measures will be taken: All heavy equipment used in the project area will be cleaned of dirt and seeds prior to entering the project area; Native seed mixes appropriate for upland and wetland areas will be used to reseed disturbed areas.

Required Permits or Approvals

The CRGRF expects the following federal permits and approvals to be required:

- Clean Water Action Section 404 Nationwide Permit
- National Environmental Protection Act compliance
- Endangered Species Act Section 7 compliance
- National Historic Preservation Act Section 106 compliance

It is expected that the proposed work will fit under a CWA 404 nationwide permit. No state, county, or other permits are anticipated.

Overlap or Duplication of Effort Statement

At the time of submission, 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.

Conflict of Interest Disclosure Statement

The applicant, the Colorado Rio Grande Restoration Foundation, certifies that no current or potential conflict of interest exists at the time of submission.

Uniform Audit Reporting Statement

The Colorado Rio Grande Restoration Foundation, a non-profit organization, was not required to submit a Single Audit Report for the most recently closed fiscal year.

Letters of Support and Partnership

Letters of support from the following entities are included in Appendix A:

1. San Luis Valley Irrigation District
2. Colorado Parks and Wildlife
3. Trout Unlimited
4. Senators Bennet and Hickenlooper (joint letter)
5. Rio Grande Basin Roundtable
6. San Luis Valley Water Conservancy District
7. Colorado Water Conservation Board
8. Colorado Division of Water Resources
9. Town of Del Norte
10. Rio Grande #1 Ditch
11. McIntosh Arroya Ditch water users
12. Joint letter on behalf of nine irrigation ditches on the north channel of the Rio Grande
13. Rio Grande Headwaters Land Trust

Official Resolution

The Official Resolution from the Colorado Rio Grande Restoration Foundation is shown below.

Colorado Rio Grande Restoration Foundation
Resolution March 2023

Title: Resolution to Apply for Funding and Comply with Requirements of the Bureau of Reclamation's WaterSMART Program

Whereas, the Bureau of Reclamation has requested proposals for the 2023 WaterSMART Program, Environmental Water Resources Projects, Funding Opportunity No. R23AS00089;

Whereas, the Colorado Rio Grande Restoration Foundation, a Colorado non-profit 501(c)(3) organization in good standing has the legal authority to enter into an agreement with the Bureau of Reclamation;

Whereas, the Colorado Rio Grande Restoration Foundation has the authority to apply on behalf of the Rio Grande Headwaters Restoration Project and act as the fiscal agent for the acceptance and management of any funds awarded through the WaterSMART Program;

RESOLVED, that the Colorado Rio Grande Restoration Foundation has secured match funding to complete the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project and will work with the Bureau of Reclamation to meet all requirements, such as deadlines, set forth in the financial assistance agreement, if selected for funding through the WaterSMART Program;

RESOLVED, that the Colorado Rio Grande Restoration Foundation is capable of providing the amount of funding specified in the funding plan;

RESOLVED, the signature of the President of the Board of Directors signifies the review and approval of the application submitted to the Bureau of Reclamation;

Steven L. Russell — Date: March 27, 2023
Steven Russell
President, Colorado Rio Grande Restoration Foundation

Witnessed by:

Heather Dutton — Date: March 27, 2023
Heather Dutton
Board member, Colorado Rio Grande Restoration Foundation

Unique Entity Identifier

The Colorado Rio Grande Restoration Foundation has an active registration in SAM.
Unique Entity Identifier: GHGLEBPCZ645
Cage code: 6YUM8
DUNS: 029650383

Appendix A – Letters of Support and Partnership

Letter 1. Letter of Partnership from the San Luis Valley Irrigation District

San Luis Valley Irrigation District

March 21, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Notice of Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Projects
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

The San Luis Valley Irrigation District (SLVID) is an irrigation district founded in 1908 under the Irrigation Act of 1905 to provide storage and distribution of irrigation water to landowners within the SLVID boundaries. The SLVID comprises portions of Alamosa, Rio Grande, and Saguache counties. Rio Grande Reservoir, located near the headwaters of the Rio Grande in Hinsdale County, is owned and operated by the SLVID.

The SLVID qualifies as a Category A applicant under this Notice of Funding Opportunity. We appreciate the opportunity to partner with the Colorado Rio Grande Restoration Foundation (CRGRF) to request funding from the Bureau of Reclamation's WaterSMART Environmental Water Resources Program (EWRP) for this project. This letter certifies the following:

- We are acting in partnership with the applicant (the CRGRF).
- We agree to the submittal and content of the application.
- We intend to continue participating in the project by providing input on final project designs, facilitating access to the site, assisting the CRGRF and project engineer with construction oversight, and by maintaining and operating the improved diversion infrastructure.
- **The SLVID has committed to contributing $180,000 cash to the project.**

The Farmers Union diversion infrastructure is aging and in need of improvements, as noted in the Rio Grande Stream Management Plan. This project will replace the Farmers Union Canal diversion dam and headgates with new and improved structures that provide fish and boat passage while also diverting water more efficiently. A new diversion dam and upgraded headgates are critical to improve our operations, reduce maintenance, and protect the Canal's full water rights into the future. In addition, the new diversion dam will provide significant watershed health benefits by incorporating fish and boat passage into the new design, which will enhance fish habitat connectivity and community safety. Finally, the project will include adjacent streambank stabilization to protect our diversion infrastructure, reduce sediment in the river, improve water quality for users downstream, and enhance surrounding wildlife habitat. To complete

this project, the board has partnered with the CRGRF to help secure funding and coordinate partners.

We hope you will consider this request for funding through the EWRP. These funds are imperative to the completion of the project, which will not only benefit our shareholders, but also the health of the Rio Grande near Del Norte as well as other downstream water users.

Sincerely, Randall Palmgren

Randall Palmgren
President, SLV Irrigation District

Letter 2. Letter of Support from Colorado Parks and Wildlife

COLORADO
Parks and Wildlife
Department of Natural Resources

Monte Vista Office
0722 South County Road 1 East
Monte Vista, CO 81144
P 719.587.6908 | F 719.587.6934

3/16/2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Projects
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

I am writing on behalf of Colorado Parks and Wildlife (CPW) to encourage the WaterSMART reviewers to support the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project. This project will provide multiple benefits for aquatic species habitat and connectivity on the Rio Grande. The project was listed as a priority project in the 2020 Rio Grande Stream Management Plan (SMP), a planning process in which CPW played an active role.

The Farmers Union Canal diversion structure and adjacent headgates are important water delivery infrastructure on the Rio Grande downstream of Del Norte, CO. The diversion structure creates a barrier to fish passage, fragmenting aquatic habitat. The structure is a barrier to trout as well as native small-bodied species, limiting the productivity and health of these aquatic species. Frequent instream maintenance at the diversion structure further degrades aquatic habitat.

To address these issues, this project will replace the existing diversion with a new structure that provides fish passage. The headgates adjacent to the diversion will be retrofitted and rock clusters will be installed to facilitate fish passage. The project will result in enhanced aquatic habitat complexity and connectivity at a critical point in the river system.

This project will further CPW's fisheries management objectives, as outlined in the 2020 Rio Grande SMP and the 2018 Rio Grande Fish Management Plan, by improving aquatic habitat for this important cold water fishery. CPW staff have been involved since this project's inception by reviewing and providing input on design specifications. We are thrilled to work alongside the Colorado Rio Grande Restoration Foundation as a partner on this project.

I hope you will support this important project.

Sincerely,
Estevan Vigil,
CPW Aquatic Biologist

Letter 3. Letter of Support from Trout Unlimited

Kevin Terry, Rio Grande Basin Program Director, Western Water and Habitat Program

3/14/2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects - FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Projects Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

Trout Unlimited (TU) is excited to support this application to the WaterSMART program for the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project. This project will provide a variety of benefits for aquatic species habitat as well as agricultural water use. TU has been involved in this project from the beginning, when it was identified in the 2020 Rio Grande Stream Management Plan and has participated throughout project development by reviewing and providing input on project designs.

The Farmers Union Canal (FUC) diversion infrastructure controls flows of the Rio Grande into its North and South channels downstream of Del Norte, CO. This critical water delivery infrastructure is aging and poses multiple challenges for recreational boaters, aquatic species, and agricultural water users. The poorly functioning diversion structure and headgates make irrigation water delivery challenging, limiting water managers' ability to manage river flows for environmental and recreational benefits. The diversion also fragments aquatic habitat and forms a barrier to aquatic organism passage for trout and other native small-bodied species, injuring population health, and is hazardous for recreational boating. Regular in stream maintenance of the diversion structure results in further aquatic habitat degradation. With water-based recreation such as angling and boating becoming increasingly popular near Del Norte, this infrastructure poses a threat to public safety.

This project will replace the existing diversion with a new low-maintenance structure that incorporates both fish and boat passage, thereby increasing aquatic habitat connectivity and

Trout Unlimited: America's Leading Coldwater Fisheries Conservation Organization
85 Pinon Circle, South Fork, CO 81154
(970) 799-7682 • kevin.terry@tu.org • www.tu.org

recreational and community safety. Through improved fish passage and movement, and the installation of aquatic and riparian habitat features, the project will create additional habitat along the Rio Grande while simultaneously improving irrigation infrastructure efficiency. Additionally, this project will help facilitate flexible water management strategies for aquatic habitat and recreation and Trout Unlimited encourages the project partners and BOR to identify how this project will result in a change of water management to meet the objectives of the stream management plan, as well as those of agencies such as Colorado Parks and Wildlife.

This project complements TU's efforts in the Rio Grande Basin to improve aquatic species habitat and furthers our fisheries and watershed health goals, particularly through multi-benefit water management. It addresses multiple restoration needs and will provide benefits for multiple water users and uses. By enhancing native aquatic and riparian habitat as well as surface water irrigation infrastructure, this project will benefit aquatic species as well as human communities who rely on the Rio Grande, thereby increasing the ecological integrity and resiliency of this important river system.

I am thrilled to work with the Colorado Rio Grande Restoration Foundation as a partner and I hope you will support this important project. I would love the opportunity to communicate directly with BOR about TU's views on how this project can include multi-benefit water management. I have been working on multi-benefit flow restoration efforts in the Upper Rio Grande for nearly ten years, and I would be excited to share that experience to make this project as successful as possible.

Sincerely,

Kevin Terry,
Rio Grande Basin Program Director

Letter 4. Letter of Support from Senators Bennet and Hickenlooper (joint letter)

United States Senate
Washington, D.C. 20510

March 24, 2023

The Honorable Commissioner Camille Calimlim Touton
Bureau of Reclamation
U.S. Department of Interior
1849 C Street NW
Washington DC 20240

Dear Commissioner Touton:

We write in support of the application submitted by the Colorado Rio Grande Restoration Foundation (the Restoration Foundation) to the Department of the Interior's Bureau of Reclamation for funding from the WaterSMART Environmental Water Resources Project (EWRP) grant program. With approval, the Restoration Foundation and partner organization, San Luis Valley Irrigation District (SLVID), will restore the Farmers Union Canal (FUC) through the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project (the Project).

The Restoration Foundation has a successful track record of collaborating with diverse stakeholders to improve the Rio Grande Basin in Colorado. The FUC is an important diversion structure that divides the Rio Grande into north and south channels, and irrigates more than 43,000 acres of land downstream of Del Norte, Colorado. With EWRP funds, automated headgates will improve operations, provide safe fish passage, and reduce maintenance, while streambank stabilization will reduce sedimentation in the river to improve water quality for downstream users and enhance surrounding wildlife habitat. The Project intends to rehabilitate the aging FUC diversion dam and adjacent headgates by replacing existing structures with more efficient, fish-friendly infrastructure and providing watershed health benefits.

The Restoration Foundation and SLVID proposal focuses on the restoration of aquatic habitat and riparian stability, improvement of recreational safety, and ensuring accurate and reliable delivery of water rights to several downstream ditches. Through community engagement, restoration, and innovation, the Restoration Foundation will address agricultural, environmental, and water administration needs of the Rio Grande Basin in Colorado.

We encourage you to give the application submitted by the Colorado Rio Grande Restoration Foundation your full and fair consideration consistent with all applicable laws and regulations. Thank you for your review, and please notify our office of any funds awarded.

Sincerely,

Michael F. Bennet
United States Senator

John Hickenlooper
United States Senator

Letter 5. Letter of Support from the Rio Grande Basin Roundtable

RIO GRANDE BASIN ROUNDTABLE

February 14, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Projects
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear WaterSMART EWRP Review Committee,

On behalf of the Rio Grande Basin Roundtable (Roundtable), please accept this letter of support for the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project (project) sponsored by the Colorado Rio Grande Restoration Foundation (CRGRF). The Roundtable voted unanimously to support the CRGRF and its partners in pursuing grant funding for the project at the June 14, 2022 Roundtable meeting.

The Roundtable recognizes that the project addresses agricultural, environmental, recreation, and water administration needs facing the Rio Grande Basin. The project, which was identified as a priority project in the 2020 Rio Grande Stream Management Plan and highlighted in the 2022 Rio Grande Basin Implementation Plan (BIP), will result in the replacement of the aging diversion and headgate for the Farmers Union Canal (FUC) diversion, which bifurcates the Rio Grande into its North and South channels downstream of Del Norte. The diversion structure and adjacent headgates control flows into the North Channel, which serves the FUC and nine other irrigation ditches. Improving the diversion structure and headgates will benefit the shareholders of the FUC and downstream ditches on the North Channel by improving diversion efficiency and ensuring the delivery of water to each ditch. Additionally, the project will include improvements to aquatic habitat, streambank stabilization, riparian restoration, and boat passage, which will improve river health, water quality, wildlife habitat, and recreation opportunities. These project methods and activities meet many of the Rio Grande BIP goals. In addition to meeting the BIP goals, the project aligns with the Colorado Water Plan's Visions and Actions by meeting agricultural water needs while balancing the needs of the environment and recreation.

Thank you for your consideration of this application.

Sincerely,

Nathan Coombs
Chair, Rio Grande Basin Roundtable

Letter 6. Letter of Support from the San Luis Valley Water Conservancy District

623 Fourth Street
Alamosa, CO 81101
(719) 589-2230
Heather@slvwcd.org

San Luis Valley Water Conservancy District

March 13, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Projects
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

I am writing on behalf of the San Luis Valley Water Conservancy District (SLVWCD) to express my support for the Colorado Rio Grande Restoration Foundation's (CRGRF) *Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project*. The SLVWCD operates an augmentation program within five counties in the San Luis Valley. We replace injurious stream depletions caused by pumping of domestic, commercial, and municipal wells. The SLVWCD is also a leader in the local and state water communities, working with partners to address timely issues such as groundwater sustainability, compliance with the Rio Grande Compact, and water supply protection.

The SLVWCD partnered with the Colorado Water Conservation Board over 20 years ago to complete the 2001 Rio Grande Headwaters Restoration Study (2001 Study), a restoration master plan for 91 miles of the Rio Grande. Since that time, we have remained committed to implementation of the 2001 Study and supported the CRGRF's efforts to improve river health and function for multiple uses in the Rio Grande Basin. The *Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project* was identified in the 2020 Rio Grande Stream Management Plan, a planning process in which the SLVWCD played an active role. This project will help address agricultural, environmental, recreation, and water administration needs on the Rio Grande. It will result in replacement of the aging Farmers Union Canal (FUC) diversion and headgate, which deliver water to the FUC and nine other irrigation ditches. Improvements to the diversion and headgate will benefit shareholders of the FUC and the entire Rio Grande system by improving diversion efficiency and ensuring accurate and timely delivery of water rights. The improved function and efficiency of this infrastructure will also support and complement local water managers' efforts to use flexible water management strategies, such as re-timing reservoir release schedules, to efficiently and reliably deliver water rights while also benefitting aquatic species habitat and recreation. Additionally, the SLVWCD supports this project's proposed fish passage and aquatic habitat enhancement, streambank stabilization, riparian revegetation, and boat passage, as these activities will improve river health, water quality, wildlife habitat, and recreation opportunities.

The SLVWCD will participate in this project by reviewing and providing input on final designs. I appreciate the opportunity to comment on the CRGRF's application and I hope you will support this project.

Sincerely,

Heather R. Dutton

Heather Dutton
Manager, San Luis Valley Water Conservancy District

Letter 7. Letter of Support and Commitment of Matching Funds from the Colorado Water Conservation Board

COLORADO
Colorado Water
Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 718
Denver, CO 80203

March 21, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: Letter of Commitment of Matching Funds, BOR WaterSMART Environmental Water Resources Projects, Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

I am writing on behalf of the Colorado Water Conservation Board (CWCB) to certify that **the CWCB has awarded the Colorado Rio Grande Restoration Foundation (CRGRF) $600,000 through the Colorado Water Plan Grant program** to help fund the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project. The CWCB's funding commitment speaks to our support of this project, and I encourage the WaterSMART reviewers to support it as well.

This project will provide multiple benefits for aquatic species habitat and connectivity as well as agricultural water use on the Rio Grande. The project was listed as a priority project in the 2020 Rio Grande Stream Management Plan (SMP), a planning process encouraged by Colorado's Water Plan and the Rio Grande Basin Implementation Plan.

The Farmers Union Canal (FUC) diversion structure and adjacent headgates are important water delivery infrastructure on the Rio Grande downstream of Del Norte, CO. Currently, the FUC relies upon aging and inefficient diversion infrastructure that is incapable of diverting the FUC's water rights during low streamflow conditions, requires frequent instream maintenance by water users, creates a barrier to fish passage, and is unsafe for recreational users. Additionally, regular diversion dam maintenance adversely affects aquatic habitat and stream condition.

To address these issues, this project will replace the existing diversion with a new structure that provides fish and boat passage. The project will result in improved community safety and enhanced aquatic habitat complexity and connectivity at a critical point in the river system. Further, the improved diversion structure will improve diversion efficiency and reduce maintenance needs. This project will advance Colorado Water Plan objectives by improving aquatic habitat for this important cold-water fishery.

I hope you will give favorable consideration to this important project in the Rio Grande River basin.

Sincerely,

Anna Mauss, Chief Operating Officer
Colorado Water Conservation Board

Letter 8. Letter of Support from the Colorado Division of Water Resources

COLORADO
Division of Water Resources
Department of Natural Resources
Water Division 3 - Main Office

March 21, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Program
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

I am writing to express my support for the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project (Project). This multi-purpose project will update the aging structure which bifurcates the Rio Grande into the north and south channels near Del Norte, CO. Improving this bifurcation infrastructure will allow the Farmers Union Canal, along with nine other ditches along the north channel and one ditch on the south channel, to access their water rights at all flows. It will also benefit water users on the nearby Rio Grande #1 Ditch which diverts near the bifurcation. The project needs and opportunities were identified in the Rio Grande Stream Management Plan (SMP) and updated Rio Grande Basin Implementation Plan (BIP), planning processes in which the Colorado Division of Water Resources played an active role.

As the Division Engineer for Division 3 of the Colorado Division of Water Resources (CDWR), it is my responsibility to ensure water in the Rio Grande Basin is administered accurately and in accordance with applicable decrees and interstate compacts. The need for accurate water management in the Rio Grande Basin is becoming increasingly crucial in the face of water shortages and prolonged drought. This project will improve CDWR's ability to administer water rights on both the north and south channels of the Rio Grande through the rehabilitation of the bifurcation structure, which includes the installation of automated flow gates. Improvements such as these also assist my office in helping to ensure Colorado's continued compliance with the Rio Grande Compact.

This project offers an opportunity to upgrade aging infrastructure in order to meet multiple water needs. I hope you will consider this funding request and the benefits it will have to the Rio Grande Basin.

Sincerely,

Digitally signed by
Craig Cotten
Date: 2023.03.21
17:06:02 -06'00'

Craig W. Cotten
Division Engineer, Division 3

301 Murphy Drive, Alamosa, CO 81101 P 719.589.6683 F 719.589.6685 www.colorado.gov/water
Jared S. Polis, Governor | Dan Gibbs, Executive Director | Kevin G. Rein, State Engineer/Director

Letter 9. Letter of Support from the Town of Del Norte

GATEWAY TO ALL SEASON FUN

TOWN OF DEL NORTE
140 SPRUCE STREET
P.O. BOX 249
DEL NORTE, CO 81132

PHONE NO. (719) 657-2708
FAX NO. (719) 657-2035

March 21, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Projects
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

Please accept this letter of support from the Town of Del Norte for the Colorado Rio Grande Restoration Foundation's (CRGRF) project, the *Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project*. The Farmers Union Canal diversion is located just downstream of Del Norte and the Del Norte Riverfront Park (DNRFP). The CRGRF's proposed project would complement and build upon recent improvements at the DNRFP by removing a barrier to fish passage and improving community safety at the FUC.

The Town of Del Norte has a median income well below the Colorado State average and struggles to provide municipal amenities beyond its responsibility for water, sewer, public safety, roads, and maintenance. As such, the Town Board is very supportive of opportunities to create new public river access and recreation infrastructure, as well as improving fish and wildlife habitat. Starting in 2015, the Town of Del Norte partnered with the CRGRF and other local organizations to plan and implement river access, recreation, and aquatic habitat improvements at the DNRFP. The improvements, completed in 2021, include a whitewater play wave, boat ramp, fish habitat structures, pedestrian river access, additional parking, and a wheelchair-accessible picnic shelter, and interpretive signage. The new amenities and enhanced fish habitat have provided significant positive benefits to the community of Del Norte and SLV by creating a welcoming, safe space for community members, boaters, and anglers, while also improving river health.

As recreational boating and fishing becomes increasingly popular at the DNRFP, boaters and angles are increasingly floating downstream of Del Norte and encountering the Farmers Union Canal diversion structure, which is currently a safety hazard. The *Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project* would build upon the recent river access and aquatic habitat improvements at the DNRFP by creating safe boat passage and rectifying the fish barrier created by the Farmers Union Canal.

The Town of Del Norte is proud of the natural features that surround us, especially the Rio Grande. We enthusiastically support the CRGRF's project proposal, as it will enhance aquatic habitat, support fish populations, expand recreation opportunities, and improve community safety.

Thank you very much for your consideration of this funding request.

Town of Del Norte

Chris Trujillo, Mayor

Letter 10. Letter of Support and Commitment of Matching Funds from Rio Grande #1 Ditch water users

March 24, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: Letter of Commitment of Matching Funds - BOR EWRP
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

The Rio Grande #1 Ditch Company (Ditch Company) is pleased to partner with the Colorado Rio Grande Restoration Foundation (CRGRF) to request funding from the Bureau of Reclamation's WaterSMART Environmental Water Resources Projects (EWRP) program to improve the diversion infrastructure for the Rio Grande #1 Ditch to provide multiple benefits to river health and agricultural water users.

The Rio Grande #1 Ditch diversion and headgate are aging and difficult to operate. The push-up diversion structure requires regular maintenance and does not create adequate head pressure at our headgate, resulting in inefficient irrigation water delivery. Additionally, the act of maintaining the diversion negatively impacts river health and wildlife habitat. This project will result in installation of a new diversion structure to replace the existing Farmers Union canal diversion structure. The new diversion will serve both the Famers Union Canal and the Rio Grande #1 Ditch. As a result, the existing push-up dam we currently maintain for our ditch will be removed. This will increase the efficiency of our ditch operations and also reduce the impact of ditch maintenance on river conditions.

In order for the project to come to fruition, **the Ditch Company commits to contributing $10,000 towards this project**. We are in full support of this important project, and we thank you for considering the CRGRF's proposal. The requested WaterSMART funding is crucial to the completion of this project, which will not only benefit our shareholders, but also downstream water users and the health of the Rio Grande itself.

Sincerely,

Mark Deacon, Rio Grande #1 Ditch representative

Letter 11. Letter of Support from McIntosh Arroya Ditch water users

February 23, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Projects

Dear WaterSMART Review Committee,

Please accept this letter of support for the *Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project* on behalf of the McIntosh Arroya Ditch water users. The McIntosh Arroya Ditch diverts water off the south channel of the Rio Grande downstream of the Farmers Union Canal diversion structure. We are in full support of this project, led by the Colorado Rio Grande Restoration Foundation (CRGRF).

Downstream of Del Norte, CO the Rio Grande bifurcates into two channels, and the Farmers Union Canal's diversion infrastructure controls river flows into each channel. This critical diversion infrastructure is responsible for delivering water rights to ten ditches on the north channel and one (the McIntosh Arroya Ditch) on the south channel. Currently, the diversion dam and headgates are in poor condition and are incapable of accurately delivering irrigation water to downstream ditches. Water control is most challenging during low streamflow conditions, which can also adversely impact fish and wildlife.

The proposed project would solve these issues by installing an improved diversion structure and headgtaes capable of efficient and accurate water control and water rights delivery. This project would directly benefit water users on 11 ditches, including the McIntosh Arroya Ditch, and the broader community.

Thank you for considering the CRGRF's proposal and we hope you will support this project.

Sincerely,

Cheb Yund, McIntosh Arroya Ditch representative

Letter 12. Joint Letter of Support on behalf of nine irrigation ditches on the north channel of the Rio Grande

February 10, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: BOR WaterSMART Environmental Water Resources Program
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

On behalf of the North Channel Rio Grande ditches, we write to express our support of the Colorado Rio Grande Restoration Foundation's (CRGRF) *Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project*. As water rights holders on the nine ditches located on the North Channel of the Rio Grande near Del Norte, CO, we are in full support of this multi-benefit project. The Farmers Union Canal diversion is in poor condition, as noted in the Rio Grande Stream Management Plan. The structure lacks an adequate diversion structure, which requires significant maintenance and makes it challenging to divert the full allocation of water rights to the North Channel Rio Grande, especially during low flows. The diversion also adversely impacts aquatic habitat by forming a barrier to fish passage, especially during low flows, and as a result of frequent in-channel maintenance. Additionally, the headgates are aging and in need of repairs and improvements.

For the reasons mentioned above, a new, low maintenance diversion structure that diverts more efficiently and provides fish passage is critical. The new diversion structure, paired with headgate improvements, including SCADA automation, will allow for efficient and reliable water delivery. Not only will the project benefit the shareholders of the nine ditches located on the North Channel Rio Grande, but it will also improve river health and community safety, both now and into the future.

We are in full support of this important project, and we thank you for considering the CRGRF's proposal.

David R Cotten
Weiss Ditch Representative

Off Ditch Representative

Brey Ditch Representative

Raber Ditch Representative

Richard T. Davis
Rio Grande #2 Ditch Representative

Grand Slam Ranch LLC
Hall-Voss Ditch Representative

Grand Slam Ranch LLC
Kane Callan Ditch Representative

Norman Slade
Cochran Pioneer Ditch Representative

Richard T. Davis
Anna Raber Ditch Representative

Letter 13. Letter of Support and Commitment of Matching Funds from Rio Grande Headwaters Land Trust

RIO GRANDE
HEADWATERS LAND TRUST

February 27, 2023

US Department of Interior - Bureau of Reclamation
WaterSMART Environmental Water Resources Projects – FY2023
Funding Opportunity No. R23AS00089

Re: Bureau of Reclamation WaterSMART Environmental Water Resources Projects -
Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project

Dear Bureau of Reclamation WaterSMART Review Committee,

On behalf of the Rio Grande Headwaters Land Trust (RiGHT), I am writing to express our support of the Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project. This project aligns with RiGHT's goals to protect and support wildlife habitat, water resources, agricultural heritage, and scenic landscapes in the San Luis Valley through the replacement of the Farmers Union diversion and headgate and downstream river restoration. In addition, a portion of the river restoration will take place on a RiGHT easement, improving riparian habitat and streambank stability on a conserved working ranch.

RiGHT has partnered with the Colorado Rio Grande Restoration Foundation (CRGRF) and other local partners to secure funding through the Gates Family Foundation to further collaborative restoration and conservation efforts across the San Luis Valley. This includes a total of **$150,000 in funding committed** to support the replacement of the Farmers Union Canal diversion structure and headgate.

RiGHT is excited to work with the CRGRF to improve diversion infrastructure that is critical to protecting agricultural lands and flood irrigated wetlands. These actions will benefit agricultural water uses, fish and wildlife habitat, boaters, and anglers, having a ripple effect on the local economy and ecology.

I appreciate your consideration of this grant request.

Sincerely,

Andy Brown
Executive Director, RiGHT

PO Box 444 Del Norte, CO 81132
(719) 657.0800
info@riograndelandtrust.org
riograndelandtrust.org

CONSERVING OUR LAND, WATER AND WAY OF LIFE IN COLORADO'S SAN LUIS VALLEY