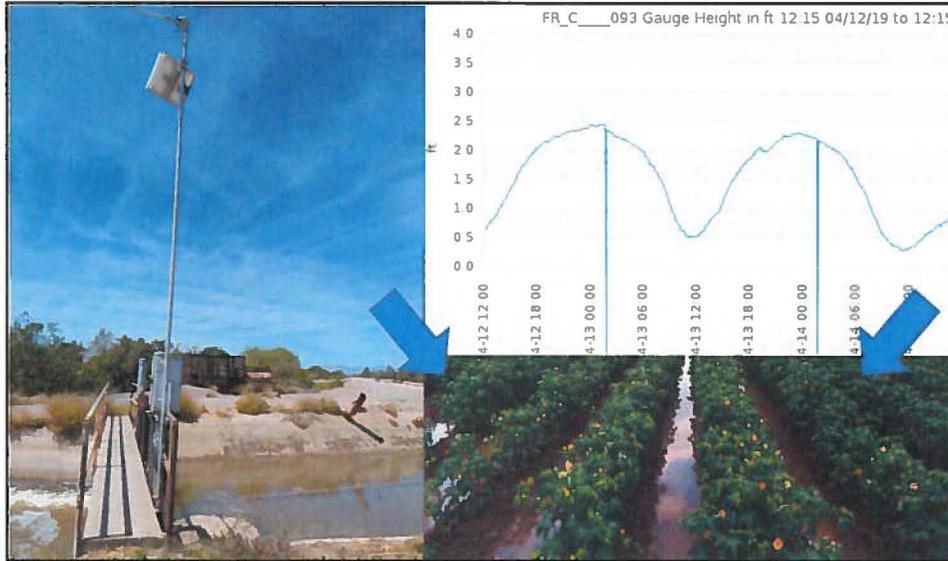


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**WaterSMART Grants: Small-Scale Water Efficiency Projects for FY 2019  
FUNDING OPPORTUNITY NO. BOR-DO-19-F005**



**Advanced Metering Infrastructure (AMI)  
Upgrades to Irrigation Wells Project**

**PROJECT CATEGORY: Irrigation Flow Measurement / SCADA**

**TOTAL PROJECT COST: \$157,111**

**Applicant**

**El Paso County Water Improvement District No. 1  
13247 Alameda Avenue, Clint, Texas 79836  
Mailing Address: PO BOX 749, Clint, Texas 79836**

**Project Manager**

**Pete Rodriguez, Maintenance Manager  
13247 Alameda Avenue, Clint, Texas 79836  
[prodriguez@epcwid1.org](mailto:prodriguez@epcwid1.org) | 915-872-4000**



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# I TECHNICAL PROPOSAL AND EVALUATION CRITERIA

## A. Executive Summary

**Date:** April 19, 2019  
**Applicant Name:** El Paso County Water Improvement District No. 1  
**City, County, State:** El Paso, El Paso County, Texas  
**Project Name:** Advanced Metering Infrastructure (AMI) Upgrades to Irrigation Wells Project

**Project Manager:** Pete Rodriguez, Maintenance Manager  
**Telephone:** 915-872-4000  
**E-mail:** [prodriguez@epcwid1.org](mailto:prodriguez@epcwid1.org)

**Project Funding Request:** The total project cost is \$157,111 and the District is requesting \$75,000 in federal funds.

### Project Summary

The Advanced Metering Infrastructure (AMI) Upgrades to Irrigation Wells Project consists of purchasing 50 battery-powered electromagnetic flow meters and installing them at existing shallow groundwater well sites. The proposed meter upgrades will allow the District to better manage its groundwater well system and reduce costs associated with manual meter reading and excessive consumption. Because the improvements will be installed on existing operational well sites, implementation will only take several months and will have no significant environmental impacts. The proposed project is the second phase of multiple planned improvements to the District's telemetry system and will advance the District's ability to access state funding for future upgrades to groundwater wells.

### Estimated Project Schedule

The project will be accomplished within the two-year allowance and will take 69 weeks from the expected date of funding authorization. The project is expected to begin in January of 2020 and be completed by March of 2021. Evaluation and final report preparation will take an additional two months. The project completion date is May 31, 2021.

### Federal Facility

The El Paso County Water Improvement District No. 1 (the District) lies within Reclamation's Upper Colorado Region. The District canal system was constructed as part of Reclamation's Rio Grande Project and relies on Reclamation facilities for water delivery and storage.

## B. Background Data

### Source of Water Supply and Total Quantity of Water Supply Managed

The District obtains water by annual allocation from the Reclamation's Rio Grande Project. The District's diversion right of water during a full allocation year during the primary irrigation season is 376,860 acre-feet per year. The operation of District wells is primarily used for drought relief for irrigation water users and the use of supplemental groundwater varies from year to year.

### **Relationship with Reclamation**

The United States Reclamation Act passed on June 17, 1902 initiated formal development of the large-scale irrigation system in the El Paso Valley. The Rio Grande Reclamation Act of February 25, 1905 provided for the construction of Elephant Butte Dam and Reservoir, which was completed in 1916. Major canals and drains were constructed under the Rio Grande Reclamation Project from 1915 to 1925 and a second impoundment, the Caballo Dam and Reservoir, was completed in 1938. The United States Bureau of Reclamation maintained the dams, reservoirs, canals and drains until 1980, when the maintenance responsibilities were assumed by the District. The District assumed actual ownership of all canals, drains, laterals and waterways within its boundaries on January 22, 1996.

The District has worked with Reclamation on many projects over the years since, including:

**Table 1 – Recent Projects Funded by Grants from Reclamation**

<b>Program</b>	<b>FOA No.</b>	<b>Year</b>	<b>Grant Amount</b>
Riverside Concrete Lining Project	BOR-DO-18-F006	2018	\$ 1,000,000
Ysla Lateral Concrete Lining Project	BOR-DO-18-F009	2018	\$ 75,000
Designing Improvements to the Franklin Canal and Franklin Feeder Canal	BOR-UC-18-F001	2018	\$ 75,000

### **Water Rights, Current Water Uses, and Water Users Served**

The District provides water from the Rio Grande for 69,010 acres of water rights lands. Active irrigation users include approximately 325 large farms and 4,500 irrigated tracts of five acres or less. Irrigated crops include cotton, alfalfa, pecan trees, sorghum, chilies, wheat, onions, corn, vegetables, pasture grass, and family gardens.

The City of El Paso currently has water rights for approximately 70,000 acre-feet per year from Rio Grande Project Water in contracts and from leasing water rights from holders. Rio Grande Project water is used to meet municipal demand for a population of over 800,000.

### **Agricultural Water Delivery and Distribution System**

The District delivers water to an average of 49,000 acres of cropland using 350 miles of canals, 269 miles of drains, 60 wells, and over 2,200 turnouts. The operation of District wells is primarily used for drought relief for irrigation water users. There are approximately 62 miles of concrete lined canals and laterals, 163 miles of unlined canals and laterals, 1.52 miles of enclosed canals and pipelines, and 30 miles of canals and laterals that are lined intermittently. The District currently operates 82 telemetry sites that are monitored by the District’s central dispatch office. The District also operates a near real-time flow telemetry data portal using these sites, which can be viewed remotely by farmers and stakeholders at <https://epcwid.org/telemetry>.

### **Current and Projected Water Demand**

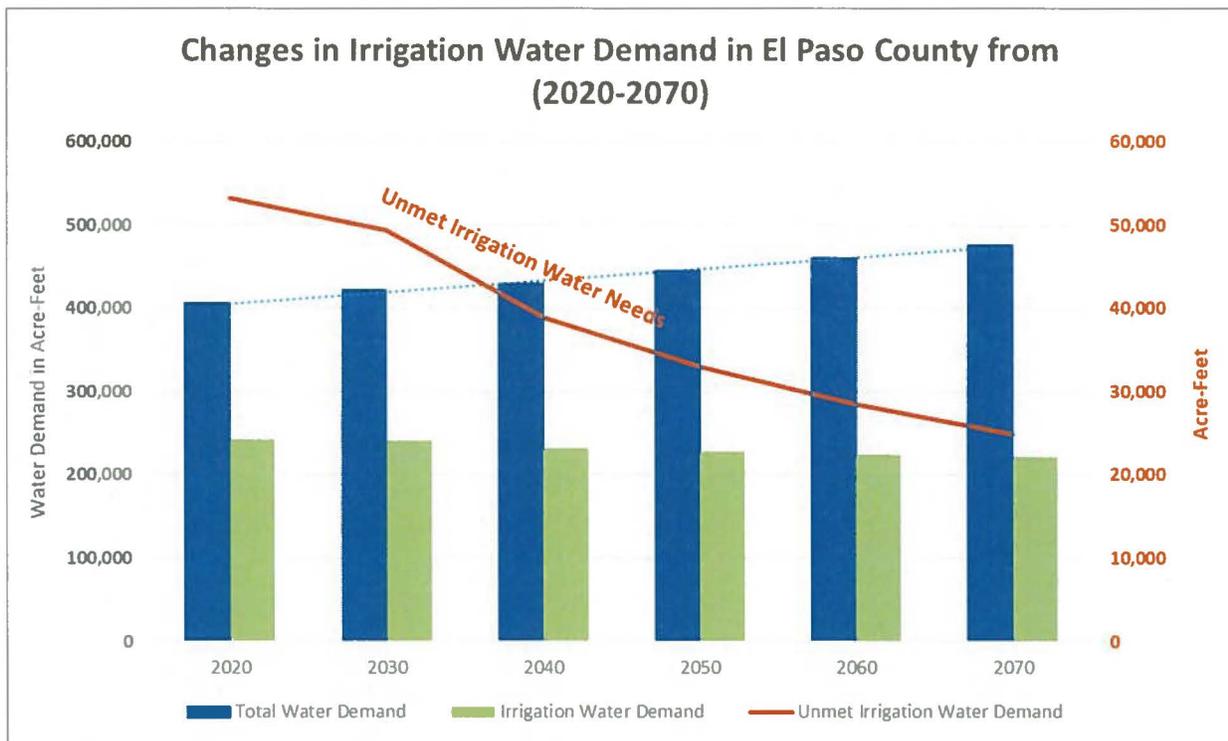
Water demand in Texas is determined at the state level by the Texas Water Development Board (TWDB) with input from local water users and historical water use data. The *2017 Texas State Water Plan* estimates that the total water demand in El Paso County is 406,422 acre-feet of water per year. By 2070, water demand is expected to increase to 476,929 acre-feet of water per year, primarily due to projected population increases in El Paso County from 800,000 to 1.5 million during the same period. Irrigation currently accounts for over 60% of water use in El Paso County, and approximately 30% of future municipal and industrial water needs are projected to be supplied using increasing amounts of water previously used for irrigation.

### Potential Shortfalls in Water Supply and Unmet Local Water Demand

Water conservation is critical to the El Paso region, which has an arid climate and receives an average annual rainfall of about 8 inches with net evaporation exceeding 70 inches. Irrigation, municipal, and industrial water use as well as international and interstate treaties all place significant demands on the limited water resources available to the area.

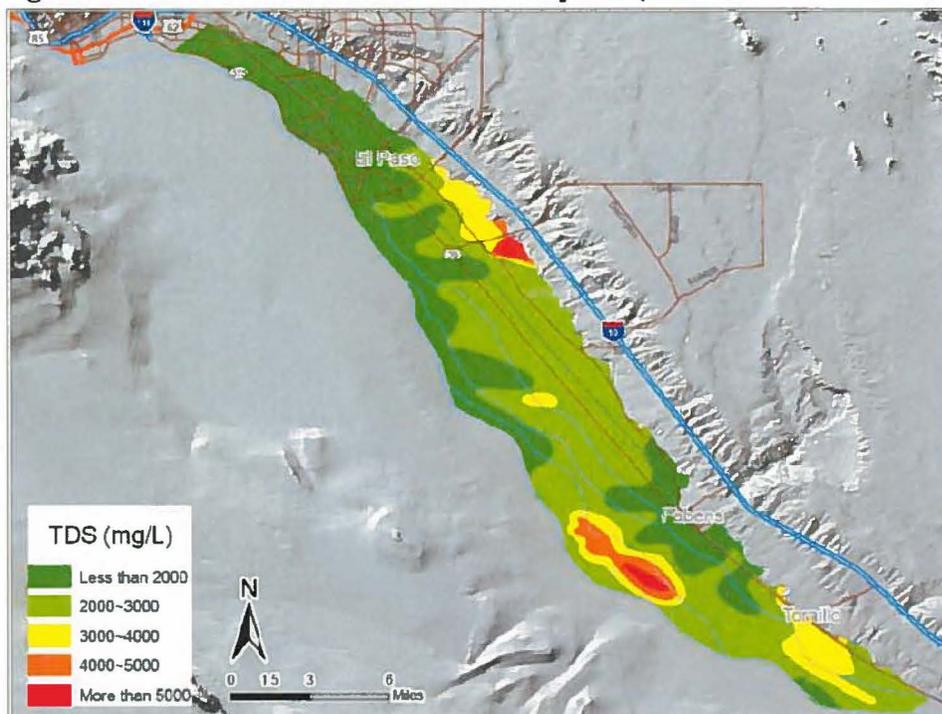
The 2017 Texas State Water Plan estimates that during drought-of-record conditions, there are 53,202 acre-feet of annual unmet water needs for irrigation in El Paso County. The growing imbalance between supply and demand is expected to lead to greater reliance on non-renewable groundwater resources used by farmers in the El Paso region.

**Figure 1 – Changes in Irrigation Water Demand in El Paso County (FWTWP 2016)**



Only a portion of the agricultural land in El Paso County has access to private irrigation wells of which a majority of the wells produce water with Total Dissolved Solids (TDS) of greater than 1,000 mg/l (many in excess of 2,500 mg/l) with significant sodium content. The high salt content limits the amount of groundwater that can be used to grow irrigated crops. Consequently, many farmers rely on blending surface water from the Rio Grande with groundwater to meet their water quality needs or use Rio Grande Project water exclusively. During years of drought, many agricultural operations are fallowed or deficit irrigated. Letters of support for the proposed project from the El Paso Valley Cotton Association and the West Texas Pecan Association with additional details on the impacts of the existing drought on agricultural water users are available for reference in Appendix B.

**Figure 2 –TDS in the Rio Grande Alluvial Aquifer (CH2MHILL 2011; Hibbs and Merino 2006)**



A 2013 Review of Observed and Projected Climate Changes by the U.S. Bureau of Reclamation noted that projected reductions in snowpack, declines in snow water equivalence, and advanced snowmelt will lead to a 10% to 30% reduction of water flow in the Rio Grande in the next 50 to 70 years. The Rio Grande at El Paso observed flows for 2001 through 2010 that were about 23% lower than the period from 1941 through 2000. Assessed annual and monthly changes in streamflow volume and surface climate variables near the headwaters of the Rio Grande River suggest that snow water equivalent has decreased by approximately 25% from 1958 – 2015 in part due to temperature increases, although small increases in precipitation have reduced the impact of declining snowpack on streamflow (Chavarria & Gutzler 2018). Consequently, water stakeholders within the Rio Grande watershed will need to continue making investments in water conservation to mitigate projected reductions in surface water supply.

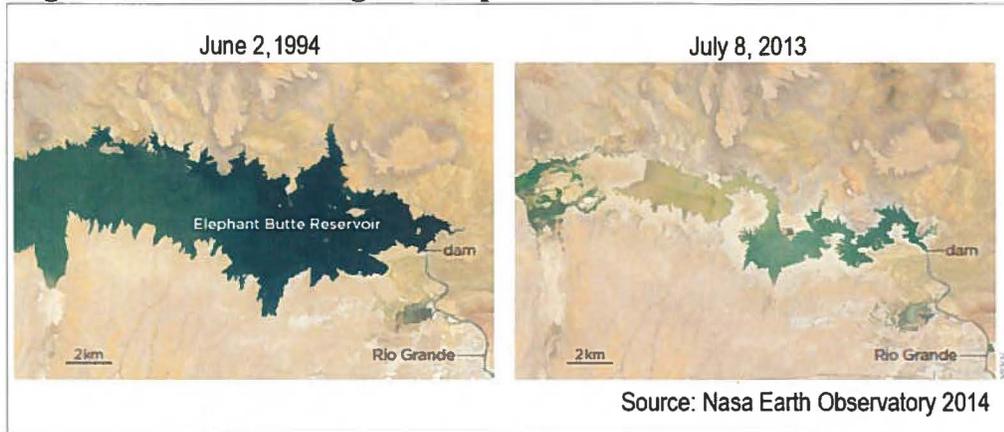
### **Prolonged Drought and Near Drought-of-Record Conditions**

Surface water users in the El Paso region are currently experiencing near drought-of-record conditions. In 2018, Elephant Butte Reservoir reached near-record-low levels at about 3% capacity, with just 62,573 acre-feet of water in storage as of September (total conservation capacity is 1,973,358 acre-feet). About 45,000 acre-feet (70%) of the September 2018 storage is attributed to water conserved and carried over by the District from 2017.

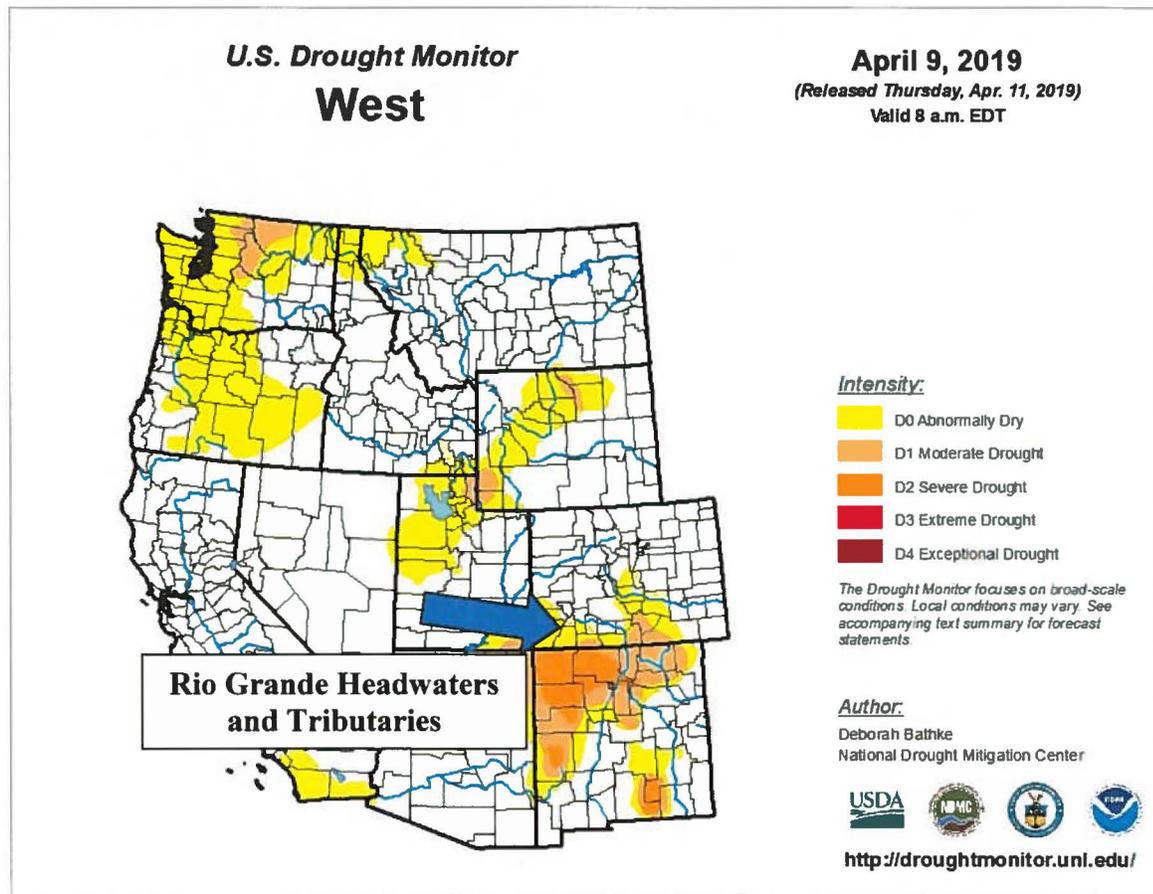
The westernmost part of Texas, as well the headwaters of the Rio Grande in Colorado and New Mexico from which the District's water supply originates, have been experiencing drought conditions for much of the past two decades, with only 2005, 2008, 2016, and 2017 experiencing average or above-average spring runoff into Elephant Butte Reservoir. Elephant Butte and Caballo Reservoirs have been near or below 20% of the combined storage capacity of 2.23 million acre-feet since 2010, also reaching 3% capacity in 2013. 2013 was the shortest irrigation season in El Paso (less than six weeks) and supplied the least amount of water in the almost 100

year history of the Rio Grande Project. Figure 3 shows a comparison of storage levels in Elephant Butte Reservoir in 1994, when the reservoir was full, and 2013, which mirrors current water levels. Figure 4 shows the latest available U.S. Drought Monitor Report.

**Figure 3 –Landsat 8 Images of Elephant Butte Reservoir in 1994 and 2013**

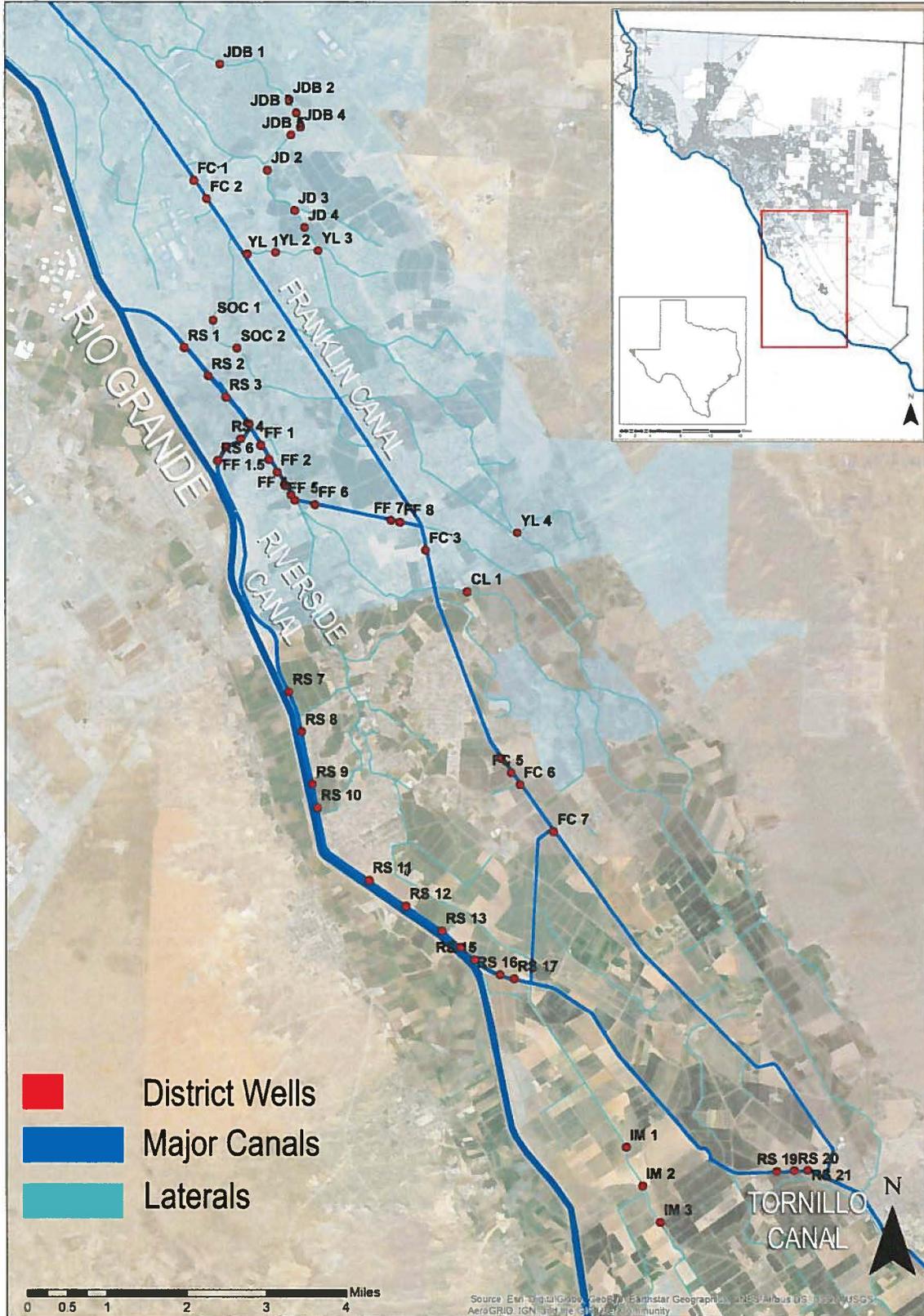


**Figure 4 – U.S. Drought Monitor Report – April 9, 2019**



### C. Project Location

Figure 5 – Project Location Map



## **D. Technical Project Description and Milestones**

The District is requesting a \$75,000 grant from Reclamation to supplement District funding to purchase 50 meters and install them at existing shallow groundwater well sites. Assuming funding is authorized by January of 2020, the project is expected to take 69 weeks.

### **Task 1: Environmental and Regulatory Compliance**

The objective of this task is to perform necessary environmental and cultural compliance work. The District intends to work with Reclamation and perform monitoring and field work as specified in Section III – Environmental and Cultural Compliance found later in this document.

### **Task 2: Purchasing and Installing Meters**

The objective of this task is to procure, purchase, and install 50 battery-powered electromagnetic flow meters. Installation at 50 well sites will occur after environmental and regulatory compliance work is completed.

### **Task 3: Grant Administration, Reporting, and Technical Support**

The objective of this task is to perform administrative and grant reporting work necessary to fulfill contractual obligations as required by Reclamation. Work shall include but not be limited to developing performance reports and a final report as specified in Sections F.3.1, F.3.2, and F.3.3 of the 2019 WaterSMART Small Scale Water Efficiency Projects FOA.

### **Problems and Needs**

The District currently operates and maintains 60 active shallow groundwater well sites that are used to provide supplemental irrigation water during drought. Groundwater extractions are accounted for using analog meters that are read, documented, and reported on-site by District staff. Possible discrepancies in the accuracy and timeliness of well meter readings have an effect on system-wide irrigation management, which must adapt input water levels from Rio Grande Project water flows originally conveyed from 140 miles upstream in response to output conditions produced by individual wells. Discrepancies often lead to unintended operations, leading to waste, overflows, unauthorized water use, overwatering, or other instances of excessive consumption.

### **Expected Outcomes**

The proposed AMI upgrades will improve the reliability of operation of District wells and improve the accuracy of groundwater accounting. Integrating groundwater flow data with existing surface water flow data will lead to better system-wide planning and management, and allow the District to respond more rapidly to instances of excessive consumption. Through improved measurement and less waste, the District will be able to better manage its allocation of Rio Grande Project water and allow more storage in Elephant Butte and Caballo Reservoirs to accumulate and provide critical water in drought years when unmet water demands are highest. Reduced losses would also result in less water pumped to achieve necessary supplemental irrigation deliveries to farmers, which would reduce diesel emissions, extend the lives of pumps and other components, and reduce fuel and maintenance costs. As an added benefit, the proposed AMI upgrades will produce water flow data that will advance the District's ability to access funding from the Texas Commission on Environmental Quality (TCEQ) Emissions Reduction Incentive Grants Program to upgrade the existing well engines, leading to additional reductions in diesel emissions, decreased maintenance, and improved engine capacity.

## **E. Evaluation Criteria**

### **E.1. Evaluation Criterion A – Project Benefits (35 points)**

**Describe the expected benefits and outcomes of implementing the proposed project.**

***What are the benefits to the applicant's water supply delivery system?***

The proposed AMI upgrades will improve the reliability of operation of District wells and improve the accuracy of groundwater accounting. Integrating groundwater flow data with existing surface water flow data will lead to better system-wide planning and management, and allow the District to respond more rapidly to overflows, unauthorized water use, overwatering, or other instances of excessive consumption.

The District uses 60 shallow (100 feet deep) wells with an average pumping capacity of 3 cubic feet per second (cfs) on sites located adjacent to canals and laterals. Recovered groundwater is used to supplement Rio Grande Project water during drought periods with an average system-wide capacity of 8,500 acre-feet of groundwater per month. Based on historical allocations, return flow, and end-of-system waste (measured at Tornillo Wasteway #2), about 8,200 acre-feet of water per year are lost due to water flow inefficiencies. A portion of these losses are attributable to the District's limited ability to monitor groundwater extractions. The proposed AMI upgrades would provide water flow data that would allow the District to better coordinate water releases and less water wasted overall. If at least 5% of water losses are eliminated as a result of efficiencies from the proposed AMI upgrades, water savings would amount to 410 acre-feet of water per year. Through improved measurement and less waste, the District will be able to better manage its allocation of Rio Grande Project water and allow more storage in Elephant Butte and Caballo Reservoirs to accumulate and provide critical water in drought years when unmet water demands are highest.

***Extent to which the proposed project improves overall water supply reliability.***

The proposed project advances the District's ability to accurately measure supplemental groundwater orders, leading to less waste and better water accounting practices. The cost of pumping and delivering supplemental groundwater costs is approximately \$45 per acre-foot, which is significantly more expensive than surface water costs. As such, the quantity of supplemental groundwater used during drought years is limited and depends on Rio Grande Project water allotments and policies outlined in the District's 2017 Drought Contingency Plan. Improved efficiency and measurement capacity via the proposed project will allow the District to better manage supplemental groundwater, improving the District's ability to deliver water in drought years by reducing costs.

***The expected geographic scope benefits from the proposed project.***

It is expected that the proposed project will lead to local benefits to the District's irrigation system in the form of efficiency improvements and decreased maintenance. Basin-wide benefits are also expected: reduced losses would result in less water pumped, reducing the likelihood of groundwater over drafting, and leaving more water available in the Rio Grande Basin.

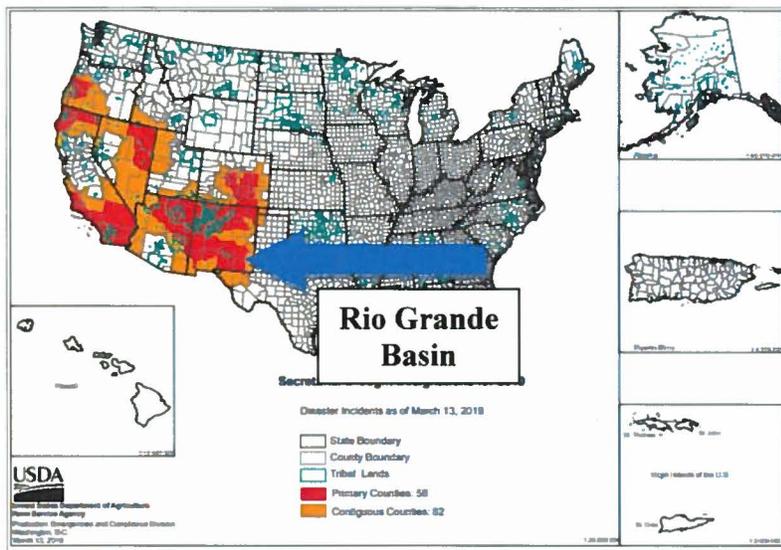
***Extent to which the proposed project will increase collaboration and information sharing among water managers in the region.***

The District works with public works, irrigation water managers, and farmers in the region and will showcase the synergistic impact that is made possible through metering and irrigation flow measurement improvements.

***Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism).***

Beneficial use and conservation of water is critical to the El Paso economy. A TWDB study on the socioeconomic impacts of projected water shortages in El Paso County determined that, if unmet, water shortages would have a negative economic impact of \$3.45 billion by 2070 and include almost 25,000 jobs lost (TWDB 2015). The economic impact of unmet irrigation water demands directly contributes to the slowing or reversal of job growth in areas where the economy benefits from agricultural revenues. Estimates from Texas A&M University determined that \$150 million in agricultural sales were lost due to irrigation water reductions from drought conditions in 2011-2015 (TAMU 2015). The Rio Grande Basin, including El Paso County, have received drought designations by the USDA in 2019.

**Figure 6 – 2019 Secretarial Drought Designations – March 13, 2019**



The proposed project will lead to water savings and efficiency improvements that will advance the District's ability to provide supplemental irrigation water to farmers, thereby reducing potential economic losses during periods of drought.

***Extent to which the project will complement work done in coordination with NRCS.***

The District has a history of collaboration with the Natural Resources Conservation Service (NRCS) program and periodically hosts local work group management meetings at the District offices. The Environmental Quality Incentives Program (EQIP) 2018 Texas Local Resource Team Priorities for El Paso County include practices that can enhance water availability and efficient irrigation systems. This is due to insufficient water available for irrigation in the region. The proposed project advances NRCS priorities by making the system more efficient, leading to water conservation and decreasing the cost burden of supplemental groundwater for irrigation water users.

## **E.2. Evaluation Criterion B – Planning Efforts Supporting Project (35 points)**

***Describe how your project is supported by an existing planning effort.***

### **EPCWID Water Conservation Plan**

The proposed AMI upgrades to District wells are part of the District's Water Conservation Plan (WCP) planned efficiency projects. A draft copy of the 2017 update to the WCP was submitted to Reclamation's El Paso Field Office as part of a review process beginning in January of 2018 and is available for reference at <https://www.epcwid1.org>. The WCP includes an internal System Optimization Review (SOR) summary, a 10-year plan prioritizing conservation and efficiency projects, and historical water use data.

### **2017 Texas State Water Plan and 2016 Far West Texas Water Plan**

The proposed project is listed under Water Management Strategy (WMS) E-45 in the 2017 Texas State Water Plan, which is developed at the state level by the Texas Water Development Board (TWDB). Improvements made to the District's delivery system in WMS E-45 are estimated to conserve an aggregated 50,000 acre-feet of water per year. The proposed project is also included as part of a Recommended Water Management Strategy in the 2016 Region E Far West Texas Water Plan, which is developed by the Far West Texas Water Planning Group (FWTWPG). Projects prioritized in these water plans are eligible for state funding from the TWDB. A Letter of support from the FWTWPG is included in Appendix B.

***Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?***

The majority of current and future unmet irrigation water needs described in the 2017 Texas State Water Plan must be met via efficiency improvements. As a result of the SOR process and based on water conservation management best practices, the District is currently focusing on concrete lining improvements and expanding the District's telemetry and metering systems.

***Explain how the proposed project has been determined as a priority in the existing planning efforts as opposed to other potential projects/measures.***

The District has limited sources of revenue and cannot immediately fund the majority of its planned efficiency and conservation projects. District revenues decrease significantly during droughts, and as such, the District proactively seeks to partner with other public entities to cost-share water conservation and efficiency projects when possible. The District has worked with Reclamation on a number of such projects and has also received financial support from the Texas Water Development Board to implement projects prioritized in the State Water Plan.

In 2018, the District received a grant from the TWDB to cost-share the installation of 10 telemetry stations in key sites throughout the District's conveyance system. Efficiency improvements from this recent project are estimated to conserve approximately 102 acre-feet of water per year. The proposed project is the next phase of planned telemetry improvements and supplementary funding from Reclamation will advance a project prioritized in the 2016 Water Conservation Plan.

**E.3. Evaluation Criterion C – Project Implementation (10 points)**

*Describe the implementation plan for 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.*

The proposed project will be completed 69 weeks after receiving funding authorization, which is assumed will occur by January of 2019. The project completion date is May 31, 2021. A project timeline can be referenced in Figure 7.

**Task 1: Environmental and Cultural Compliance**

Environmental and cultural compliance work will be performed prior to the beginning of installation activities. It is assumed that 8 months (34 weeks) will be sufficient to complete this task. Work includes but is not limited to:

- 1.1 Completing a Categorical Exclusion Checklist (CEC) in collaboration with Reclamation

**Task 2: Purchasing and Installing Meters**

Assuming funds are reimbursable in January of 2020, equipment purchases will begin 4 weeks after receiving funding authorization. Installation will begin once environmental and cultural compliance has been completed and is expected to take 26 weeks. Work includes but is not limited to:

- 2.1 Procuring equipment, including bidding/pricing, ordering, delivery
- 2.2 Installing battery-powered electromagnetic flow meters at 50 well sites
- 2.3 Testing and calibrating flow meters
- 2.4 Monitoring groundwater flow data

**Task 3: Grant Administration, Reporting, and Technical Support**

Grant administration and reporting work will be completed as specified in Section F.3.1, F.3.2 and F.3.3 of the 2019 WaterSMART Small Scale Water Efficiency Projects FOA and/or as specified in award agreement with Reclamation. Work includes but is not limited to:

- 4.1 Completing periodic (6 month) reports and reimbursement requests
- 4.2 Completing a Final Report
- 4.3 Working with Reclamation staff to fulfill all other requirements as specified in an award contract

**Figure 7 – Project Timeline**

No.	Estimated Duration	2019												2020												2021												2022	
		O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F									
	Project Funding Award / Contract	17 Weeks	■	■	■	■	■	■	■	■	■	■	■	■	■																								
1	Environmental and Regulatory Compliance	34 Weeks				■	■	■	■	■	■	■	■	■	■																								
2	Purchasing and Installing Meters	26 Weeks														■	■	■	■	■	■	■	■	■	■	■	■												
3	Grant Admin, Reporting, and Technical Support	69 Weeks				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
						Year 1												Year 2																					

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

The District owns, operates, and maintains the wells, project sites, and right-of-way. There are no required permits or approvals necessary for this project.

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

The District purchased and installed 10 electromagnetic flow meters (McMag 3000 Flow Meters) and expects to complete the implementation of data transmission for these sites in 2019. Data transmission configurations across the District's 60 well sites depend on their location and vary from using fixed networks such as Broadband over Power Line (BPL) and Power Line Communications (PLC) to Fixed Radio Frequency (RF) networks and public networks (e.g., cellular). Data transmission can be achieved almost immediately in select well sites that are located next to existing canal telemetry stations.

- 6 wells are located in close proximity to existing telemetry stations
- 28 wells are located within the city limits of municipalities in El Paso County
- 15 wells are part of the Riverside Canal System
- 8 wells are located in rural areas in the El Paso Lower Valley
- 3 wells are located in rural areas in the El Paso Upper Valley

The District has already purchased some of the data transmission equipment necessary to integrate well water flow data into the District's existing telemetry system (which can be viewed at <https://epcwid.org/telemetry/>), including SCADA packs, box units, antennas, and radio converters and transmitters that are currently used by the District's canal telemetry system. For these reasons, the purchase and installation of transmission equipment is not included as part of the proposed project scope and budget. Should the proposed project be selected for funding, the District expects to install data transmission equipment for the 50 well sites soon after completing the meter upgrades.

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

No new policies or administrative actions are required.

***Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?***

Environmental compliance cost and time estimates were developed via email exchange on March 7, 2019 with staff from Reclamation's Albuquerque Area Office. Reclamation staff indicated that performing a Categorical Exclusion Checklist is adequate for environmental compliance work and costs are expected to be less than \$5,000.

**E.4. Evaluation Criterion D – Nexus to Reclamation (10 points)**

***Is the proposed project connected to a Reclamation Project or activity? Does the applicant receive Reclamation project water?***

The District obtains water by annual allocation from the United States Bureau of Reclamation's Rio Grande Project.

***Is the project on Reclamation project lands or involving Reclamation facilities?***

The District wells are used to deliver supplemental groundwater to Rio Grande Project irrigation water users.

***Is the project in the same basin as a Reclamation project or activity?***

The proposed project lies within the Rio Grande Basin.

***Will the proposed work contribute water to a basin where a Reclamation project is located?***

The proposed project will contribute water via efficiency improvements to delivery operations for Rio Grande Project water users. The El Paso region is considered by Reclamation to be of “Substantial Potential for Conflict” as defined in Reclamation’s 2011 Technical Memorandum 86-68251-11-01.

***Will the project benefit any tribe(s)?***

Water conserved from efficiencies a result of the proposed project will benefit all Rio Grande Project water users in El Paso County, including the Ysleta del Sur Pueblo, a federally recognized tribe. A portion of the wells located at the El Paso Lower Valley may be used to provide supplemental irrigation water to the Ysleta del Sur Pueblo Reservation. The District delivers water to the Ysleta del Sur Pueblo Reservation for agriculture and for two of the Ysleta del Sur Pueblo’s most important annual ceremonial processions: *St. Anthony of Padua Feast Day* and *Dia de Los Santos Reyes*.

**E.5. Evaluation Criterion E – DOI Priorities (10 points)**

***1. Creating a conservation stewardship legacy second only to Teddy Roosevelt***

***(d) Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity***

The El Paso region faces unique water challenges characterized by an agricultural system that is a century old, prolonged drought conditions, a growing population and a growing sister city in Mexico with shared groundwater and surface water supplies, interstate and international treaties, and interstate litigation that may impact the District’s water supply from the Rio Grande.

**Texas v New Mexico Federal Litigation regarding the Rio Grande Compact**

As previously stated, the District is located in an area considered by the Reclamation to be of “Substantial Potential for Conflict.”

The proposed project will increase the efficiency of the District’s distribution system and conserve water. As irrigation water demand is met by a more efficient system, the District can better manage its allocation of Rio Grande Project water and allow more storage in Elephant Butte and Caballo Reservoirs to accumulate and provide critical water in drought years when unmet water demands are highest.

***3. Restoring Trust with Local Communities***

***(b) Expand the lines of communication with Governors, state natural resources offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.***

El Paso County issued a statement of support for the proposed project which can be referenced in Appendix B. The process of requesting support from political subdivisions and elected officials includes explaining project details and water conservation benefits to leadership (e.g., elected officials and staff, County Judge and Commissioners, City Council, Board of Trustees), informing leadership of any resulting awards from funding agencies such as Reclamation and completed projects, and working with administrations to make necessary arrangements to complete projects.

Informing political subdivisions of water conservation projects often leads to increased communication and dissemination of project benefits with their respective constituents and the general public. Increasing public awareness of regional water issues in order to incentivize conservation is included as water management strategy E-10 in the 2017 Texas State Water Plan and is necessary to meet projected increases in water demand.

#### ***4. Striking a Regulatory Balance***

##### ***(a) Reduce the administrative burden imposed on U.S. industry and the public***

El Paso County faces challenges in achieving attainment status compliance with the National Ambient Air Quality Standards (NAAQS) in part due to north- and southbound commercial and passenger vehicle queues at border ports of entry, long wait times at inspection stations, and El Paso's proximity to Ciudad Juarez, Mexico (Shelton et al. 2016). In years when El Paso does not meet federal guidelines, local stakeholders work with the Texas Commission on Environmental Quality (TCEQ) to develop an action plan that must be approved by the U.S. Environmental Protection Agency (EPA). Environmental compliance costs directly impact industry revenues and benefits from environmental compliance on the economy and public healthcare are far greater than the cost of achieving them (U.S. EPA 2011).

In 2018, the District worked with TCEQ staff to develop a Non-Standard Annual Usage Rate to access funding from TCEQ's Emissions Reduction Incentive Grant (ERIG) program in order to upgrade the current 80 horsepower diesel well pump engines (used almost uniformly across the District's well system) with new 100 horsepower well pump engines. The current well engines have emission standards of 6.9 g/bhp-hr and would be upgraded to engines with phase-in emission standards of 3.1 g/bhp-hr, which would lead to an estimated reduction of NO<sub>x</sub> emissions of 55% and, based on the proposed usage, would lead to a 77% purchase cost reduction for the District.

The proposed Non-Standard Annual Usage Rate is based on groundwater extraction records collected during periods of drought. Because the proposed Non-Standard Annual Usage Rate requires data from meter readings that are more detailed than the District's available records from previous drought years, the District postponed its application to the ERIG program until the necessary data can be collected. The successful implementation of the proposed project will provide metering records with sufficient detail that can be used to request a competitive Non-Standard Annual Usage Rate for the ERIG program and subsequently achieve the aforementioned benefits.

## II PROJECT BUDGET

### A. Funding Plan and Letters of Commitment

The total project cost is \$157,111. The District will contribute \$82,111 to the project, which is 52.3% of the total project costs. The District is requesting a \$75,000 grant from Reclamation, which is 47.7% of the total project costs. There are no additional funding partners for this project.

EPCWID Funding	\$82,111	=	52.3%
Reclamation Funding	\$75,000	=	47.7%
<b>Total Project Funding</b>	<b>\$157,111</b>	=	<b>100%</b>

The District's funding commitment is established via Resolution from the District Board of Directors and is available for reference in Appendix A. There are no additional funding partners for this project. There are no donations or in-kind costs incurred before the anticipated proposed project start date that are being included in the budget proposal.

### B. Budget Proposal

**Table 2. Summary of Non-Federal and Federal Funding Sources**

FUNDING SOURCES	AMOUNT
Costs to be reimbursed with requested Federal funding	\$ 75,000
Costs to be paid by the applicant	\$ 82,111
Value of third party contributions	\$ 0
<b>TOTAL PROJECT COSTS</b>	<b>\$ 157,111</b>

**Table 3. Budget Proposal**

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	Recipient Funding	Reclamation Funding	TOTAL COST
	\$/unit	Quant.				
<b>Salaries and Wages</b>						
Pete Rodriguez, Maintenance Supervisor	\$39.48/hour	80	Labor	\$ 3,158	\$ -	\$ 3,158
Repairman / Wells	\$18.28/hour	80	Labor	\$ 1,462	\$ -	\$ 1,462
IT Specialist	\$29.84/hour	120	Labor	\$ 3,581	\$ -	\$ 3,581
					<b>Subtotal</b>	<b>\$ 8,201</b>
<b>Fringe Benefits</b>						
Pete Rodriguez, Maintenance Supervisor	\$9.98/hour	80	Labor	\$ 799	\$ -	\$ 799
Repairman / Wells	\$4.57/hour	80	Labor	\$ 366	\$ -	\$ 366
IT Specialist	\$7.46/hour	120	Labor	\$ 895	\$ -	\$ 895
					<b>Subtotal</b>	<b>\$ 2,059</b>
<b>Supplies and Materials</b>						
Electromagnetic Flow Meters	\$2,787.00/ea	50	Meters	\$ 71,850	\$ 67,500	\$ 139,350
					<b>Subtotal</b>	<b>\$ 139,350</b>
<b>Environmental and Regulatory Compliance</b>						
Environmental and Regulatory Compliance	\$25.00/hour	200	hours	\$ -	\$ 5,000	\$ 5,000
					<b>Subtotal</b>	<b>\$ 5,000</b>
<b>Grant Administration</b>						
Grant Administration	\$25.00/hour	100	hours	\$ -	\$ 2,500	\$ 2,500
					<b>Subtotal</b>	<b>\$ 2,500</b>
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$ 82,111</b>	<b>\$ 75,000</b>	<b>\$ 157,111</b>

## **C. Budget Narrative**

### ***Salaries and Wages (in-kind)***

The following District personnel will be involved in this project:

#### **All Project Tasks:**

- **Pete Rodriguez** is the District Maintenance Manager. Mr. Rodriguez will be responsible for project management and the oversight of all installation work personnel under Project Task 2: Purchasing and Installing Meters. Mr. Rodriguez will contribute 80 hours to the project at a rate of \$39.48.
- The **IT Specialist** will be responsible for completing periodic and final reporting work necessary to fulfill contractual obligations as required by Reclamation and provide technical assistance as needed. The IT Specialist will contribute 120 hours to the project at a rate of \$29.84.

#### **Project Task 2: Purchasing and Installing Meters**

- The **Repairman / Wells** will be responsible for performing installation and monitoring work. The Repairman will contribute 80 hours to the project at a rate of \$18.28.

### ***Certification of Labor Rates***

The labor rates of identified personnel included herein are representative of the actual labor rates of personnel bearing the same title. Additional verification is available as needed pursuant to an award contract with Reclamation.

### ***Fringe Benefits (in-kind)***

The in-kind fringe benefits for District personnel involved in this project were computed on a "Fringe" basis and were derived by subtracting the hourly salary rate for designated District personnel from the loaded value per hour.

### ***Equipment***

Equipment costs are not included as part of the project.

### ***Materials and Supplies***

The proposed costs for electromagnetic are representative of costs and quantities from similar well meter upgrades performed in early 2019.

### ***Environmental and Regulatory Compliance Costs***

Environmental compliance cost and time estimates were developed via email exchange on March 7, 2019 with staff from Reclamation's Albuquerque Area Office. Reclamation staff indicated that performing a Categorical Exclusion Checklist is adequate for environmental compliance work and costs could be \$5,000 or less. Costs for any additional environmental activities will be determined pursuant to an award contract with Reclamation.

### ***Indirect Costs***

Indirect costs are not included as part of the project.

### ***Total Amount of Project Costs***

The total cost of the project is \$157,111. The Bureau of Reclamation requested share is \$75,000. The District contribution will be \$82,111 as in-kind contributions and material costs.

### III ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

***Will the proposed project impact the surrounding environment?***

There are no anticipated adverse impacts to the environment surrounding well sites.

***Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?***

There are no anticipated impacts to threatened and endangered species by the proposed project.

***Are there wetlands or other surface waters inside the project boundaries that fall under CWA jurisdiction as “waters of the United States?”***

There are no surface waters inside the project boundaries that fall under CWA jurisdiction.

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

Major canals and drains in the District’s water delivery system were constructed under the Rio Grande Reclamation Project from 1915 to 1925. District wells were first constructed in 2002.

***Will the proposed project result in any modifications or effects to, individual features of an irrigation system? 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.***

No adverse impacts to individual features of the irrigation system are anticipated as part of the proposed project.

***Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?***

The El Paso County Water Improvement District Number One (the District) is listed in the National Register of Historic Places under National Register Information System ID 97000885. There are no anticipated adverse effects of features listed in the National Register of Historic Places as a result of the proposed project. The District has an agreement with the Texas Historical Commission in regards to which facilities within the District can be improved and the process for doing so. The proposed project is allowed under this agreement and there are no anticipated adverse effects to historical assets. A copy of the agreement is available from the District.

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

There are no known archeological sites in the proposed project area.

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

There are no anticipated negative impacts on minority populations or low-income communities.

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

There are no anticipated limits to access to and ceremonial use of Indian sacred sites or adversely impact tribal lands.

*Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

There are no anticipated contributions to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

#### **IV REQUIRED PERMITS OR APPROVALS**

The District owns, operates, and maintains the project sites and right-of-way. There are no required permits or approvals necessary for the proposed project.

#### **V UNIQUE ENTITY IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT**

##### **System for Award Management (SAM) Registration**

The El Paso County Water Improvement District No. 1 maintains an active SAM registration and all information is up to date.

**EIN Number:** 74-1505167

##### **Department of Treasury Automated Standard Application for Payments (ASAP)**

The District is currently enrolled in ASAP and is ready to engage in active financial assistance agreements with Reclamation.

**DUNS Number:** 128044773

**VI APPENDIX**

**A. Official Resolution**

**RESOLUTION OF THE BOARD OF DIRECTORS**

**El Paso County Water Improvement District No.1**

El Paso County Water Improvement District No. 1 resolves to authorize the General Manager or the District Engineer to submit and take any Administrative Action required to complete an application to the United States Bureau of Reclamation Fiscal Year 2019 WaterSMART Small-Scale Water Efficiency Program for a Grant totaling \$75,000 to conserve water and improve the District's water use efficiency by cost-sharing upgrades to well meters.

**Whereas**, the El Paso County Water Improvement District No.1 (the District) is a political subdivision of the State of Texas and was organized under Chapter 59, Article 16 of the Texas Constitution and operates under Chapter 55 and Chapter 49, in part, of the Texas Water Code;

**Now Therefore**, the Board of Directors of the District hereby resolve to support the District's application for a Grant and authorizes the General Manager or the District Engineer to submit and take any administrative action required to complete applications to the United States Bureau of Reclamation, including working with Reclamation to meet established deadlines for entering into a grant or cooperative agreement, and if the District is selected to receive a Grant, to negotiate an agreement to be approved by the District's Board of Directors. The District has the capability to provide the amount of funding and/or in-kind contributions specified in the Funding Plan in the application.

El Paso County Water Improvement District No.1

  
By: Johnny Stubbs, President

## B. Letters of Project Support

### Resolution of Support from the West Texas Pecan Association



April 12, 2019

Mr. Matthew Reichert  
Financial Assistance Support Section  
United States Bureau of Reclamation  
P.O. Box 25007, MS 84-27814  
Denver, CO 80225

**RE: Letter of Support for Water Efficiency Project Proposed by EPCWID1**

Dear Mr. Reichert:

I am writing on behalf of the West Texas Pecan Association to express our support for the Advanced Metering Infrastructure (AMI) Upgrades to Irrigation Wells Project, a water efficiency project by the El Paso County Water Improvement District No. 1 (EPCWID1). The project proposed by EPCWID1 will help meet irrigation water demand in El Paso County.

Agricultural operations in the El Paso region have been negatively impacted by long-term drought conditions. The El Paso region leads the state of Texas with about 14,500 acres of improved variety pecan orchards in El Paso County, which produced about 15 million pounds of nuts in 2017. Water from the Rio Grande is essential for the continued production of pecans. However, pecan orchards may be deficit-irrigated during years of drought when irrigation water is limited, leading to decreased production.

Water efficiency improvement projects will help sustain the agricultural economy of rural communities in El Paso. As such, the West Texas Pecan Association supports the project proposed by EPCWID1 and recommends its funding.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mary Elizabeth Santos".

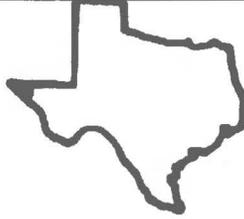
Mary Elizabeth Santos  
President

14589 Alameda Ave., Clint, TX 79836  
915-765-9140 westtexaspecanassoc@gmail.com

**Letter of Support from the El Paso Valley Cotton Association**

**E P V C A**

EL PASO VALLEY COTTON ASSOCIATION, INC.



P. O. Box 690 • CLINT TEXAS 79836  
PHONE (915) 851-2391  
FAX (915) 851-0288

April 12, 2019

Mr. Matthew Reichert  
Financial Assistance Support Section  
United States Bureau of Reclamation  
P.O. Box 25007, MS 84-27814  
Denver, CO 80225

**RE: Letter of Support for Water Efficiency Project Proposed by EPCWID1**

Dear Mr. Reichert:

I am writing on behalf of the El Paso Valley Cotton Association to express our support for the Advanced Metering Infrastructure (AMI) Upgrades to Irrigation Wells Project, a water efficiency project by the El Paso County Water Improvement District No. 1 (EPCWID1). The project proposed by EPCWID1 will help meet irrigation water demand in El Paso County.

Agricultural operations in the El Paso region have been negatively impacted by long-term drought conditions. El Paso is famously known for its industry-best Pima Cotton, and about 20 million pounds of cotton were produced in the area in 2017. However, many cotton fields are fallowed or deficit-irrigated due to limited availability of irrigation water during years of drought. About 18,000 acres of irrigable land were fallowed in 2015.

Water efficiency improvement projects will help sustain the agricultural economy of rural communities in El Paso. As such, the El Paso Valley Cotton Association supports the project proposed by EPCWID1 and recommends its funding.

Sincerely,

Jim Ivey  
President



HELPING TO INCREASE AGRICULTURAL INCOME



**Resolution of Support from the El Paso County Judge for the proposed project.**



**RICARDO A. SAMANIEGO**

El Paso County Judge

April 16, 2019

Mr. Matthew Reichert  
Financial Assistance Support Section  
United States Bureau of Reclamation  
P.O. Box 25007, MS 84-27814  
Denver, CO 80225

Letter of Support for Water Conservation Projects Proposed by EPCWIDI

Dear Mr. Reichert:

I write this letter in support of the El Paso County Water Improvement District No. 1's (EPCWIDI) application to receive funding from the Bureau of Reclamation's WaterSMART Program for FY 2019. If approved, funding will allow EPCWIDI to help improve the concrete lining for two projects which include the Montoya Main and Montoya A Laterals Concrete Lining Project, and the Advanced Metering Infrastructure Upgrades to Irrigation Wells Project.

EPCWIDI is proposing to make concrete lining improvements to the Montoya Main and Montoya A Laterals that will help conserve significant quantities of water lost to seepage and evaporation, as well as install Advanced Metering Infrastructure (AMI) upgrades to shallow groundwater recovery wells used to supplement irrigation water supplies during periods of drought. Irrigation, municipal, and industrial water use, as well as international and interstate treaties have all placed significant demands on our limited and incredibly valuable water resources in the area. While most of Texas has recovered from drought, El Paso has remained in perpetual drought conditions for the last 15 years. According to the Texas Water Development Board (2015), the socioeconomic impacts of projected water shortages in El Paso County are approximately \$3.45 billion by 2070 and include almost 25,000 jobs lost. Investments today will help secure El Paso's water future.

EPCWIDI has worked tirelessly in collaboration with the County of El Paso to enhance our community's quality of life, and most importantly to ensure the sustainability of our water resources. With this said, I strongly support the water efficiency projects proposed and recommend their funding.

Sincerely,

A handwritten signature in black ink that reads "Ricardo A. Samaniego".

Ricardo A. Samaniego  
El Paso County Judge

500 E. San Antonio, Suite 301, El Paso, TX 79901

Phone: 915-546-2098 · Fax: 915-543-3888 · [countyjudge@epcounty.com](mailto:countyjudge@epcounty.com) · [www.epcounty.com](http://www.epcounty.com)

**Letter of Support from the Far West Texas Water Planning Group for the proposed project.**



April 12, 2019

Mr. Matthew Reichert  
Financial Assistance Support Section  
United States Bureau of Reclamation  
P.O. Box 25007, MS 84-27814  
Denver, CO 80225

**RE: Letter of Support for Water Conservation Projects Proposed by EPCWID1**

Dear Mr. Reichert:

The El Paso County Water Improvement District No. 1 (EPCWID1) is applying for funding for two projects under the WaterSMART Small-Scale Water Efficiency Projects for Fiscal Year 2019:

- Montoya Main and Montoya A Laterals Concrete Lining Project
- Advanced Metering Infrastructure (AMI) Upgrades to Irrigation Wells Project

EPCWID1 is proposing to make concrete lining improvements to the Montoya Main and Montoya A Laterals that will help the District conserve water lost to seepage. EPCWID1 is also proposing to install Advanced Metering Infrastructure (AMI) upgrades to shallow groundwater recovery wells used to supplement irrigation water supplies during periods of drought.

The Far West Texas Water Planning Group (WPG) pursuant to the State of Texas Water Code §16.05 is designated to develop the Region E Far West Texas Regional Water Plan with support from the Texas Water Development Board (TWDB). The Far West Texas WPG is composed of voting members from 7 counties in West Texas representing 15 water use interest categories and non-voting representatives of public stakeholder agencies, including the U.S. Bureau of Reclamation.

The Region E Far West Texas Regional Water Plan includes water management strategies that, when implemented, would develop, deliver, or treat additional water supply volumes or conserve water. The projects proposed by EPCWID1 are recommended water management strategies listed in the 2017 Texas State Water Plan and can be referenced using Water Management Strategy ID E-45.

As such, the Far West Texas Water Planning Group supports the water conservation projects proposed by the El Paso County Water Improvement District No. 1 and recommends their funding.

Sincerely,

Scott Reinert, P.E., P.G.  
Vice-Chair

### C. References

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