

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

2020 WaterSMART: Drought Resiliency Project
Grant Application
FOA No. BOR-DO-20-F002



Rosedale-Rio Bravo Water Storage District
Groundwater Banking and Conveyance Improvement Project

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Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

Table of Contents

	<u>Page</u>
1. Technical Proposal	
1.1 Executive Summary	2
1.2 Background Data	3
1.3 Technical Project Description	5
1.4 Performance Measurements	7
1.5 Evaluation Criteria	9
2. Project Budget	
2.1 Funding Plan	13
2.2 Budget Proposal	14
2.3 Budget Narrative	15
2.4 Budget Form	16
3. Environmental Compliance	
3.1 Impacts to Surrounding Environment	17
3.2 Endangered or Threatened Species	17
3.3 Wetlands	18
3.4 Water Delivery System	18
3.5 Modifications to System Features	18
3.6 National Register of Historic Places	18
3.7 Archeological Sites	18
3.8 Other Environmental Concerns	19
4. Required Permits or Approvals	19
5. Official Resolution	20
Appendices	
Appendix A Project Summary Matrix	22
Appendix B Preliminary Project Schedule	23
Appendix C Houghton Weir Technical Information	24
Appendix D KR & CVC SCADA Technical Information	27
Appendix E McCaslin Recharge Ponds Technical Information	28
Appendix F McCaslin Recharge Ponds Layout	29
Appendix G SGMA Plan Fact Sheet	30

Groundwater Banking and Conveyance Improvement Project
 Rosedale-Rio Bravo Water Storage District
 Kern County, California

1. Technical Proposal

1.1 Executive Summary

Applicant Information: October 16, 2019
 Rosedale-Rio Bravo Water Storage District
 Dan Bartel – Project Manager

Bakersfield, Kern County, California
 Markus Nygren – Technical Contributor

The Groundwater Banking and Conveyance Improvement Project is designed to improve the overall District system efficiency by better managing surface water supplies in wet years and by increasing the District’s ability to intercept high flow surface runoff for storage within the Kern Fan groundwater basin. This will be accomplished via three strategic project components:

1. McCaslin Recharge Project - Construction of approximately 115 acres of recharge ponds, turnout structure, and weir structure.
2. Houghton Weir Structure – Construction of weir structure to increase conveyance capacity to sustain future recharge projects downstream, and accurately measure and manage water moving through the District.
3. Kern River and Cross Valley Canal Intake Flow Measurement and SCADA Improvements to accurately measure and manage water coming into the District.

These three components support the proactive approach by USBR to drought resiliency by better utilizing surface water supplies, and significantly improving water management practices. Two main ways that a storage district can build long term drought resiliency: more recharge basins (greater wetted area) and through improved water management (taking advantage of every drop of surface water when available). This Project meets the Objective of the Funding Opportunity Announcement No. BOR-DO-20-F002 by leveraging RRBWSD money and resources through cost sharing with Reclamation to develop projects that that will increase the reliability of water supplies; improve water management; and provide benefits for fish, wildlife, and the environment to mitigate impacts caused by drought. This project is expected to store an average of **5,742 AFY** and would proceed immediately upon notification of grant funding, break ground in January 2021 and could be completed by August 2021. The proposed projects are not located on any Federal Facility.

Funding Source	Funding Amount
Non-Federal Entities	
Rosedale-Rio Bravo Water Storage District	\$ 2,346,933
Rosedale-Rio Bravo Water Storage District (in-kind)	\$ -
Non-Federal Subtotal	\$ 2,346,933
Requested Reclamation Funding	\$ 750,000
Houghton Weir Construction	\$ 365,000
Recharge Project Construction	\$ 350,000
Reclamation NEPA Review	\$ 35,000
Total Project Funding	\$ 3,096,933

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

1.2 Background Data

Rosedale-Rio Bravo Water Storage District (RRBWSD or the “District”) is located in the southern San Joaquin Valley in the Kern County, immediately west of the City of Bakersfield, and has a gross area of approximately 44,000 acres (Figure 1.). The District lands identified for the spreading facility are located within the Kern River Alluvial Fan where historic runoff created an efficient aquifer system from which the District recharges groundwater so as to support groundwater pumping for agricultural, municipal, and industrial uses. The District is an independent special district, organized on August 27, 1958, under the provisions of the California Water Storage District Law (Division 14 of the Water Code of the State of California) (the “Act”). The District’s boundaries encompass a portion of the City of Bakersfield. The property within the District is agricultural, municipal and industrial. Of the total 44,000 acres, approximately 28,000 acres are currently in crops, which include forage, nuts, dairy, almonds, pistachios, and vegetables. The balance is a mix of open ground, rural development (0.25-10 acre lots), and light industrial businesses that mainly support the agricultural and petroleum industries. These uses are served potable water by both individual and mutual domestic water wells.

In 1959, the voters within the District approved a general project consisting of the construction of recharge basins and water conveyance facilities capable of capturing water supplies and percolating those supplies into the underground aquifer for replenishment of water pumped by landowners within the District (the “Recharge Project”). The construction of the initial phases of the Recharge Project was completed in 1962. Additional improvements to the Recharge Project have been made and additional facilities and properties have been added since the original project was completed. Subsequent to the completion of construction of the Recharge Project, the District acquired a State Water Project (SWP) water supply through the Kern County Water Agency (the “Agency”). RRBWSD has also been a historic user of surplus Friant-Kern Canal flows and a user of Kern River water via its contract with the Kern County Land Company (now City of Bakersfield) to serve irrigation demands and for groundwater recharge programs.

The District operates a water delivery system consisting of 25 miles earthen canals, 2 miles of pipelines, check structures, pipelines, and wells all designed for the primary function of groundwater banking and conjunctive use (recharge and recovery). There are approximately 20 connections to landowner irrigation systems that are used for in-lieu groundwater recharge purposes. The District acquires wet-year supplies via various contracts and banking programs which require that a portion of the supplies are returned in dry years. Conveyance systems for banking return are a mix of pipelines and earthen canals, thus water evaporation and seepage reduces the project’s return capabilities. The District and its landowners are served by the Pacific Gas and Electric Company; the vast majority of energy used for groundwater recovery and conveyance is electrical based.

Groundwater Banking and Conveyance Improvement Project
 Rosedale-Rio Bravo Water Storage District
 Kern County, California

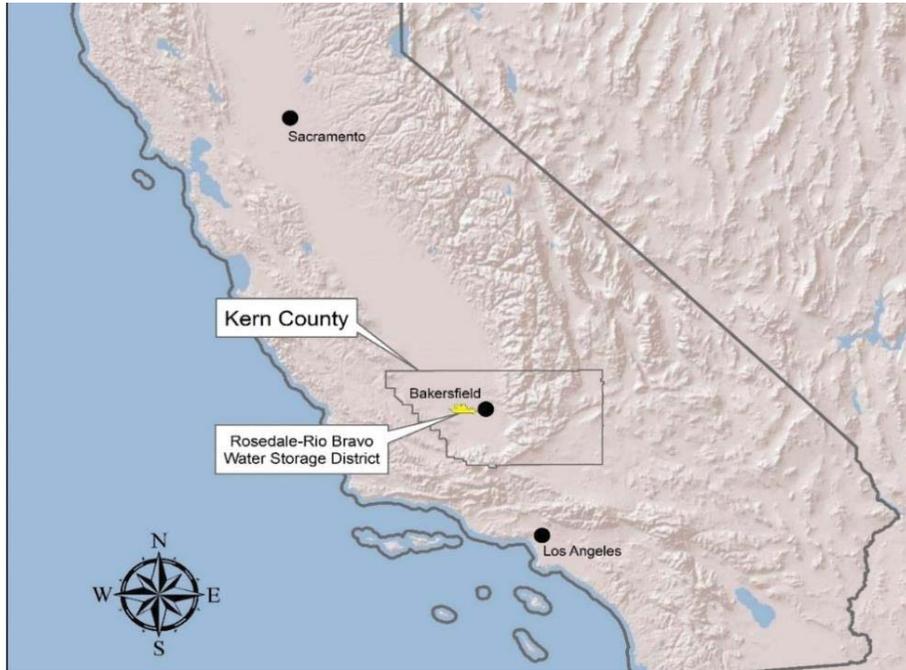


Figure 1: Project Location

The District has developed and enjoys partnerships with many different state, federal, and local entities to help improve water management and meet future water demand needs. Currently and historically, RRBWSD has worked with the U.S. Department of the Interior, Bureau of Reclamation (USBR) and Fish and Wildlife Service to provide water to the Kern National Wildlife Refuge (KNWR) to the northwest of the District and to obtain water from the Central Valley Project (CVP). RRBWSD also partners with multiple Federal Friant-Kern water agencies for mutually beneficial recharge and recovery projects, namely: Arvin-Edison WSD, Kern-Tulare WD, and Delano-Earlimart ID. Below is a list of the various contracts involving RRBWSD and Federal agencies:

KNWR Purchase & Conveyance Agreements
 Year 2007

CVP Short-Term/Temporary Water Service Contracts (non-CVP Contractor)

- | | |
|--------------------------------|--------------------------------|
| Year 1965, No. 14-06-200-769A | Year 1973, No. 14-06-200-4032 |
| Year 1973, No. 14-06-200-229A | Year 1973, No. 14-06-200-7228A |
| Year 1973, No. 14-06-200-4162A | Year 1978, No. 14-06-200-229A |
| Year 1993, No. 3-07-20-W1058 | Year 1995, No. 5-07-20-W12 |
| Year 2001, No. 01-WC-20 | Year 2003, No. 03-WC-20-2654 |
| Year 2011, No. 11-WC-20-0090 | Year 2011, No. 11-WC20-0104 |

Federal Exchange and Banking Agreements

- Arvin-Edison WSD, 1997, 2003, 2009, 2011, 2012, 2013
- Delano-Earlimart ID, 2009
- Kern-Tulare WD, 2001, 2004, 2005, 2007

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

The District recently acquired approximately 115 acres of land, known as the McCaslin Property, in the Kern County of the Southern San Joaquin Valley, 5 miles west of Bakersfield. The Houghton Weir an existing structure is a capacity constraint for delivering higher flows throughout the District. Two of the main surface water entry points into the District are through the Kern River Turnout and the Cross Valley Canal, the measurement tools used at these points are not capable of remotely reporting flow measurements. Under this proposal, the District seeks to clear and grub, build recharge berms, and interbasin flow structures on the McCaslin property, a turnout and weir structure upstream of the McCaslin property to serve it, replace the Houghton Weir to provide capacity for McCaslin Project and improved flows to other areas, and remotely access flow measurements at key inflow locations. The District's proposal for increased groundwater storage capabilities and better water management tools will more efficiently utilize surface water supplies in wet years and benefit the District's and Kern County Sub-basin's goal of groundwater sustainability.

The District contracts with the state of California for a water supply from the Sacramento/San Joaquin Delta ("Delta"). Surface supplies have become increasingly less reliable south of the Delta. For instance, while the District pays for 100% of the water contracted, nearly \$3 million per year, the District receives on average only 60% of the water. In an effort to ensure stable sources of water supply due to environmental, climatic, and legal restrictions in the Delta and comply with landmark Sustainable Groundwater Management Act legislation, the District is looking to develop a series of projects intended to acquire and store additional water at a reduced overall cost. Two components of the overall project improvements are described in this proposal, which is to add new spreading ground capacity and an additional weir structure to deliver wet year water to spreading grounds. In order to support recharge of wet year supplies, two key added components of this project are to be constructed: 1) McCaslin Recharge Ponds, 2) Houghton Weir Capacity and Measurement Improvements, and 3) Kern River and Cross Valley Canal Flow Measurement and SCADA Improvements.

These improvements complement the District's overall water supply improvements and their response to the severe drought impacting western states. In March 2014, the District declared a drought emergency and has initiated Drought Relief Projects, including expediting the construction of 11 recovery wells and conveyance facilities to provide for emergency drought water needs. Added direct recharge and conveyance facilities would allow the District to better utilize these critical recovery facilities during drought conditions. The proposed project components of this proposal are intended to improve absorptive capacity and optimize these recovery activities going forward with the addition of the ability to absorb wet year water supply.

1.3 Technical Project Description

The Groundwater Banking and Conveyance Project is designed to improve overall District system efficiency by increasing the District's ability to intercept high flow surface runoff for storage within the Kern Fan area groundwater basin. This will be accomplished through three strategic project components: McCaslin Recharge Ponds (115 acres), Houghton Weir Capacity and Measurement Improvements, and Kern River and Cross Valley Canal Flow Measurement and

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

SCADA Improvements. The stored groundwater as a direct result of the Project will provide additional water to:

- Support District water-users (agricultural, municipal, and industrial).
- Provide enhanced protection against prolonged drought and climatic changes.
- Reduce groundwater pumping lifts and resulting energy savings.
- Support third-party banking and transfer partners.
- Provide intermittent wetlands for wildlife environmental benefits.

This Project meets the Objective of Section A.2 of the Funding Opportunity Announcement No. BOR-DO-20-F002 by leveraging RRBWSD money and resources by cost sharing with Reclamation for developing project components that expand Drought Resiliency Projects that will increase the reliability of water supplies; improve water management; and provide benefits for fish, wildlife, and the environment to mitigate impacts caused by drought. These improvements are a result of the District's March 2014, drought emergency declaration when it began implementing critical "Drought Relief Projects" that it had identified in response to the severe 2012-2016 drought impacting western states. For project implementation, RRBWSD is taking a five-step approach to handle the major tasks associated with the project:

1. **Feasibility Study** – RRBWSD technical staff and consultants, have evaluated the feasibility of the projects as shown on the Project Summary Matrix and Water Management Program Score and B/C ratios in Appendix A and in reports and technical memos in Appendix C, D, and E. The evaluation includes considering issues such as water system delivery effectiveness, construction reasonableness, environmental impacts and cost/benefit ratios.
2. **Environmental and Regulatory** – RRBWSD will take the necessary measures to satisfy federal and state environmental requirements and regulations. Using the environmental information obtained from various studies, required steps will be taken to meet CEQA and/or NEPA compliance and all necessary permit applications will be submitted. Refer to Sections 2. and 3. for further information on environmental and regulatory compliance.
3. **Design** - This task includes the preliminary and final designs of the facilities.
4. **Installation** – This task includes procurement of materials, contractor bidding and selection, inspection, and construction.
5. **Inspection and Testing** – Upon completion of construction, a detailed inspection will occur, equipment training, testing and calibration, as well as a performance evaluation will be followed by a final report to provide an account of project progression and expenditures. In addition, any state and federal required project completion reports will be provided to the respective agencies. Ongoing monitoring of project performance and evaluation will be conducted to determine actual water conservation and energy benefits.

As with most major projects, many aspects or details from each of the listed steps require parallel progression and overlap is necessary to produce an efficient project schedule. It is estimated that the Project will be completed in approximately 20 months, however, reimbursement for expenses

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

incurred may occur over 24 months. Please see Appendix B for a preliminary Project Schedule. This project consists of the following specific components:

- 1. McCaslin Recharge Ponds** – RRBWSD seeks to construct approximately 100 net acres of direct recharge ponds via the placement of 108,000 CY of compacted levees that are approximately 2-5 feet in height. Upwards of 15,000 acre-feet per year (AFY) (typically 2 years in 10) of recharge water will be conveyed from pond to pond via 6 inter-basin check structures. Water would be conveyed into the facility by means of a newly constructed sluice gated intake and diversion weir within the Goose Lake Channel. Approximately 50 cfs of intake capacity would be required to serve this site. See Figure 2. And Appendix F for component location and Appendix E for additional technical and budget information.
- 2. Houghton Weir Structure** – RBWSD seeks to replace and modernize the undersized Houghton weir, which currently consists of nine flashboard bays. This component will relocate the flashboard bays and replace them with three automated Langmann Gates equipped with a SCADA system that is capable of running off solar powered batteries. This structure is an important modernization improvement for the District as this weir structure maintains the water level in critical delivery turnouts, while also providing information on the volume of water delivered. This structure will provide the added capacity for the McCaslin Recharge Ponds component as well as other existing recharge areas in the District. See Figure 2. for component location and Appendix D for additional technical and budget information.
- 3. Kern River and Cross Valley Canal Flow Measurement and SCADA Improvements** - RRBWSD currently runs blind, except for daily field measurements, as such management is forced to operate in a conservative manner to minimize potential of overtopping of systems and spill creating facility and property damages. It is difficult to assess any real water potential other than by adding SCADA systems at critical inflow points (Cross Valley Canal Turnout and Kern River Turnout) will allow operators and managers a much-improved access to real time data. It is proposed to add data loggers with cellular based transmitters connected to either an existing flow meter and/or new water level transducers to allow for web-based data access at two key locations. See (Figure 2) for component locations and Appendix E for additional technical and budget information.

1.4 Performance Measurements

Performance measurements will be a key instrument to quantifying water better managed and saved through this project. After project completion pertinent data will be included in our annual operations report with a monthly summary of flow measurements over the Houghton Weir and the SCADA measurements from the two intakes. The data will be compared with projected annual water management as calculated in this grant. Flow at the McCaslin Weir will be reported, and recharge volumes can be calculated based on real data, compared to projected data.

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

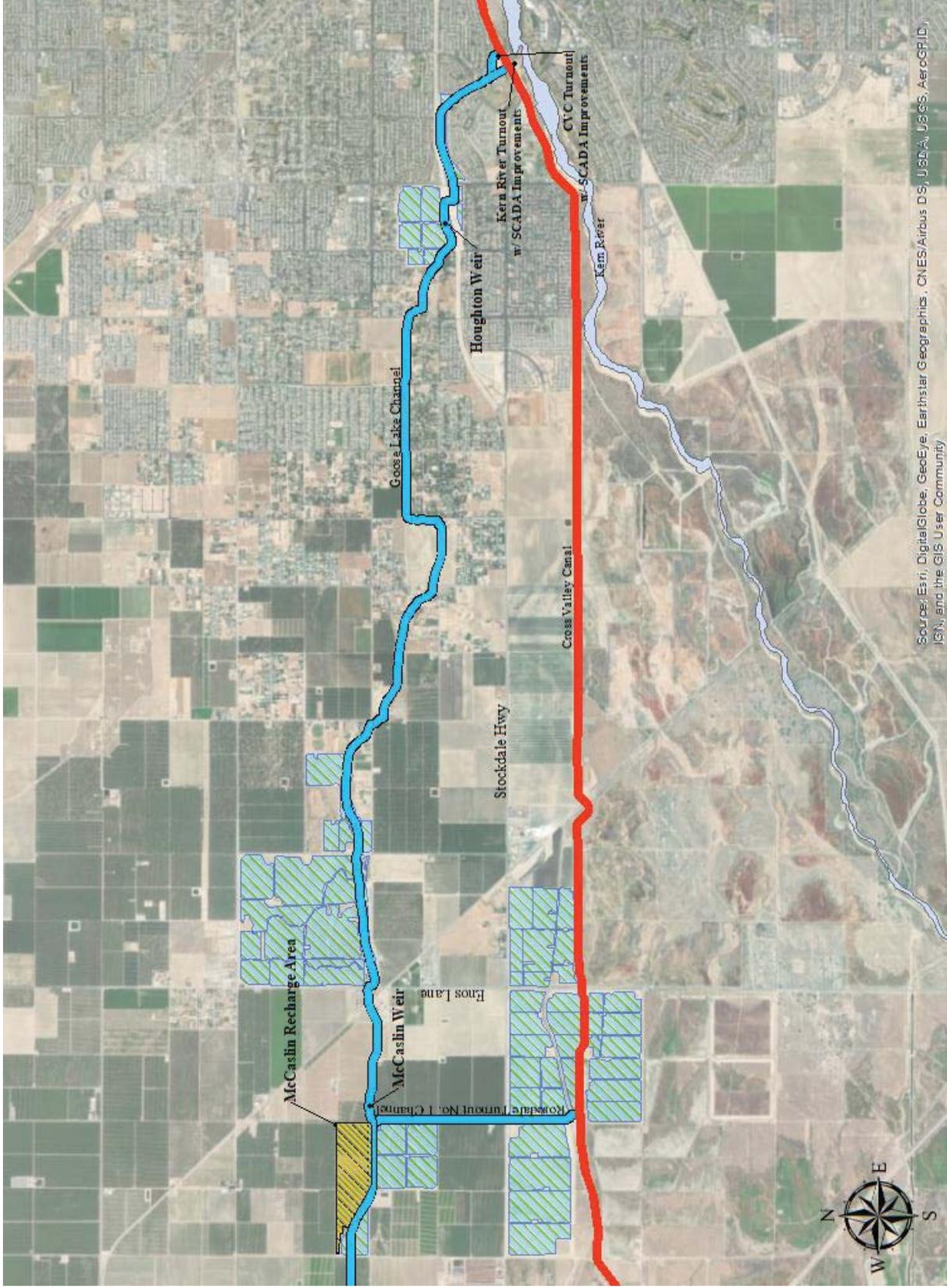


Figure 2: District Project Component Locations

1.5 Evaluation Criteria/Performance Measures

1.5.1 Evaluation Criterion A-E.1.1. Project Benefits

- *How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?*
- *Will the project make additional water supplies available?*
- *Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)?*
- *Will the project have benefits to fish, wildlife, or the environment? If so, please describe those benefits.*

Drought Resiliency

The RRBWSD has been built on the strategy of accessing wet year water supplies for aquifer storage sufficient to weather prolonged drought periods. This project will reduce irrigation demand from existing overlying orchards and convert that demand into an area dedicated for groundwater recharge. The project will also improve insufficient facility capacity restraints, and flow measurement control structures for improved management. The benefits will exist for 50 plus years.

Water Supplies

The project will make an **additional 5,742 AFY** available for district use. This number originates from knowledge of local hydrology in the area, leading to expected recharge rates of around 0.6 ft/day. Due to historical data, an anticipated 440 days of operational use spanning over 10 years. The existing almond orchard will be removed hence decreasing the local and District demand by 3 AF/acre. Improved conveyance capacity will increase access to supplies by 100 cfs for 140 days over 10 years.

RRBWSD'S average annual water supply (1993-2013) for agricultural use is about 108,000 AFY from various sources (i.e. Kern River, State Water Project, Central Valley Project, banked groundwater, exchanges, Safe Yield, and precipitation). With climatic changes and SGMA requirements, the District is around 11,000 AFY in shortage, the completion of this project, an additional 5,742 AF (5% of annual District supply) would reduce the shortage by one-half.

$$\frac{\text{Additional Water Supplies} = 5,742 \text{ AFY}}{\text{Water Deficit in the District} = 11,000 \text{ AFY}} = \mathbf{52\% \text{ of deficit cut}}$$

Water Management

RRBWSD has identified the benefit of equipping surface water turnouts with SCADA systems to reduce inaccuracies currently in the system. The SCADA accessible data and flow control technology will minimize operation outages and help maximize recharge efforts. The estimated quantity of **45,000 AFY of water** will be better managed with the addition of the SCADA measurement technology, and the reconstruction of the Houghton Weir. These modifications to the Houghton Weir and SCADA improvements are crucial to the District because the current

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

system has a capacity restriction which, constrains our ability to rapidly fill existing and future recharge sites, like the McCaslin Recharge Ponds.

Estimated Amount of Water Better Managed = 45,000 AFY = **42% of water better managed**
Average Annual Water Supply = 108,000 AFY

Environmental/Wildlife Projects

The project will also be very beneficial to local wildlife and migratory species. At the McCaslin Property an aged almond orchard will be converted to 114 acres of seasonal wetland and upland habitat. The San Joaquin Valley is crucial nesting ground for many species of waterfowl, and migratory bird species. Historically birds have flown south to avoid freezing temperatures and enjoy natural wetlands, this project will give migratory species a better habitat to breed and nest.

New Marketing Tool or Program

This district is currently developing a water marketing platform. Water savings from the removed orchard will be made available to that market for sale by the District and then exchange between landowners. The purpose of this tool is to encourage water trading within the District, and ultimately to reduce local overdraft.

Metering/Water Measurement Projects

The District will be employing water level transducers over crests and converting to flows. The Cal Poly Irrigation Training Research Center has recommended this methodology along with information gathered while attending USBR training sessions in Lakewood CO. Better data of diversion, water level, and demand information would also be provided to our numerical groundwater model that the District has developed, which evaluates and helps predict project and drought impacts.

1.5.2 Evaluation Criteria B - E.1.2. Drought Planning and Preparedness

The District has a plan set in place to reach SGMA requirements for drought preparedness, see SGMA Fact Sheet in Appendix G. With benchmarks set for projects and management actions the District plans to achieve sustainability be as early as 2040. This project is schedule for implementation by 2030. By 2030 the District hopes to implement 10,000 AFY of water supply development to groundwater sustainability to protect against prolonged drought periods.

To ensure that a drought plan was developed with the input of stakeholders, an exhaustive yearlong stakeholder process was undertaken by the District. Meetings were held monthly and will continue to occur during the implementation period. DWR has set guidelines for climate change in the next 50 years and how it will affect the availability of water supplies. The demands and the projections have both been adjusted in the drought plan, and this project addresses those future water projections with climate change over a 50-year span.

1.5.3 Evaluation Criteria C - E.1.3. Severity of Actual or Potential Drought Impacts to be addressed by the Project

- Describe the severity of the impacts that will be addressed by the project

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

- *Describe existing or potential drought conditions in the project area*

The project is surrounded mainly around the agricultural industry and the impacts from SGMA. To the extent that water levels fall another 50 feet below previous drought conditions, additional monetary impacts of \$640M will be reconciled by district, agricultural, industrial, and municipal water users. These impacts are water availability and quality driven. Ongoing environmental impacts are addressed by SGMA and have significant impacts on the agriculture industry. Along with the large monetary obligation, landowners will be provided less water, and be required to fallow more land to reduce demand on the groundwater basin. In the years 2012 through 2016 the entire Kern County Basin suffered a historical drought. Due to the water demand and lack of supply the groundwater aquifer endured significant losses, some water levels fell 200 feet in just four years. Fortunately, good hydrology and proactive efforts similar to this proposed project have helped water levels recover to an extent.

1.5.4 Evaluation Criteria D - E.1.4. Project Implementation

- *Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*
- *Describe any permits that will be required, along with the process for obtaining such permits.*
- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*
- *Describe any new policies or administrative actions required to implement the project.*
- *Describe how the environmental compliance estimate was developed. Has the compliance cost been discussed with the local Reclamation office?*

With funding assistance from the Bureau of Reclamation in connection with a 2020 WaterSMART Grant, the District will proceed with implementing the proposed project according to the estimated schedule. Please see Appendix B for a proposed Project Schedule.

It is the intention of the District to satisfy all CEQA and NEPA compliance requirements in December 2020, prior to any project groundbreaking activities of project components proposed under the project. An Environmental Impact Report (EIR) for like components included in this grant application was circulated and certified in 2015 at a programmatic level. Continued project planning, designs and procurement will be performed concurrently with project level CEQA and NEPA process when best suited for planning efficiency. The District will contract with applicable engineering design firms to complete designs and specifications by November 2020. The bidding and contract administration will be handled by the District, while an appropriate design firm will be contracted by the District for the appropriate sections. Wherever possible, and as the schedule will allow, project component tasks are staggered to make the best use of time but as with all large projects efficient planning is required and therefore parallel efforts and overlap are unavoidable. Once the project is CEQA and NEPA compliant, the construction activities for components to include ground disturbing activities will begin. Additionally, project activity will have to be coordinated with normal District operations. The District wants to begin

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

construction of the projects as early as February 2021 and finish construction by August 2021. Please refer to Appendix B for the full schedule.

Besides CEQA and NEPA requirement there are no other administrative actions required apart from the actions required by the SGMA legislation. Based on prior projects with Reclamation and other similar departments, no additional compliance costs have or need to be discussed.

1.5.5 Evaluation Criteria E - E.1.5. Nexus to Reclamation

How is the proposed project connected to a Reclamation project or activity? Increases in District operational efficiencies will indirectly and directly benefit multiple Federal project districts by increasing the District's recharge abilities and resultant dry-year supplies that it can return to them via banking and exchange projects and reducing groundwater recovery costs that they pay as part of those projects.

Will the project benefit any tribe(s)? No, tribes are in the District, so while the District strives to benefit tribes and native people wherever possible, this project will be of no benefit to them.

Does the District receive Reclamation project water? The District does receive Reclamation project water through the Central Valley Project via the Friant-Kern Canal.

Is the project on Reclamation project lands or involving Reclamation facilities? While the District does receive Reclamation water, the project only resides on District property, and doesn't involve any Reclamation facilities.

Is the project in the same basin as a Reclamation project or activity? Yes, the District shares the same Kern County Sub-basin with many Federal contract districts.

Will the proposed work contribute water to a basin where a Reclamation project is located? Yes, the project is located within the CVP Place of Use.

1.5.6 Evaluation Criteria F - E.1.6. Department of the Interior Priorities

1.a. Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment

This project is a major step forward for the District utilizing modern technology and science to better water management practices. With SCADA systems set up at the District's two major surface water turnouts, data will be readily accessible for more accurate water measurements. From that, faster adjustments can be made in the District to maximize water resources, and to have a better understanding of wetted areas and recharge rates.

1.d. Review the Department's water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity.

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

Goose Lake Channel the main channel in the District, has capacity constraints on providing water for District recharge facilities. By replacing the Houghton Weir, a critical bottleneck in the system is removed, and higher flows and a better flow measurement west of Allen Road is obtained. Landowners in the District use in-lieu demand when surface water supplies are available, with another 115 acres of recharge basin available, more water is stored in the ground, as well as more water available via surface water supplies to adjacent farmers. The biggest conflict affecting landowners in the San Joaquin Valley is the Sustainable Groundwater Management Act (SGMA). This project helps to reduce a portion of the groundwater deficit and move in that right direction to a sustainable and resilient groundwater balance.

2. Project Budget

2.1 Funding Plan

1. *How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).* The District's cost-match will be covered by the District's capital facility improvement portion of the regular budget. The District maintains a capital improvement account and receives revenue through delivery of water to rate paying customers and land assessments.
2. *Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs.* The District will not assess any in-kind contributions to project costs.
3. *What project expenses have been incurred?* The District has incurred feasibility and conceptual design consultant costs from both Meyers Civil Engineering and Cal Poly ITRC of about \$25,000.
4. *Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.* No funding partners are involved in the project, thus, no letters of commitment were necessary.
5. *Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards your 50 percent cost share unless otherwise allowed by statute.* There are currently no other Federal partners for this proposed Project.
6. *Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.* There are no pending funding requests for this Project.

Groundwater Banking and Conveyance Improvement Project
 Rosedale-Rio Bravo Water Storage District
 Kern County, California

Table 1. Summary of non-Federal and Federal funding sources

Funding Source	Funding Amount
Non-Federal Entities	
Rosedale-Rio Bravo Water Storage District	\$2,346,933
Rosedale-Rio Bravo Water Storage District (in-kind)	\$ 0
Non-Federal Subtotal	\$2,346,933
Requested Reclamation Funding	\$ 750,000
Total Project Funding	\$3,096,933

Table 2. Funding Group II funding request

Funding Group II Request			
	Year 1 (FY 2020)	Year 2 (FY 2021)	Year 3 (FY 2022)
Funding Requested	\$375,000	\$375,000	\$0 (Project Complete FY 2022)

Currently, there is no other funding request submitted or funding applications pending approval. The Project is a substantial construction project where Reclamation funding would increase the likelihood of successful project completion and continue a RRBWSD and USBR partnership. The Project directly makes available a quantifiable amount of additional water that can be used to meet increasing water demand. Although federal assistance is requested, if USBR declined to participate in the Project, RRBWSD would continue to seek other funding opportunities to move forward and attempt to complete the Project.

2.2 Budget Proposal

The estimated cost of the project including feasibility study, environmental assessments, all associated construction cost, CEQA documents and permits is \$3,096,933. Please refer to Table 4. below for detailed estimated cost. RRBWSD is requesting approximately **\$750,000** (or about 24% of total project costs) in federal funding from USBR for this Project. The Project will directly provide drought resiliency beyond twenty years and RRBWSD is estimated to provide 76% of project funding if the requested award amount is granted. At this time, RRBWSD is solely responsible for the funding of the Project.

Table 3. Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost by Source
Recipient Funding	76%	\$ 2,346,933
Reclamation Funding	24%	\$ 750,000
Other Federal Funding	0%	\$ 0
Total	100%	\$ 3,096,933

Groundwater Banking and Conveyance Improvement Project
 Rosedale-Rio Bravo Water Storage District
 Kern County, California

Table 4. Budget Proposal

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT
 Groundwater Banking and Conveyance Improvement Project

Item	Budget Item Description	RRBWSD Project Costs			Budget			Explanation of Estimate
		\$/Unit	Unit	QTY	RRBWSD Funding	Reclamation Funding	Total	
1	Contractual / Construction						3,031,933	
a	Houghton Weir Project	1,069,225	LS	1	704,225	365,000	1,069,225	engineers est.
b	Recharge Project	1,523,790	LS	1	1,173,790	350,000	1,523,790	past project
b	SCADA Project	9,050	LS	2	18,100	0	18,100	quotes
c	Surveying and Testing	44,678	LS	3	134,034	0	134,034	past project
d	Engineering Design and Administration	143,392	LS	2	286,784	0	286,784	past project
2	Environmental and Regulatory Compliance						65,000	
a	Reclamation NEPA Review	35,000	LS	1	0	35,000	35,000	past project
b	CEQA Preparation and Studies	30,000	LS	1	30,000	0	30,000	past project
	E&R percent of total cost						2%	
3	Total						3,096,933	0
a	RRBWSD Contribution				2,346,933			
b	Reclamation Contribution					750,000		
c	Percent Funded by RRBWSD						76%	

2.3 Budget Narrative

The following is a description of the line items in the above table.

Contractual / Construction – Work in this section will be done by contractors and consultants. All required materials as shown in detailed project budgets from the feasibility study are shown in Appendices C, D and E. This is the estimated cost for engineering design and specifications for facility design, surveying and construction management (including inspection) as well as contractor construction activities for each component.

Environmental and Regulatory Compliance - According to previous FOA guidelines, "...a minimum amount budgeted for environmental compliance should be equal to 1-2 percent of the total project costs." The District intends to work with Reclamation to determine the potential environmental effects the proposed Project may have in relation to NEPA, NHPA, ESA, and the Clean Water Act to ensure compliance with all applicable environmental laws. Based on inspection of the FOA, it is understood that Reclamation will determine who will perform the work under this category (i.e. Reclamation, the Applicant, or a consultant). For purposes of this grant proposal, based on previous project performed by the District, it was assumed that the work would be performed at an estimated cost equal to 2.1 percent of the total project costs. The District will provide all funding related to environmental and regulatory compliance for the Project in regards to CEQA requirements.

- a) This is the estimated cost to conduct project biological and cultural surveys by qualified consultants as required for CEQA and NEPA compliance.
- b) This is the estimated cost to prepare all necessary studies, reports and other documents for the project. This includes cost for environmental consultants.

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

- c) This is the percent of the total project cost that is attributed to environmental and regulatory compliance.

Total – These are the totals for RRBWSD contribution, Reclamation contribution, and the total estimated cost of the project.

- a) This is the proposed total contribution by RRBWSD.
- b) This is the proposed total contribution by Reclamation.
- c) This is the calculated portion funded by RRBWSD.

2.4 Budget Form

Included below is Form SF-424C, Budget Information-Construction Programs as specified by the FOA.

3. Environmental Compliance

The Groundwater Banking and Conveyance Improvement Project is comprised of three project components all of which are located along Goose Lake Channel. In general, all potential project sites and associated project activity will be located or conducted on existing facilities, right-of-ways, and lands that are routinely used, operated, and maintained, with the exception of the recently purchased McCaslin Property. The McCaslin Recharge Ponds would all occur on recently purchased property. RRBWSD maintains and operates similar facilities on a regular basis. Maintenance and operation activities include, but are not limited to, grading canal roads and canal banks, repairing or replacing head gates, silt and vegetation maintenance, pump removal and repairs, ditch tending, vehicle and personnel traffic.

RRBWSD has certified an Environmental Impact Report according to the regulations and guidelines of the California Environmental Quality Act (CEQA) on a programmatic basis and will proceed as required for project level CEQA compliance. Additionally, National Environmental Policy Act (NEPA) compliance will be required if Federal funds are applied to the project. RRBWSD will assist and support the Bureau of Reclamation in the NEPA compliance process as necessary.

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

3.1 Impacts to Surrounding Environment

The majority of proposed project components will require earth-disturbing activities. When considering the potential surface area to be disturbed, the recharge pond levee construction would be the single project component that would disturb the most surface area. This would require clearing and grubbing of approximately 115 acres of area that is currently heavily disturbed with on-going intensive farming activities. Other components of this project would require minimal excavation to construct interbasin structures.

RRBWSD, as well as local contractors, have extensive experience with excavating activities and utilize best management practices concerning dust and erosion control. RRBWSD or the contractor would access a water truck or portable pumps for necessary dust suppression. Dust impacts to the environment will be minimal but will be evaluated according to CEQA and NEPA requirements.

All earth disturbing activities will be done absent of local irrigation or drain water in the canals or drains. Disturbed earth will have no contact with flowing water and therefore will have no impact to irrigation supply water or drain water. Project activities would not occur on natural stream or river channels. There will be no impacts to water but the potential impacts will be evaluated according to CEQA and NEPA requirements.

All project activities will occur on routinely disturbed ground and therefore will have minimal or no impact to animal habitat. The presence of working facilities along with routine RRBWSD and farmer activities make it unlikely for animals to use project sites as habitat. Potential impacts to animal habitat will be evaluated according to CEQA and NEPA requirements. Any necessary biological or cultural surveys will be conducted by qualified personnel as required for CEQA and NEPA compliance.

3.2 Endangered or Threatened Species

Although all project activities are going to be conducted on land that is routinely disturbed by farming operations, Kern County is known to have habitat that can support endangered and threaten species. Listed below are several species listed as a Federal endangered species near the project sites. This list below is only intended to provide a list of potential endangered or threaten species in the general region of RRBWSD. By the limited nature of the construction, the District does not expect to have any impact on any of these species or corresponding suitable habitat within the project sites.

1. Tipton Kangaroo Rat
2. Blunt-nosed Leopard Lizard
3. San Joaquin Kit Fox
4. Burrowing Owl

Potential impacts to Endangered or Threatened Species will be evaluated according to CEQA and NEPA requirements. As part of the environmental work, the District will retain a certified biologist to conduct a biological reconnaissance survey and prepare a report to evaluate potential

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

impacts to biological resources within the project sites. If potential impacts are identified, the District will follow recommendations by the biologist to reduce those impacts to a less than significant level.

3.3 Wetlands

According to the U.S. Fish and Wildlife Service National Wetlands Inventory, there are no wetlands within project boundaries. There are however wetlands indicated in the nearby vicinity of some of these project sites but are not expected to be negatively impacted by this project due to the limited nature of the ground disturbance.

3.4 Water Delivery System

RRBWSD operates a surface water delivery system with more than 25 miles of earthen canals. The water delivery system was developed in the 1970's. Many of the canal alignments have been realigned or modified over that time. Also, almost all of the check and gate structures have been replaced or updated over the same period in order to maintain a working water delivery system.

3.5 Modification to System Features

None.

3.6 National Register of Historic Places

There are no registered historical landmarks within the project boundaries. RRBWSD does not have any knowledge of any other items that are listed or may be eligible for listing under the National Register of Historic Places. If Reclamation deems necessary, the District will retain a private cultural resources management consultant or arrange for Reclamation staff to again carry out a consultation to evaluate if any buildings or structures are eligible under the National Register of Historic Places. The expectation is that none will be identified inasmuch as the project improvements will be constructed in actively disturbed agricultural lands.

3.7 Archeological Sites

RRBWSD does not have any knowledge of known archeological sites within or in the vicinity of the proposed project sites. There has been over a century of ongoing farming operations and it is very unlikely that archaeological sites would be currently located or discovered within district boundaries. If Reclamation deems necessary, the District will work with Reclamation cultural resources staff to obtain clearance for archaeological sites within the project area. The District will retain a private cultural resources management consultant or arrange for Reclamation staff to carry out a consultation to conduct a Phase I intensive pedestrian cultural resource survey, and a cultural resources records search and Native American consultation to evaluate any impacts to cultural sites. Impacts to cultural resources are not expected. Nevertheless, the District is

Groundwater Banking and Conveyance Improvement Project
Rosedale-Rio Bravo Water Storage District
Kern County, California

prepared to implement any necessary mitigation measures should cultural resources be identified for any component of the Project.

3.8 Other Environmental Concerns

Other environmental and cultural concerns that were noted regarding the Project area are:

1. Construction of the Project will support the important agricultural-based economy in the Southern San Joaquin Valley and should have only positive impacts on low income or minority persons living in the region.
2. The Project will not limit access to or ceremonial use of Native American sacred sites or tribal lands.
3. The Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native species in the region.

4. Required Permits or Approvals

Due to the nature and location of selected project sites, we expect that no third-party approval or permits will be required from local, state, or federal agencies in order to break ground for the Project. Contractors will be required to prepare and submit routine stormwater pollution prevention plans (SWPPP) as necessary.