

Advanced Metering Infrastructure (AMI) Funding Group I

**WaterSMART:
Water and Energy Efficiency Grants
FISCAL YEAR 2025**



November 13, 2024

**East Rio Hondo Water Supply Corporation
BRIAN MACMANUS, GENERAL MANAGER
206 INDUSTRIAL PKWY
RIO HONDO, TEXAS 78583
PHONE: (956) 748-3633**



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TECHNICAL PROPOSAL AND EVALUATION CRITERIA

I. Executive Summary

Date: November 13, 2024

Applicant Name: East Rio Hondo Water Supply Corporation

City, County, State: Rio Hondo, Cameron County, Texas

Applicant Category: Category A

Project Title: ERHWSC Advanced Metering Infrastructure (AMI) Project

Funding Group: I

Project Length of Time: 24 months

Construction Start Date: October 2025

Located on Federal Land: No

East Rio Hondo Water Supply Corporation (ERHWSC) requests \$500,000 to enhance their Advanced Metering Infrastructure (AMI) by replacing approximately 30% of their customer water meters with smart meters (with integrated acoustic leak detection), and installing all associated infrastructure including data collection devices, antennas for flood-prone meter locations, and a data software license to facilitate better water management by both the applicant and individual water users. ERHWSC was established in 1972 to provide potable water supply for the rural residential areas of Cameron County north of State Highway 100 and east of US Highway 77/83 (I-69) excluding the cities of Combes, Harlingen, Los Fresnos, San Benito, Rio Hondo, and Laguna Madre Water District. The main office is located at 206 Industrial Parkway, Rio Hondo, TX, 78583. ERHWSC serves some of the most disadvantaged census tracts in the United States, in a region just a few miles from Mexico. They currently have 8,978 customer meters in their system, of which they have already replaced 3,900 with smart meters. **This project will result in over 70% of the entire water system being managed by AMI resulting in improved water management including an estimated water savings benefit of 288 ac-ft/yr (AFY) from conservation, averted water loss by means of leaks, improved meter accuracy, and theft.** This water savings helps reduce the demand on precious surface water resources from the already over-allocated Rio Grande which is subject to significant threat from the effects of drought, climate change, and a growing population. Other project benefits include energy savings from reduced pumping demand resulting in an **estimated 106,570 kWh/yr reduction, and approximately 433,894 grams of CO2 emissions (0.434 Metric Tons) averted per year by removing meter reading truck routes and the resulting greenhouse gas emissions.**

II. Project Location

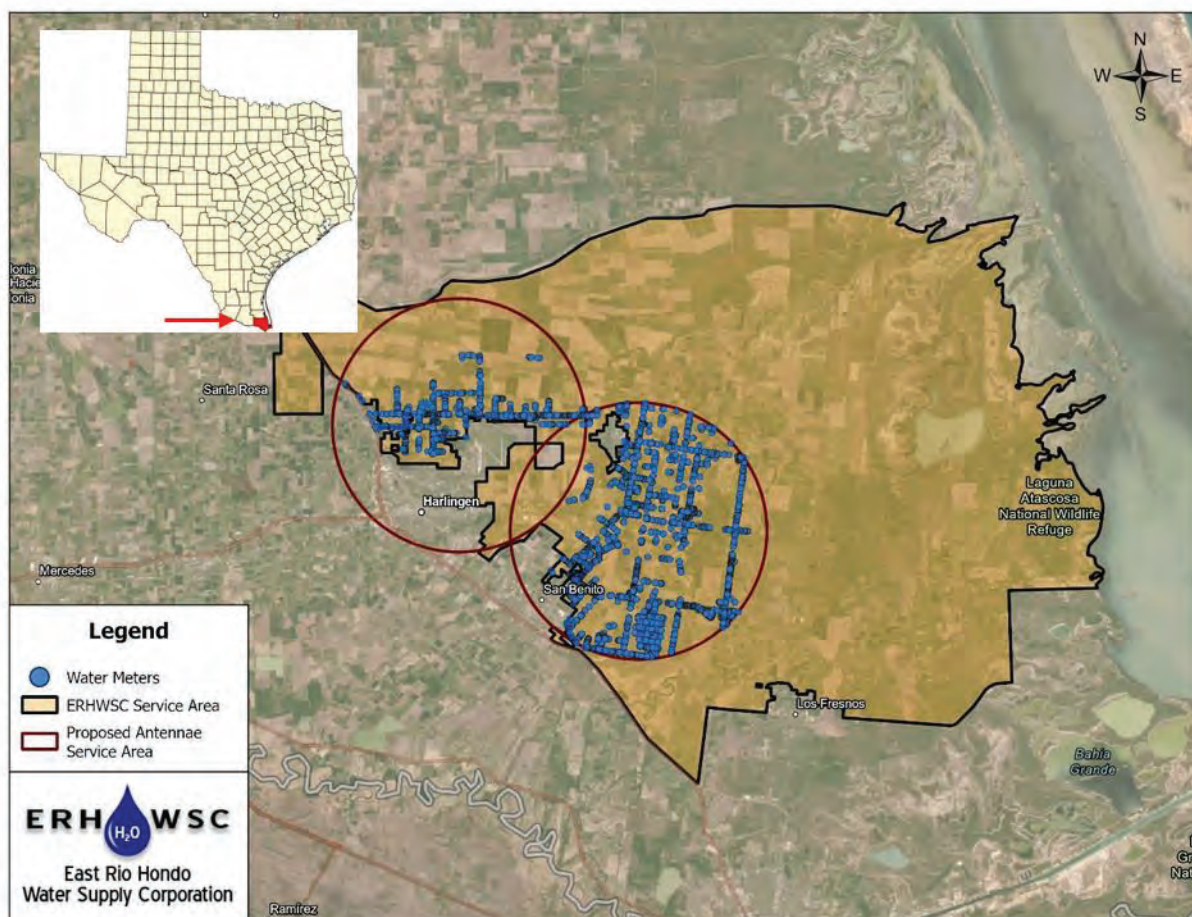


Figure 1. Project Location Map

The proposed project is located in the northwestern and central parts of Cameron County, TX as depicted in Figure 1. The proposed water meters to be replaced are demonstrated in Figure 1 inside the two 5-mile radius circle areas adjacent to I-69E. Coordinates for the center point of the service area directly northeast of San Benito are -97.5684, 26.1796 while coordinates for the second service area north of Harlingen are -97.6740, 26.2418.

III. Project Description

ERHWSO will replace 2,617 water meters with AMI meters to promote water conservation practices, reduce water loss, and better manage the overall water system. The existing water meters will be replaced with Kamstrup Flow IQ 2200 Flow ID meters (along with supplementary dual check valves) that includes Acoustic Leak Detection (ALD) capabilities (using *My Kamstrup* software). The ALD capacity allows the water utility to carefully monitor the distribution system and identify potential leaks so they can be addressed quickly to minimize water loss. Additionally, through integration of the *H₂O Analytics* customer portal software, users will be notified of potential leaks on the customer side so they can be addressed quickly and not lead to long-term

water loss. Purchase and integration of the customer portal software, in addition to the *READY Manager* software to read and manage meter information by ERHWSC, is included in the project development costs. Beyond leak detection, research supports that the customer portal interface promotes water conservation as users can view their consumption daily and manage accordingly. One study completed by the Eastern Municipal Water District (EMWD) out of Southern California found that the average water savings per meter (with an integrated customer portal) was 0.027 ac-ft/yr (AFY) per meter (AFY/meter). The integrated customer portal software will not only provide service to the 2,617 newly installed AMI meters but will also serve the 3,900 AMI meters that have previously been installed in the system.

In conjunction with the installation of the AMI meters, 180 locations will also include the installation of a Kamstrup US Pit antenna (5"). These antennae will be mounted on posts and installed in flood-prone areas of the distribution system to ensure accurate readings during wet weather conditions. These locations were identified by experienced ERHWSC meter readers with working knowledge of site conditions. All meters and antennas will be installed by ERHWSC staff with minimal hand tools and the use of a truck to drive to meter locations for the installation. Once installed, meter readings will be collected by one of two "Ready Collectors" that will also be installed as part of the proposed project. The Ready Collectors will be installed by a licensed contractor, and each can collect meter readings within an about 5-mile radius. All of the 2,617 installed AMI meters are located within a 5-mile radius of one of the two proposed Ready Collectors. Once all AMI is installed, the need to drive monthly meter collection routes is eliminated, saving dollars in fuel costs and reducing greenhouse gas emissions. The resulting water savings realized from the project also leads to reduced electrical power consumption as less water needs to be pumped and treated to meet the existing demand.

IV. Evaluation Criteria

A. Evaluation Criterion A – Quantifiable Water Savings

1. Describe the amount of estimated water savings.

The proposed AMI project would provide approximately **288 AFY** of water conserved resulting from customer conservation strategies, reduced water loss from leaks and breaks, improved meter accuracy, and theft reduction. The majority of the calculated benefit is attributed to the promotion of individual water conservation measures resulting from having real-time water consumption information available through a user portal. This capacity will be given to the 2,617 new meters that will be installed as part of this project along with an additional 3,900 AMI meters that have already been installed but don't yet have a customer portal that conveys daily water use information.

Other water savings benefits are attributed to improved leak detection, improved meter reading accuracy, and reduced water loss due to theft and meter tampering. Each of the calculated benefits resulting from these three areas are described in detail below.

2. Describe current losses.

Based on the 2022 Texas Water Development Board (TWDB) Audit Report (Appendix A), ERHWSC

reported a Total Water Loss of 195,807,462 gallons/yr (600.9 AFY). The breakdown of these losses is presented in **Table 1**. It is assumed that losses experienced from meter accuracy loss and data handling discrepancies remain in the distribution system. Losses from breaks and leaks are believed to seep back into the ground. It is unlikely that water seepage is providing an ecological benefit or supporting fish and/or animal habitat.

While the exact source of the “unreported loss” is unknown, it is believed that the most likely cause is a combination of unreported leaks, unreported line flushing, and theft. For the purposes of estimating project benefits by eliminating a portion of these losses with the incorporation of AMI, it was assumed that 60% of the unreported loss as due to breaks and leaks and 20% was due to theft. This indicates that the remaining 20% would be due to line flushing and/or other unknown sources that will not be addressed by this project.

System Details	
Customer Meter Accuracy Loss	11.58 AFY (3,773,961 gallons/yr)
Systematic Data Handling Discrepancy	5.76 AFY (1,877,546 gallons/yr)
Reported Loss from Breaks and Leaks	3.95 AFY (1,287,200 gallons/yr)
Unreported Loss	573.86 AFY (186,991,209 gallons/yr)
Loss from Unauthorized Consumption	5.76 AFY (1,877,546 gallons/yr)
Total Water Losses	600.91 AFY (195,807,462 gallons/yr)

Table 1. Inputs to Calculate Current Water Loss (Source: 2022 TWDB Water Audit Report)

3. Describe the support/documentation of estimated water savings.

ERHWSC used multiple sources to document/estimate water savings, as described in detail in the next question. Methodology/justification included a study from a similar project (Eastern Municipal Water District) as described in a winning application from Brownsville Public Utilities, Texas Water Development Board assumptions, supplier study information provided by Kamstrup, and assumptions based on American Water Works Association (AWWA) regarding AMI upgrades.

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

How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.

The estimated total annual water savings of 288.3 AFY have been calculated using the following:

- A. Individual water conservation measures resulting from customers having access to daily consumption data portal. (Easter Municipal Water District study)
- B. Savings from improved meter accuracy. (TWDB Water Audit assumptions)
- C. Water savings from early leak detection (distribution side) resulting from the Acoustic Leak Detection (ALD) capabilities of the AMI meters. (2019 supplier information from Kamstrup included as Appendix E)

D. Reduction in water theft and meter tampering. (AWWA AMI savings assumptions)

Please see Tables' 2-6 below and associated descriptions/justifications for each savings category.

Savings Category	Ac-Ft/Year (AFY)
Improved Customer Water Conservation and Management Savings	176.0
Improved Meter Accuracy	11.0
Distribution-Side Leak Detection and Management	101.0
Theft Detection and Aversion	0.3
Total	288.3

Table 2. Anticipated Annual AMI Project Water Savings

The proposed project includes the incorporation of a customer portal using H2O Analytics software. Through the portal, customers will be able to monitor their daily water consumption and adjust consumption accordingly. **This combined with tools available on the ERHWSC website, a marketing campaign to educate users and support for the customer portal (included in project budget) regarding responsible water use and techniques for water conservation is estimated to provide a significant water savings and reduced surface water demand from the Rio Grande.** Education and marketing of the new features and potential water/billing savings are critical in this disadvantaged community of South Texas. The marketing campaign will include education on the new customer portal/dashboard, and be publicized on the ERHWSC website, social media, through local events, and monthly e-newsletters. One study conducted by the Eastern Municipal Water District (EMWD) in southern California has estimated an average annual reduction in water consumption of 0.027 AFY/meter across all meters when customer portals like that proposed are provided to customers. Applying that estimate to all AMI meters in the ERHWSC system (2,617 proposed and 3,900 existing AMI meters that currently lack customer portals), the estimated annual water savings is 176.0 AFY (0.027 AFY/meter x (2,617 meters + 3,900 meters) = 176.0 AFY).

Improved Customer Water Conservation and Management			
<i>Average Reduction in Water Consumption</i>	<i>Number of AMI Meters in System</i>	<i>Savings (Acre-Feet/Year)</i>	<i>Comments</i>
0.027 ac-ft/yr/m	6,517	176.0	EMWD study referenced from Brownsville PUB AMI 2022 Project Application

Table 3. Improved Customer Water Conservation and Management Savings

The results of the 2022 TWDB water audit estimated a customer meter accuracy loss of 3,773,961 gallons/yr (11.58 AFY) and a systematic data handling discrepancy of 1,877,546 gallons/yr (5.76 AFY). It is assumed that AMI meters would markedly reduce the loss from both of those items combined. To

estimate the benefit it was first assumed that the majority of the loss was only occurring at those meters in the system that are not AMI meters (in other words the 3,900 AMI meters already in the system were assumed to have negligible loss and were thus excluded from the calculation). This results in a current meter loss per year of 0.0042 AFY ($11.58 \text{ AFY} + 5.76 \text{ AFY} = 17.34 \text{ AFY} / (8,003 \text{ meters} - 3,900 \text{ meters} = 4,103 \text{ meters}) = 0.0042 \text{ AFY}$, where 8,003 was the number of total meters included in the 2022 water audit. It was then assumed that 99.5% of this loss would be resolved through the installation of AMI meters resulting in a total water savings of 11 AFY ($0.0042 \text{ AFY} \times 2,617 \text{ new AMI meters} = 10.99 \text{ AFY} \times 0.995 = 10.93 \text{ AFY}$ or approximately 11 AFY).

Improved Metering Accuracy					
<i>Estimated Meter Accuracy Loss (G/Y & AFY)</i>	<i>Systematic Data Handling Discrepancy (G/Y & AFY)</i>	<i>Non-AMI Meters in System (# of meters)</i>	<i>Estimated Loss/Meter (AFY & Gallons/m/yr)</i>	<i>Estimated Savings from Improved Meter Accuracy (ac-ft/yr)</i>	<i>Comments</i>
11.58 AFY 3,773,961 G/Y	5.76 AFY 1,877,546 G/Y	4,103	0.0042 AFY 1,377.4 G/M/Y	11.0	Loss estimates from 2022 TWDB water audit

Table 4. Improved Metering Accuracy Savings

Distribution side water loss resulting from breaks and leaks was estimated at 113,481,925.4 gallons/year (348.27 AFY). This estimate is based off the reported value for breaks and leaks in the 2022 TWDB Water Audit included as Attachment A (1,287,200 gallons/yr [3.95 AFY]) plus 60% of the unreported loss of 186,991,209 gallons/yr [573.86 AFY]: $3.95 \text{ AFY} + (0.6 \times 573.86 = 344.316 \text{ AFY}) = 348.27 \text{ AFY}$. To estimate the water savings associated with the AMI leak detection capabilities a savings of 29% water loss reduction was applied based on information provided by the supplier from a 2019 study that was completed by Kamstrup. The resulting water savings was estimated at 101 AFY ($348.27 \text{ AFY} \times 0.29 = 100.99 \text{ AFY}$ or 101 AFY).

Distribution-Side Leak Detection and Management			
<i>Water Lost in Distribution from Leaks and Breaks (AFY & G/Y)</i>	<i>Assumed Reduction in Water Loss from Leaks</i>	<i>Savings (Acre-Feet/Year)</i>	<i>Comments</i>
348.27 AFY 113,481,925.4 G/Y	29%	101.0	Loss estimates from 2022 TWDB Water Audit

Table 5. Distribution-Side Leak Detection and Management

Total water loss resulting from unauthorized use, or theft, was estimated in the 2022 TWDB Water Audit at 1,877,546 gallons/yr (5.76 AFY). It was further assumed that 20% of the unreported loss value (186,991,209 gallons/yr [573.86 AFY]) may also be attributed to theft. This

results in a total estimated water loss due to theft of 120.532 AFY $((5.76 \text{ AFY} + (0.20 \times 573.86 \text{ AFY} = 114.772) = 120.53 \text{ AFY})$. The American Water Works Association (AWWA) estimated a 0.25% theft aversion rate based on incorporation of AMI. Applying this rate to the total loss estimated from theft, the calculated water savings benefit is 0.30 ac-ft/yr $(120.532 \text{ AFY} \times 0.0025 = 0.30 \text{ AFY})$.

Theft Detection and Aversion			
<i>Total Estimated Water Loss from Theft (AFY & G/Y)</i>	<i>Theft Aversion Rate</i>	<i>Savings (Acre-Feet/Year)</i>	<i>Comments</i>
120.53 AFY 39,275,787.8 G/Y	0.25%	0.30	Theft Aversion Rate Based on AWWA Water Loss Audit Software Estimates

Table 6. Theft Detection and Aversion

How have current system losses and/or the potential for reductions in water use by individual users been determined?

To understand this, we use the 'Improved Customer Water Conservation and Management Savings' number of 176 AFY, shown in Table 3, above. The number is based on an EMWD study showing 0.027 acre/feet per meter (per individual user) per year reduction in loss based on the implementation of smart meters that include customer portal access and instant notification of leaks.

For installing end-user water service meters, e.g., for a residential or commercial building unit, refer to studies in the region or in the applicant's service area that are relevant to water use patterns and the potential for reducing such use. In the absence of such studies, please explain in detail how expected water use reductions have been estimated and the basis for estimations.

All studies and assumptions utilized to determine water savings benefits in this application were described in Section IV.A. Assumptions related to conservation estimates were based off a study conducted in California that was also referenced in the Brownsville Public Utilities Board AMI Project Application that was awarded funding in 2022 and as such determined to be relevant to the ERHWSC service area which is located in the same County. Both meter accuracy estimates, and leak reduction estimates were provided by the meter manufacturer and the estimated theft aversion rate was estimated by the AWWA.

What types (manufacturer and model) of devices will be installed and what quantity of each?

The following equipment is proposed to be installed (Product Sheets included in Appendix B):

- Kamstrup Flow IQ 2200 Flow ID meters: 2,617 meters
- *H₂O Analytics*: 1 license

- READy Manager software (1 license for up to 10,000 meter points)
- Kamstrup US Pit antenna (5"): 180 antennas
- Kamstrup Ready Collectors: 2 Ready Collectors
- Series LF7R Dual Check Valves: 2,617 valves

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

Project performance measures are discussed in Section V. They will be measured in two primary ways. First, ERHWSC will randomly select 10% of the replaced water meters and compare average monthly water consumption rates pre and post project over a 12-month period. As a secondary measure, ERHWSC will also compare total treated purchased water volumes per meter post-project compared to the same volume prior to installing AMI meters. To measure the performance of the leak detection capacity of the system and the estimated related water savings, ERHWSC proposes to compare leak volume estimates in the annual TWDB water audit pre and post project.

B. Evaluation Criterion B – Renewable Energy

Subcriterion B.2. Increasing Energy Efficiency in Water Management

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

Implementation of the proposed project will result in both energy efficiencies and reduced greenhouse gas emissions. Improved energy efficiencies result from reduced pumping requirements associated with the conservation of approximately 288.3 ac-ft/yr of water. Greenhouse gas emissions will be reduced since installing smart meters removes the need for ERHWSC staff to drive customer routes monthly to obtain meter readings. Both of these benefits will be discussed in greater detail below.

If quantifiable energy savings is expected to result from project, provide supporting calculations in kilowatt hours per year.

It is estimated that implementation of the proposed project will result in an energy savings of over 106,575.6 kWh/yr. To arrive at this estimate monthly electrical costs were evaluated over a 12-month period from January – December 2022 relative to the total gallons of water produced (pumped and treated) over the same period. A monthly cost/gallon of water produced was then calculated and averaged over the year to arrive at a value of \$0.236 /1,000 gallons. This estimate was then applied to the total number of gallons saved from conservation and reduced water loss discussed in Evaluation Criteria A (93,931,018.3 gallons/yr) to arrive at a cost savings of \$22,167.72/yr. Assuming an average energy cost of \$0.208/kWh, the total energy savings for this project is estimated at 106,575.6 kWh/yr.

Annual Water Savings (Gallons/yr)	Avg. Cost to Produce 1,000 Gallons	Avg. Energy Cost (\$/kWh)	Avg. Annual Energy Cost Savings	Total Annual Energy Savings (kwh/yr)
93,931,018.6	\$0.236	\$0.208	\$22,167.72	106,575.6

Table 7. Calculated Energy Savings in kWh/yr

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

In addition to the energy savings described in the previous section, the proposed project will reduce greenhouse gas emissions by eliminating monthly meter reading driving routes. Currently, ERHWSC staff must drive approximately 830 miles/year to physically take meter readings for all 2,617 meters proposed to be replaced with AMI meters. Assuming an average fuel efficiency of 17 miles per gallon (mpg) for the pickup trucks utilized by ERHWSC staff and an average CO₂ discharge of 8,887 grams per gallon of gasoline utilized (EPA estimate), it is estimated that the annual CO₂ emissions saved by this project equates to 433,894.7 grams, or 0.434 metric tons per year.

If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps currently being used. How would the proposed project impact the current pumping requirements and energy usage?

It is estimated that the water savings realized from this project reduces the volume of water that will need to be pumped and treated by 288.3 AFY. Energy savings as a result of this reduced pumping requirement was discussed in previous sections and calculated by analyzing monthly electrical costs at the water treatment plant relative to the volume of water pumped and treated.

Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin

The energy savings estimated is based on the average monthly electric cost at the treatment plant associated with pumping and treating the water.

Does the calculation include any energy required to treat the water, if applicable?

The average monthly electric cost at the treatment plant that was utilized to estimate the energy savings of the project incorporates the cost of both pumping and treating the water entering the distribution system.

Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.

Yes, please see previous discussion above on how greenhouse gas emissions were reduced as a result of removing driving routes for meter reading.

Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).

There are no renewable energy components associated with this project.

C. Evaluation Criterion C – Other Project Benefits

Resilience and Sustainability Benefits. Will the project address a specific water and/or energy sustainability concern?

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

After an abnormally wet summer, the Lower Rio Grande Valley (LRGV) and Cameron County are not currently considered in drought, but as recently as June 2024, the area was in 'D1 - moderate drought' and "D0 - abnormally dry" with surface water levels declining, planting postponed, and supplemental feeding for livestock implemented. See graph, right, from the Drought Monitor.

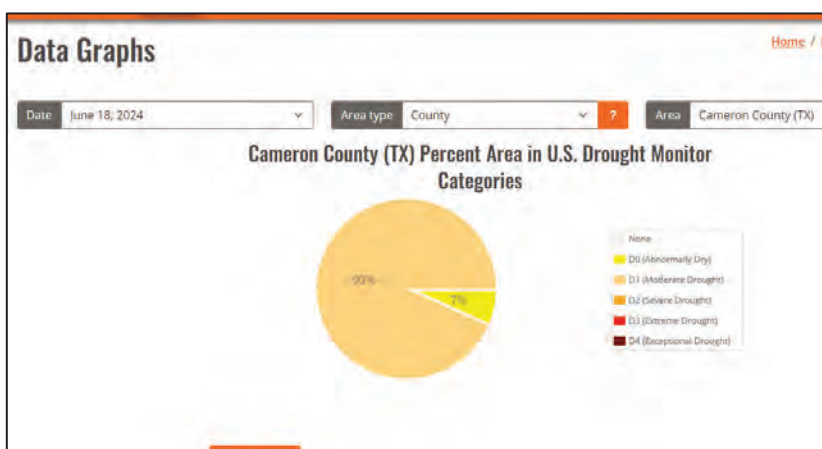


Figure 2. Moderate drought captures 93% of Cameron County June 2024.

Even so, the damage was done earlier in the 12-month cycle. In 2023, all but 3.03% of Cameron County was consumed by moderate to exceptional drought. **Lack of water for irrigation forced the owner of the state's last sugar mill (one of only four left in the United States) to close permanently, destroy 500 acres of crops, and lose approximately 500 employees.**¹ Citrus groves and other crops are in peril. Overall, Cameron County, and the rest of the LRGV, have experienced significant drought conditions on and off over the last several years as supported by data from droughtmonitor.unl.edu in Table 8.

¹ [South Texas counties declare emergency over drought](https://www.texastribune.org/2023/09/08/south-texas-counties-declare-emergency-over-drought/) | The Texas Tribune

Cameron County, TX - Drought Data								
		Drought Conditions (% Area)						
Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI Drought Severity Coverage Index
October 24, 2023	10/24/2023	0.32	99.68	88.51	7.6	0	0	196
October 17, 2023	10/17/2023	0.32	99.68	88.51	7.6	0	0	196
3 Months to October 2023	7/25/2023	0	100	0	0	0	0	100
Start of Calendar Year to October 2023	12/27/2022	100	0	0	0	0	0	0
Start of Water Year to October 2023	9/26/2023	0	100	100	87.95	61.33	0	349
One Year Prior to October 2023	10/25/2022	20.87	79.13	0	0	0	0	79
September 2023	9/26/2023	3.03	96.97	80.54	59.66	38.06	12.68	
September 2023	9/19/2023	3.03	96.97	81.91	61.33	40.76	16	
September 2022	9/27/2022	14.96	85.04	61.36	31.61	8.82	1.06	
May 2020	5/5/2020	68.53	31.47	13.3	6.14	1.71	0	
October 2019	10/3/2019	31.74	68.26	46.05	22.33	6.32	0	

Table 8. Data from Drought Monitor for Cameron County, Texas

DO – Abnormally Dry; D1 – Moderate Drought; D2 – Severe Drought; D3 – Extreme Drought; D4 – Exceptional Drought – DSCI – Drought Severity Coverage Index (0-500)

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

The primary cause of water shortages and unreliable water supplies in South Texas is drought.

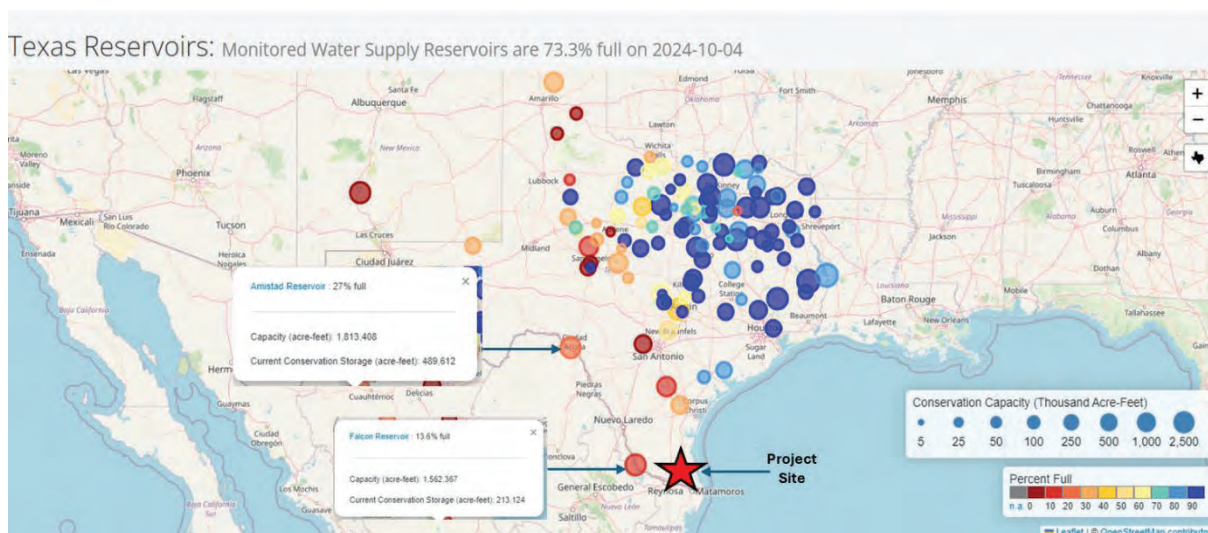


Figure 3. Water Data for Texas.org shows Amistad at 27% full and Falcon at 13.6% full – both levels “in the red” from persistent drought in Valley.

The communities in the Lower Rio Grande Valley depend heavily – in some cases, entirely – on water from the Rio Grande River. This supply is dependent on healthy levels in the Falcon-Amistad reservoirs/lakes, and Mexico’s ability to deliver the mutually managed water stipulated by the 1944 Treaty. Lake Amistad and Lake Falcon straddle the border of Texas and Mexico. By treaty, Texas has rights to 56.2% of the total conservation capacity of Amistad and 58.6% of the total conservation capacity of Falcon². But consistently low levels from drought have meant that Mexico is behind by over 900,000 AF in deliveries going into the fifth year of the five-year cycle as shown in the further graph, below.³ Current levels are at 13.6% and 27% full, respectively.

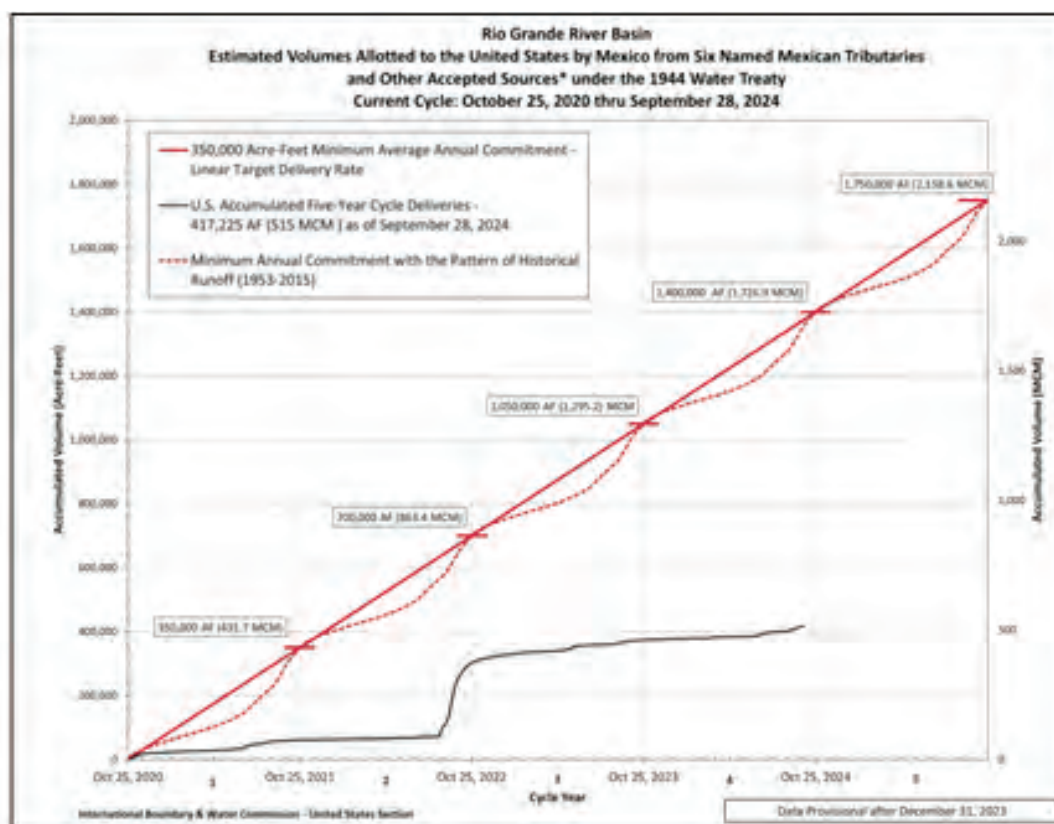


Figure 4. Estimated Volumes of Committed vs. Actual Deliveries from the 1944 Treaty.

The graphic shows the vast gulf between committed deliveries from Mexico and actual numbers. The Treaty commits 1.75 million acre-feet to the U.S. over a five-year period, averaging 350,000 AFY. 2023 was the fourth year in the current five-year commitment, meaning the United States should have received 1.4 million acre-feet by the end of the year. But deliveries are at 417,225 acre-feet – 982,775 acre-feet behind what Mexico should have delivered by the end of 2023.⁴ Depending on raw water from the Rio Grande River is thus, in total peril. Communities across the Valley are looking for alternative supplies and implementing smart measures to conserve water, like AMI projects.

² <https://www.waterdatafortexas.org/reservoirs/statewide>

³ <https://www.waterdatafortexas.org/reservoirs/individual/falcon>

⁴ https://ibwcsftptg.blob.core.windows.net/wad/WeeklyReports/Current_Cycle.pdf

As a result of these conditions, many local farmers and ranchers have been forced to downsize herds and acreages (Shank, S. “Drought continues for Rio Grande Valley farmers, ranchers”. Texas Farm Bureau, March 2023). In August 2022 it was reported that the Falcon Dam was only 9% full with Amistad Dam further upstream being less than one-third full (Baddour, D. “Drought and record-breaking heat spur a South Texas water crisis”. Inside Climate News. Aug. 16, 2022).

Describe any projected increases to the severity or duration of drought or water scarcity in the project area.

As previously discussed, and documented, drought conditions in the LRGV are a significant threat to raw water supplies and this threat is projected to worsen under the pressures of population growth and climate change. In recent years the LRGV has already been under the threat of not meeting water demand as local ranchers and farmers have scaled back production and municipal water suppliers have had to turn to emergency interconnects and irrigation push water. In situations where ERHWSC is dependent on irrigation push water through Cameron County Irrigation District 2 (CCID2's) canal system, without irrigation water, losses approach 70% through evaporation, infiltration and bank failures. This further reduces reliability of the water supply. Due to this ongoing threat, ERHWSC has taken the initiative to upgrade their water infrastructure, including the installation of advanced meters. Additionally, ERHWSC's successful implementation of an AMI system will reduce the demand on surface water from the Rio Grande, allowing these raw water sources to fulfill other local needs such as agriculture, industry, environmental flows, and other municipal providers.

Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.

In addition to supply/demand concerns related to limited surface water sources in the LRGV, water quality in the Rio Grande combined with the speed and method of the delivery water is highly susceptible to water quality degradation and poses a potential health threat to local communities. Water in the conveyance system tends to be relatively stagnant with the potential for toxic algae blooms. Current treatment plants lack a process for algae removal in the treatment train thus creating a potential for reduced treatment plant capacity from algal blooms. Additionally, recent water quality testing of ERHWSC surface water sources indicated detectable levels of PFOS/PFAS (8.2618 ng/L of Perfluorooctanesulfonic (PFOS) acid from sample collected on 9/20/23). The National Science Foundation states that exposure to PFOS chemical in drinking water may result in health effects that could include developmental effects to fetuses during pregnancy, cancer, liver effects, immune effects, and thyroid effects ([PFOA/PFOS in Drinking Water | NSF](#)).

Other issues include the impacts of climate change on the region which is exacerbated by greenhouse gas emissions. As previously discussed, the region is extremely susceptible to the effects of climate change including drought conditions and extreme weather. This project will eliminate the need to drive monthly meter reading routes thus reducing CO2 emissions resulting

from car exhaust. Additionally, by promoting water conservation and minimizing water loss, ERHWSC can pump and treat less water, resulting in a reduction of energy consumption at the water treatment plant.

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

Drought Conditions

The availability of near-real-time water usage data benefits both customers and water managers. It enables more efficient water consumption management and promotes conservation resulting in water savings. These savings contribute to a reduced demand for water and lessen the reliance on raw water supplies from the Rio Grande. The leak detection capabilities also help identify leaks so they can be quickly addressed. Minimizing losses in water distribution systems, both at the customer and distribution side, is crucial during drought-induced water scarcity and leads to greater community resilience to climate change.

Additionally, the reduction of energy consumption at the water treatment plant and fuel consumption (and the resulting CO2 emissions) from reduced meter reading routes supports strategies to combat climate change.

Water Quality

The customer portal component of the project offers a unique opportunity to promote community water stewardship. By directly involving customers in water conservation practices, such as granting access to their near real time water consumption rates and having them use this information for more efficient leak-detection, they are more likely to engage in smart, water-conscious practices. This contributes to more water volume in the Rio Grande which can help address several water quality issues.

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

Yes. The implementation of an AMI system provides water managers with key water usage data that can be leveraged for the efficient management of water supplies. This data includes current water consumption rates, patterns of water usage over time, and irregularities detected in water usage. Having access to continuously updated, real-time information enables water managers to make prompt decisions in response to changes in demand or potential issues such as leaks or unauthorized usage. ERHWSC could also lease the water to other municipalities who need it for supply or push water (loss) needs.

Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries,

made available for transfer, left in the river system, or used to meet another intended use. Indicate the quantity of conserved water that will be used for the intended purpose.

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

The water conserved from the AMI project will reduce the pumping demand from the Rio Grande system to support environmental freshwater flows, and to serve as future water supply for both municipal and agricultural use. The AMI equipment, software, and education are the mechanism that will be used to put the conserved water toward the intended use of potable drinking water.

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

While ERHWSC is not a direct participant in an interstate compact, its AMI project will support Texas, Colorado, and New Mexico in meeting the requirements of the 1938 Rio Grande Compact. This compact addresses concerns regarding the use of the Rio Grande waters by establishing specific water delivery, quality, and storage obligations for each state. Through its advanced water metering system, ERHWSC can modestly but significantly contribute to the broader water sustainability efforts in these states by reducing the overall water demand on the Rio Grande.

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

The Rio Grande Basin is often faced with both international and intrastate issues over water allocation. These issues are exacerbated by increasing municipal and agricultural demands, prolonged droughts and changing precipitation patterns, and growing environmental concerns over sufficient water flows for habitats and species.

The Rio Grande, which serves as the natural border between the US and Mexico in its lower reaches, is governed by several binational agreements and treaties. One significant agreement is the 1944 Water Treaty, as mentioned above, which established rules for water delivery between the two countries for both the Rio Grande and the Colorado River. Despite this formal agreement, tensions between the two countries have arisen due to Mexico's failure to fulfill its obligations under the treaty. Tensions over water allocation are expected to rise due to prolonged drought periods and increased municipal and agricultural demand, which are placing greater stress on the Rio Grande ([Congressional Research Service](#)).

Besides international tensions, disagreements over water use between states has also required litigation. One of the biggest examples of this is the 1939 Rio Grande Compact, which set forth water obligations between the states of Texas, Colorado, New Mexico, as mentioned above. Another notable case was the multiple lawsuits filed in the 1950s due to severe drought and water shortages. These cases ultimately reached the appellate courts, and judicial powers were invoked to settle water disputes in the American waters of the lower Rio Grande ([State v. Hidalgo County Water Control & Improvement District No. Eighteen](#)).

The conclusion of these cases led to the establishment of the Rio Grande Watermaster Program in 1971. Instead of having a “first in time, first in right” priority system as the upper Rio Grande has, water rights in the lower Rio Grande are served by the Falcon-Amistad reservoir system. According to the TCEQ, water below Lake Amistad is allocated on an account basis with priority given to all municipal accounts. Unlike municipal accounts, irrigation accounts are not assured and instead depend on surplus water identified after municipal priorities have been met, creating a natural conflict of interest between municipal and agricultural water users ([TCEQ - The Rio Grande Watermaster Program](#)).

With conflicts between multiple water users being historically prevalent in the area, there is a growing need to reduce water demand on the Rio Grande. ERHWSC aims to enhance water sustainability by optimizing its distribution system using AMI technology to minimize avoidable losses, such as undetected leaks and theft. By reducing overall water demand on the Rio Grande, ERHWSC seeks to help alleviate tensions over water allocation in the Rio Grande.

Ecological Benefits

Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).

One of the primary reasons for species extinction is the loss and degradation of habitat. More water conserved from adopting an AMI system leads to more freshwater availability to sustain these habitats. By reducing the surface water demand from the Rio Grande River, the project will support environmental freshwater flows that support a number of rare, threatened, and endangered species including:

- Swallow-tailed kite
- Tropical parula
- Zone-tailed hawk
- Alligator gar
- American eel, river goby
- Swallowtooth sawfish
- Tamaulipan clubtail dragonfly
- Mexican fawnsfoot
- Salina mucket
- Texas hornshell
- Rio Grande river cooter
- Shinner’s rocket

A complete listing of all threatened and endangered species for Cameron County is included in

Appendix C. In total, there will be a reduction in surface water demand of 288.3 AFY as a direct result of this project.

Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels, recreational benefits, etc.).

The additional water conserved from AMI implementation will be left in the Rio Grande system and its distributary channels. This will help the Rio Grande and associated channels maintain appropriate water levels.

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

The water savings from AMI implementation will increase environmental freshwater flows, supporting the various ecosystems where these species reside. This, in turn, reduces the likelihood of species being listed and helps maintain the biodiversity of the Lower Rio Grande Valley.

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

The water conserved through the AMI project is expected to benefit the unique, biodiverse resaca ecosystems found in the Lower Rio Grande Valley. Historically, resacas were formed by the heavy floodwaters of the Rio Grande. During periods of heavy flooding, the Rio Grande could not contain large amounts of water within its channel alone, leading to the formation of finger-like distributaries in the Rio Grande Delta. However, with the construction of upstream dams, such as Falcon and Amistad dams, the Rio Grande's flow became more regulated, resulting in less frequent flooding and causing many resacas to dry up unless maintained by pumping water from the Rio Grande. Supported by these freshwater flows, resacas sustain a wide array of unique flora and fauna. The Tamaulipan thornscrub and wetland habitats along resacas are critical for a variety of migrating birds, fish, reptiles, and amphibians. Among these include some of the previously mentioned state and/or federally listed species, such as the ocelot, aplomado falcon, white ibis, and black spotted newt. The increase in environmental flows to resacas helps riparian vegetation thrive. This riparian habitat in return provides ecosystem services such as nutrient and sediment filtering, which are essential for preventing sedimentation of the system and maintain the system's water storage capacity.

Climate Change

Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?

The proposed project is in direct response to current drought conditions that are only expected to worsen over the next several years to decades as a result of climate change impacts. Current

surface water sources from the Rio Grande River that are currently treated by ERHWSC at one of their two surface water plants are already threatened with depletion due to climate change, noncompliance with international treaties, drought, and push water. The impacts of climate change are anticipated to worsen the reliability of the water supply in the Rio Grande further. That coupled with population growth are a direct threat to municipal water providers in the LRGV.

Water conservation resulting from implementing an AMI system will reduce demand on surface water from the Rio Grande, preserving it for other users and for critical freshwater flows supporting the natural ecosystem. In conjunction with this, ERHWSC will also continue to implement its Water Conservation and Emergency Water Demand Management Plan to reduce municipal water use by promoting water saving practices that will be critical to the LRGV's future water supply.

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

According to the EPA, climate change in Texas is expected to bring heavier, more intense storms but an overall drier climate ([What Climate Change Means for Texas \(epa.gov\)](https://www.epa.gov/what-climate-change-means-for-texas)). Water scarcity is projected to be a significant challenge in the future. By reducing water demand on the Rio Grande through AMI implementation, more water can be made available to maintain ecosystem health. The optimization of water distribution systems to minimize water losses through advanced infrastructure will be instrumental in proportioning water for ecosystems, as historically, municipal and irrigation water needs have been prioritized.

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

Although the proposed project does not directly address water pollution, the customer portal can serve as a tool to bolster community awareness on water pollution. By providing easy access to real-time water usage data and educational resources, the customer portal can encourage water-saving behaviors and promote water stewardship.

Also, as discussed in Evaluation Criteria B the project will also result in a modest reduction in CO2 emissions. By removing the need to physically drive to water meter locations to read and record monthly usage, ERHWSC staff can receive and analyze data on a real-time basis saving approximately 0.434 metric tons/year in greenhouse gas emissions.

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

The proposed project does not include green or sustainable infrastructure beyond what has already been described related to the AMI infrastructure to improve community climate resilience.

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

above?

By installing AMI infrastructure in the water distribution system ERHWSC is setting an example to other local water providers in the area. This could result in other providers updating their infrastructure with AMI technology with water and energy savings benefits that impact the entire South Texas region and communities along the Mexican border.

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

Subcriterion D.1. Disadvantaged Communities. Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST).....to identify any disadvantaged communities that will benefit from your project.

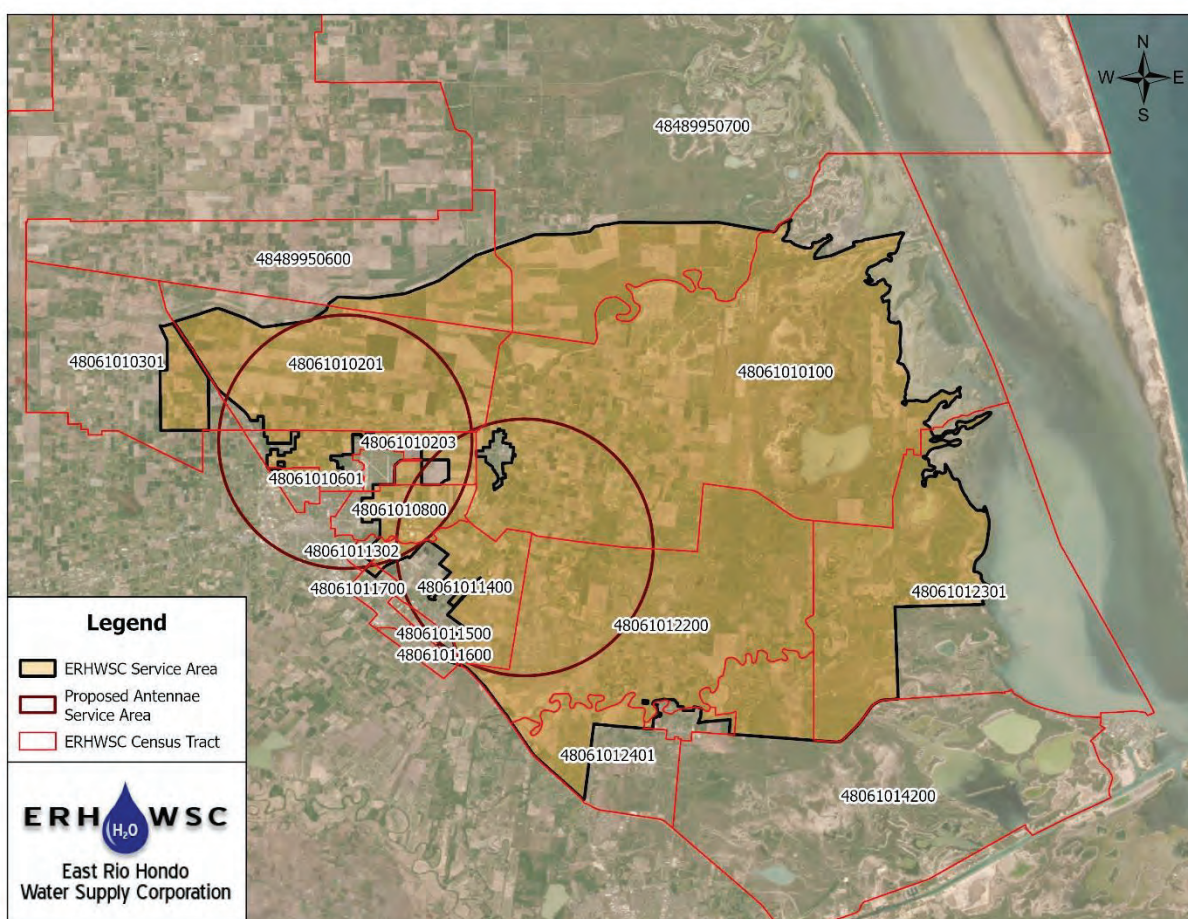


Figure 5. ERHWSC project location map and disadvantaged census tracts.

The Climate and Economic Justice Screening Tool (CEJST) was utilized to assess the local community serviced by ERHWSC and who would benefit from the proposed project. Every census tract that is located at least partially within the ERHWSC service area was assessed using the CEJST with respect to climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. The results of this analysis by census tract

are displayed in Table 9. Every single census tract within the ERHWSC service area was identified as being disadvantaged with low-income percentiles ranging between 57th – 95th (with the majority, 14 out of 17, being above the 75th percentile). Even though 11 out of the 17 census tracts are located within or partially within the project area, water savings are expected all across the ERHWSC service area and not just within the project bounds.

ERHWSC has included in the request grant funding to provide education and outreach to their entire service area – which includes 100% CJEST-disadvantaged census tracts. AMI upgrades will include a customer portal that allows for quick identification of leaks and issues with billing, reducing the potential for unexpected high bills. In addition, the justifications above include the augmentation of customer behavior once they have easy, 24/7 access to their water usage – this is a proven strategy to reduce water consumption.

Census Tract #	Disadvantaged?	Low Income Percentile	Population	Other CEJST Burdens	Within Project Area
48061010100	Yes	79th	9576	Climate Change (bldg loss & flood risk), Health (diabetes)	Yes
48061010201	Yes	85th	2280	Climate Change (bldg loss & flood risk), energy (PM 2.5), Health (Diabetes), Housing (green space), Transportation (barriers)	Yes
48061010203	Yes	78th	8159	Climate Change (bldg loss & flood risk), Energy (PM 2.5), Health (Diabetes), Housing (green space), Workforce Development (poverty)	Yes
48061010601	Yes	94th	8442	Climate Change (bldg loss & flood risk), Energy (PM 2.5), Health (diabetes), Workforce Development (poverty)	Yes

Census Tract #	Disadvantaged?	Low Income Percentile	Population	Other CEJST Burdens	Within Project Area
48061010800	Yes	89th	7409	Climate Change (bldg loss), Energy (PM 2.5), Housing (green space), Legacy Pollution (prox. to risk man. Plan facilities), Workforce Development (poverty)	Yes
48061011302	Yes	57th	4487	Climate Change (bldg loss, wildfire), Energy (PM 2.5), Legacy pollution (prox. to risk man. plan facilities)	Yes
48061011400	Yes	57th	6387	Workforce Development (linguistic isolation)	Yes
48061011500	Yes	95th	6300	Climate Change (bldg loss, flood risk), Energy (cost, PM 2.5), Health (diabetes), Legacy Pollution (prox. to risk man. Plan facilities)	Yes
48061011600	Yes	84th	6112	Climate Change (bldg. loss, flood risk, wildfire), Energy (cost, PM 2.5), Health (diabetes), Workforce Development (linguistic isolation, poverty, high school education)	Yes

Census Tract #	Disadvantaged?	Low Income Percentile	Population	Other CEJST Burdens	Within Project Area
48061011700	Yes	96th	7583	Climate Change (bldg. loss, flood risk), Energy (cost, PM 2.5), Health (diabetes), Legacy Pollution (prox. to risk man. plan facilities), Workforce Development (poverty, high school education)	Yes
48061012200	Yes	87th	10755	Climate Change (bldg loss & flood risk), Health (diabetes), Transportation (barriers), Workforce Development (linguistic isolation)	Yes
48489950600	Yes	73rd	2189	Climate Change (bldg loss), energy (PM 2.5), Health (Diabetes), Housing (green space), Workforce Development (linguistic isolation)	No
48489950700	Yes	80th	2273	Climate Change (bldg loss, population loss, flood risk), Energy (cost), Health (diabetes, heart disease), Housing (indoor plumbing), Transportation (barriers), Workforce Development (linguistic isolation, low median income, unemployment)	No
48061010301	Yes	89th	5325	Climate Change (agric. Loss, bldg loss), Energy (PM 2.5), Health (diabetes), Housing (green space), Transportation (barriers)	No

Census Tract #	Disadvantaged?	Low Income Percentile	Population	Other CEJST Burdens	Within Project Area
48061012301	Yes	79th	3929	Climate Change (bldg loss & flood risk), Legacy Pollution (former defense sites)	No
48061012401	Yes	80th	7167	Climate Change (bldg loss), Energy (PM 2.5), Workforce Development (linguistic isolation)	No
48489950600	Yes	73rd	2189	Climate Change (bldg loss), energy (PM 2.5), Health (Diabetes), Housing (green space), Workforce Development (linguistic isolation)	No

Table 9. Climate and Economic Justice Screening Tool (CEJST) data by census tract for the whole ERHWSC service area.

If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?

The proposed project aims to provide a reliable, stable supply of quality potable water to a disadvantaged community. As discussed under Evaluation Criteria C, raw surface water supplies that currently supply a large portion of the service area is under threat due to the effects of climate change, long-term drought conditions and the associated reliance on push water when irrigation water is not available. Projected water savings from the installing an AMI system would increase water supplies for these disadvantaged communities.

Subcriterion D.2. Tribal Benefits

for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe? Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability

The proposed project will not directly serve and/or benefit a Tribe as ERHWSC's service area does not contain tribal lands.

Does the proposed project support Tribal led conservation and restoration priorities, and/or

incorporate or benefit indigenous traditional knowledge and practices?

Not applicable. The proposed project will not directly support Tribal led conservation and restoration priorities as ERHWSC's service area does not contain tribal lands.

Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, increased renewable energy, or economic growth opportunities? Does the proposed project support the Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe.

Not applicable. The proposed project will not directly support tribal resilience to climate change and drought impacts as ERHWSC's service area does not contain tribal lands.

E. Evaluation Criterion E – Complementing On-Farm Irrigation Improvements

Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement. Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?

The proposed project does not directly complement current on-farm irrigation improvements. However, the project will result in an annual water savings of 288.3 ac-ft/yr. This water savings reduces the surface water demand from the already over-allocated Rio Grande and helps preserve critical irrigation water for local farmers throughout Cameron County, many of which are eligible for NRCS assistance including through EQIP. ERHWSC is committed to supporting water conservation efforts throughout South Texas and provides information about conservation measures and best management practices in their drought contingency plan available on their website. Also, ERHWSC is a willing partner for any potential future on-farm improvement supported through this project. The proposed project will provide near real-time water usage information through a customer portal for all users with AMI meters which will total over 70% of the ERHWSC service area upon implementation of this project. This information provides local water users with the tools they need to implement conservation practices in their daily lives and help educate other local community members, including agricultural users.

F. Evaluation Criterion F – Readiness to Proceed

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

ERHWSC is ready to move forward with implementing the project immediately upon receiving notice of award of funding. ERHWSC has already implemented the required project tasks on 40% of their existing distribution system and has the experience to apply that knowledge towards the implementation of this project. All meters, antennas (where applicable), and check valves will be installed by ERHWSC staff. Based on extensive previous experience in installing the same

infrastructure in other parts of their distribution system, it is estimated that approximately 15 meters/day can be installed. Based on this estimate and the overall project size of 2,617 meters subject to replacement, it is estimated that the project installation can be completed within a 12-month period assuming normal working hours Monday – Friday and after considering ample buffer time to account for holidays, employee illness, and/or inclement weather periods that may slow down progress. Installation of the two Ready Collectors will be completed by a contractor and will take a minimal amount of time to complete. All required user portal software will be coordinated with the supplier and maintained by ERHWSC. It is estimated that the entire project, including award agreement execution, RFP for contractor, contract approval, and federal-level environmental, will take a 24-month period.

ERHWSC contacted Trent Parish with the Bureau of Reclamation and a 6-month Environmental Compliance timeframe, including NEPA, was assumed. The assumption is that the project will result in a Categorical Exclusion.

Project Schedule		
Tasks	Beginning Date	Ending Date
1 Project Management	October 2025	October 2027
2 Execute Grant Agreement	October 2025	October 2025
3 Environmental Compliance including NEPA	November 2025	June 2026
4 Develop RFP for Ready Collector Contractor, Advertise and Review Bids	May 2026	June 2026
5 Contract Notice to Proceed	July 2026	July 2026
7 Permitting	N/A	N/A
6 Installation	August 2026	August 2027
8 Notice of Completion Filed	September 2027	September 2027
9 Marketing Campaign	August 2027	October 2027
10 Project Closeout	October 2027	October 2027
11 Monitoring	October 2027	October 2030

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

No permits will be required for the implementation of the proposed project.

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

The proposed project does not require any engineering or design work.

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

The proposed project does not require any new policy or administrative action to implement the project. ERHWSC has already replaced approximately 40% of the meters in their system with AMI

meters and the funds requested in this application would help them continue their efforts to replace all existing meters with AMI meters.

G. Evaluation Criterion G – Collaboration

Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?

The proposed project will benefit a number of other local entities in that it preserves precious surface water supplies from the Rio Grande for other local use. ERHWSC has the support from a diverse array of local stakeholders including multiple local water supply corporations, districts, municipalities, and a local detention center operated by the U.S. Immigration and Customs Enforcement office. Letters of support are provided in Appendix D and include the following stakeholders:

- Military Highway Water Supply District
- Cameron County Irrigation District #2
- Cameron County Drainage District #3
- Town of Indian Lake
- Olmito Water Supply Corporation
- City of Rio Hondo
- North Alamo Water Supply Corporation
- City of Los Fresnos

What is the significance of the collaboration/support?

As the downstream water users of the Rio Grande, it is of interest to all of Cameron County, and the Lower Rio Grande Valley to support projects that conserve this critical surface water source for all South Texas users. As the effects of climate change are predicted to intensify already prevalent drought conditions in the region, any and all steps that strive to conserve valuable water sources are of the utmost importance. As such, other local entities that rely on the Rio Grande as their primary source of surface water have consistently supported ERHWSC projects that aim to meet this goal.

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

As an early user of AMI meters in the Lower Rio Grande Valley, ERHWSC is setting an example for other local water providers to implement similar measures. The project not only conserves critical surface water resources to ensure availability for current and future users, it also provides a financial savings to the water producer through reduced water loss, reduced vehicle mileages, and reduced energy costs for pumping and treating water. Further, by providing a user portal that allows customers to see their water consumption on a near real-

time basis, it promotes responsible water use throughout the region and increases the probability that other providers will also implement AMI technology in their own systems.

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

- **Recreational** – The Lower Rio Grande is renowned for its rich biodiversity, boasting wetlands, forests, grasslands, and coastal areas that attract ecotourists worldwide. Activities such as hiking, biking, swimming, and bird-watching are all recreational activities that bring in thousands of people and millions of dollars to the LRGV every year. Water conserved from the implementation of an AMI system helps maintain the environmental flows needed to sustain these natural assets.
- **Environmental** – The adoption of an AMI system increases water availability for ecosystems and reduces truck routes required for manual meter reading, resulting in decreased CO2 emissions. The project also contributes to a reduction in energy usage from the reduced volume that must be pumped from the Rio Grande.
- **Municipal and Industrial** – Reduced water demand from conservation measures combined with a reduction in water loss supports future municipal and industrial water needs as the region continues to grow.
- **Agricultural** – Reducing water demand and losses from the over-allocated Rio Grande helps ensure water availability for agricultural users.

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

Please see Appendix D for letters of support.

H. Evaluation Criterion H – Nexus to Reclamation

Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?

No, ERHWSC does not have a water service, repayment, or O&M contract with Reclamation.

If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?

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

No, ERHWSC does not receive Reclamation water through a Reclamation contractor or by any other means.

The Bureau has previously supported several projects for the Cameron County Irrigation District #2 (CCID2) who supplies water to ERHWSC. Previous CCID2 funded projects have been focused on converting open canals to underground pipelines to eliminate significant water losses during transfer to users. This project will benefit local farming users who rely on water from CCID2 and who have repeatedly been at risk of facing insufficient supplies to support their operations. The reduced demand by ERHWSC on CCID2 water from the Rio Grande, ensures that available surface water can be utilized by other local municipal users with limited other options.

The Bureau is also working with the La Feria Irrigation District Cameron County No. 3 on the Lower Rio Grande Rehabilitation project. This project has rehabilitated the diversion, distribution, and drainage systems of La Feria and Mercedes Divisions to permit more efficient operation and maintenance of works. The project also worked to reduce seepage losses from the canals and laterals and to provide drainage relief. The proposed project supports this effort by reducing surface water demand from the Rio Grande to preserve supplies for agricultural users.

This project is also consistent with recommendations made in the Lower Rio Grande Basin Study (Study) completed by the Bureau of Reclamation in December 2013. This report, completed in conjunction with multiple State and Local entities, has determined that there will be a need for an additional 592,000 ac-ft/year of water by the year 2060 (approximately 35% of the total water demand) and that the impacts of climate change is likely to increase this shortage by an additional 86,438 ac-ft/yr. As evidence of this trend, it should be noted that the City of Rio Hondo, Olmito WSC, City of Primera, and the City of Combes have already inquired about a purchased water contract or emergency interconnect with ERHWSC in order to be able to keep up with the growing demand in years of drought. The study further emphasizes the need to reduce dependency on the Rio Grande and preserve downstream flows for irrigation/push water and environmental needs, particularly in Cameron, Willacy, and Hidalgo Counties. This project directly supports the stated objectives of the Study and will help preserve valuable and limited raw water sources from the Rio Grande River for farm irrigation, municipal supply and critical environmental flows.

Is the applicant a Tribe?

No, ERHWSC is not a Tribe.

V. Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g. water saved or better managed, energy generated or saved).

The proposed project includes the installation of 2,617 new AMI meters to replace existing water

meters and the incorporation of a user portal for the new meters along with 3,900 additional AMI meters that had previously been installed in the ERHWSC distribution system. All installed meters are individual water user meters and it is not anticipated that any modifications will be made to ERHWSC's rate structure. In total, it is estimated that the project will save approximately 288 ac-ft of water per year through loss reduction and conservation measures. Since most water savings benefits will come through individual water conservation measures and improved leak detection capacity to minimize losses, ERHWSC proposes measuring project performance in two primary ways. First, ERHWSC will randomly select 10% of the replaced water meters and compare average monthly water consumption rates pre and post project over a 12-month period. This will provide a high level of accuracy. As a secondary measure, ERHWSC will also compare total treated purchased water volumes per meter post-project compared to the same volume prior to installing AMI meters. To measure the performance of the leak detection capacity of the system and the estimated related water savings, ERHWSC proposes to compare leak volume estimates in the annual TWDB water audit pre and post project.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

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

Construction and implementation of the proposed project will result in no impacts to the surrounding environment. There are no earth-disturbing activities associated with the meter installation and the project will result in reduced CO2 emissions by removing driving routes previously necessary to read and manage water meters.

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?

A discussion of listed Federal threatened or endangered species is discussed under Evaluation Criteria C. However, the proposed project will not impact any listed species or have any impact on designated critical habitat.

Are there wetlands or other surface water inside the project boundaries that potential fall under CWA jurisdiction as “Waters of the United States”? If so, please describe and estimate any impacts the proposed project may have.

No, the proposed project does not occur within any “Waters of the United States” and does not fall under CWA jurisdiction.

When was the water delivery system constructed?

ERHWSC was incorporated in 1972. Their water delivery system was constructed in phases since that time.

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

No, the proposed project will not result in any modification of or effects to individual features of an irrigation system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

There are no buildings within the project area listed or eligible for listing on the National Register of Historic places.

Are there any known archaeological sites in the proposed area?

No, there are no archaeological sites that will be impacted by this project.

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

While the entire project is located within a disadvantaged and low-income area consisting of a primarily Hispanic / Latino population (this is true for the entire ERHWSC service area), the project will not adversely impact the community.

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

The proposed project will not impact Tribal lands as there are no tribal lands located within the project area.

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

The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

REQUIRED PERMITS AND APPROVALS

There are no required permits or approvals needed for the implementation of the proposed project.

OVERLAP OR DUPLICATION OF EFFORTS STATEMENT

There is no anticipated overlap between the proposed Project and any other active or anticipated proposal or projects in terms of activities, costs, or commitment of key personnel that would adversely impact the Project.

CONFLICT OF INTEREST DISCLOSURE

No actual or potential conflict of interest exists at the time of submission of this application.

UNIFORM AUDIT REPORTING STATEMENT

East Rio Hondo Water Supply Corporation has received or expended more than \$750,000 in Federal awards in fiscal year 2021-2022. ERHWSC was required to submit a Single Audit report for the most recently closed fiscal year. The EIN is 74-2007552. The report is available through the Federal Audit Clearinghouse website.

LETTERS OF SUPPORT

See **Appendix D** for Letters of Project Support provided by: Military Highway Water Supply District, Cameron County Irrigation District #2, Cameron County Drainage District #3.

OFFICIAL RESOLUTION

East Rio Hondo Water Supply Corporation will adopt a resolution for this grant application if awarded.

UNIQUE ENTITY IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT

East Rio Hondo Water Supply Corporation is registered in the System for Award Management (SAM) and its unique entity identifier is: V6M4L6NJE3E4

East Rio Hondo Water Supply Corporation will maintain an active SAM registration with current information at all times during which it has an active Federal award or application plan under consideration by a Federal awarding agency.



February 19, 2024

East Rio Hondo Water Supply Corporation
Brian E. Macmanus, P.E.
General Manager
206 Industrial Parkway
P.O. Box 621
Rio Hondo, Texas 78583

Subject: Support of Proposed Automatic Metering Infrastructure (AMI) Project

Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. East Rio Hondo Water Supply Corporation (ERHWSC) currently delivers 100% of the potable water used by the Military Highway Water Supply Corporation (MHWSC) -Del Mar Heights service area. As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, MHWSC understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water and revenue. These water savings can directly benefit MHWSC in our water supply as delivered by ERHWSC.

As a customer of ERHWSC and in an effort to extend our water supply further into the future, MHWSC hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,

A handwritten signature in blue ink that reads "Consuelo De La Rosa". The signature is fluid and cursive, with the first name being the most prominent.

Consuelo De La Rosa
General Manager

"This institution is an equal opportunity provider and employer"

Military Highway Water Supply Corporation
P.O. Box 250 • Progreso, Texas 78579
Phone (956) 565-2491 • Fax (956) 565-9471

CAMERON COUNTY DRAINAGE DISTRICT

No. THREE



Craig M. Harmon - General Manager

February 19, 2024

East Rio Hondo Water Supply Corporation
 Brian E. Macmanus, P.E.
 General Manager
 206 Industrial Parkway
 P.O. Box 621
 Rio Hondo, Texas 78583

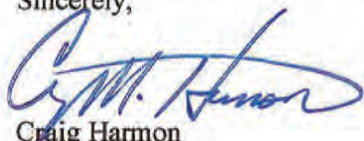
Subject: Support of Proposed Automatic Metering Infrastructure (AMI) Project

Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. East Rio Hondo Water Supply Corporation (ERHWSC) currently delivers 100% of the potable water received by the Cameron County Drainage District Number Three (CCDD3) at its headquarters office and throughout much of our service area. As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, CCDD3 understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water, energy, and revenue. These water savings can directly benefit CCDD3 in our water supply as delivered by ERHWSC.

As a customer of ERHWSC and in an effort to extend our communities water supply further into the future, CCDD3 hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,



Craig Harmon
 General Manager

**26041 FM 510
 San Benito, Texas 78586
 Board of Directors**

Ronnie Garcia-President

Mathew McCarthy-Director

CAMERON COUNTY IRRIGATION DISTRICT**No. TWO****General Manager - Craig M. Harmon**

February 19, 2024

East Rio Hondo Water Supply Corporation
Brian E. Macmanus, P.E.
General Manager
206 Industrial Parkway
P.O. Box 621
Rio Hondo, Texas 78583

Subject: Support of Proposed Automatic Metering Infrastructure (AMI) Project

Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. East Rio Hondo Water Supply Corporation (ERHWSC) currently delivers 100% of the potable water received by the Cameron County Irrigation District Number Two (CCID2) at its headquarters office. As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, CCID2 understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water, energy, and revenue. These water savings can directly benefit CCID2 in both our water supply as delivered by ERHWSC, and in CCID2's overall water supply for our system.

As a customer of ERHWSC and in an effort to extend our water supply further into the future, CCID2 hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,

Craig Harmon
General Manager

**26041 FM 510
San Benito, Texas 78586
Board of Directors**

Sam Simmons - President Brady Taubert - Vice President
Buck Rhyner - Secretary Lupe Argullin - Director

*Olmito Water Supply Corporation, Inc.**101 Clara Bennett Drive**P.O. Box 36**Olmito, Texas 78575*Board of Directors

February 19, 2024

MARGIE TAPIA
President

East Rio Hondo Water Supply Corporation

Brian E. Macmanus, P.E.

PEDRO RODRIGUEZ JR
Vice-President

General Manager

206 Industrial Parkway

NORA G. URESTE
Secretary/Treasurer

P.O. Box 621

Rio Hondo, Texas 78583

OSCAR SANCHEZ JR
Director

Subject: Support of Proposed Automatic Metering Infrastructure (AMI) Project

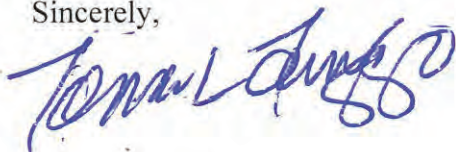
ENRIQUE ESQUIVEL JR
Director

Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. Olmito Water Supply Corporation (OWSC) is interested on establishing an Emergency Interconnect and/or Water Supply and Delivery Agreement with East Rio Hondo Water Supply Corporation (ERHWSC). As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, OWSC understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water, energy, and revenue. These water savings can directly benefit OWSC in our water supply as delivered by ERHWSC.

In an effort to secure our own emergency water supply, OWSC hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,


Tomas Tamayo
General Manager

February 19, 2024

East Rio Hondo Water Supply Corporation
Brian E. Macmanus, P.E.
General Manager
206 Industrial Parkway
P.O. Box 621
Rio Hondo, Texas 78583

Subject: Support of Proposed Automatic Metering
Infrastructure (AMI) Project
Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. East Rio Hondo Water Supply Corporation (ERHWSC) currently delivers 100% of the potable water used by the Town of Indian Lake (TOIL). As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, TOIL understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water and revenue. These water savings can directly benefit TOIL in our water supply as delivered by ERHWSC. As a customer of ERHWSC and in an effort to extend our water supply further into the future, TOIL hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,

A handwritten signature in black ink, appearing to read 'James Chambers', located at the top left of the page.

James Chambers
Mayor



February 19, 2024

East Rio Hondo Water Supply Corporation
Brian E. Macmanus, P.E.
General Manager
206 Industrial Parkway
P.O. Box 621
Rio Hondo, Texas 78583

Subject: Support of Proposed Automatic Metering Infrastructure (AMI) Project

Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. The City of Rio Hondo (CoRH) is interested on establishing an Emergency Interconnect and/or Water Supply and Delivery Agreement with East Rio Hondo Water Supply Corporation (ERHWSC). As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, CoRH understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water, energy, and revenue.

In an effort to secure our own emergency water supply, CoRH hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,

Ben Medina, Jr. CPM
City Administrator

NORTH ALAMO WATER SUPPLY CORPORATION

3/8 MILE S OF SH 107 ON DOOLITTLE ROAD
420 S DOOLITTLE RD EDINBURG TX 78542-9707

TELEPHONE 956-383-1618

FAX 956-383-1372

February 19, 2024

East Rio Hondo Water Supply Corporation
Brian E. Macmanus, P.E.
General Manager
206 Industrial Parkway
P.O. Box 621
Rio Hondo, Texas 78583

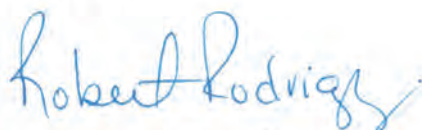
Subject: Support of Proposed Automatic Metering Infrastructure (AMI) Project

Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. East Rio Hondo Water Supply Corporation (ERHWSC) currently delivers 100% of the potable water received by the North Alamo Water Supply Corporation (NAWSC) from the North Cameron Regional Water Treatment Plant. As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, NAWSC understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water, energy, and revenue. These water savings can directly benefit NAWSC in our water supply as delivered by ERHWSC.

As a customer of ERHWSC and in an effort to extend our water supply further into the future, NAWSC hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,



Robert Rodriguez
Asst General Manager



February 21, 2024

East Rio Hondo Water Supply Corporation
Brian E. Macmanus, P.E.
General Manager
206 Industrial Parkway
P.O. Box 621
Rio Hondo, Texas 78583

Subject: Support of Proposed Automatic Metering Infrastructure (AMI) Project

Dear Mr. Macmanus:

This letter is in support of your WaterSMART Grants Program project application to the United States Bureau of Reclamation (USBOR) for funding under its Water and Energy Efficiency Grants. The City of Los Fresnos (CoLF) currently has an Emergency Interconnect with East Rio Hondo Water Supply Corporation (ERHWSC). As the extreme drought continues to pose a threat to ERHWSC's primary water source, the Rio Grande River, CoLF understands that ERHWSC intends to modernize its water metering system to more fully implement automatic metering infrastructure (AMI) with fixed-frequency smart meters. This includes acoustic leak detection technology and H2O Analytics software for customer data interface. This package of technology will result in a reduction of individual metered consumption and eventually lead to zoned metering and daily system water audits. Daily water audits will allow for quickly determining leak locations, accelerate repairs, and reduce lost water, energy, and revenue.

In an effort to secure our own emergency water supply, CoLF hereby supports your proposed efforts to expand the ERHWSC AMI system as a Water and Energy Efficiency Grants initiative under the USBOR WaterSMART Program.

Sincerely,

A handwritten signature in blue ink, which appears to read "Mark W. Milum", is positioned above the printed name and title.

Mark W. Milum
City Manager

ATTACHMENT A
BUDGET DETAIL AND NARRATIVE TEMPLATE

Summary			
6. Budget Object Category	Total Cost	Federal Estimated Amount	Non-Federal Estimated Amount
a. Personnel	\$139,912	\$500,000	\$139,912
b. Fringe Benefits	\$22,167		\$22,167
c. Travel	\$0		\$0.0
d. Equipment	\$0		\$0.0
e. Supplies	\$0		\$0.0
f. Contractual	\$0		\$0.0
g. Construction	\$1,188,782		\$688,782
h. Other Direct Costs	\$25,000		\$25,000
i. Total Direct Costs	\$1,375,861		
i. Indirect Charges	\$0		
Total Costs	\$1,375,861	\$500,000	\$875,861
Cost Share Percentage		36%	64%