
**WaterSMART Small-Scale Water Efficiency Program
FY 2018 FUNDING OPPORTUNITY NO. BOR-UC-18-F009**



Ysla Lateral Concrete Lining Project

A Best-Practices Water Efficiency Improvement in El Paso

PROJECT CATEGORY: Canal Lining / Piping

TOTAL PROJECT COST: \$199,845

Applicant

**El Paso County Water Improvement District No. 1
13247 Alameda Avenue, Clint, Texas 79836**

Project Manager

**Pete Rodriguez, Maintenance Manager
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TABLE OF CONTENTS

I	TECHNICAL PROPOSAL AND EVALUATION CRITERIA	3
A.	Executive Summary	3
B.	Background Data	3
C.	Project Location	5
D.	Technical Project Description	6
E.	Evaluation Criteria	6
E.1.	Evaluation Criterion A – Project Benefits (35 points)	6
E.2.	Evaluation Criterion B – Planning Efforts Supporting Project (35 points)	7
E.3.	Evaluation Criterion C – Project Implementation (10 points)	8
E.4.	Evaluation Criterion D – Nexus to Reclamation (10 points)	9
E.5.	Evaluation Criterion E – DOI Priorities (10 points)	9
II	PROJECT BUDGET	10
A.	Funding Plan and Letters of Commitment	10
B.	Budget Proposal	11
C.	Budget Narrative	12
III	ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE	14
IV	REQUIRED PERMITS OR APPROVALS	15
V	APPENDIX	16
A.	Official Resolution	16
B.	Letters of Project Support	17

I TECHNICAL PROPOSAL AND EVALUATION CRITERIA

A. Executive Summary

Date: July 23, 2018
Applicant Name: El Paso County Water Improvement District No. 1
City, County, State: El Paso, El Paso County, Texas
Project Name: Ysla Lateral Concrete Lining Project: A Best-Practices Water Efficiency Improvement in El Paso

Project Manager: Pete Rodriguez, Maintenance Manager
Telephone: 915-872-4000
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Project Funding Request: The total project cost is \$199,845 and the District is requesting \$75,000 in federal funds.

D-U-N-S Number: 128044773

Project Summary

The Ysla Lateral Concrete Lining Project consists of constructing 3,100 feet of lined concrete on an earthen-lined section of the Ysla Lateral. The properly designed and constructed system will support the efficient management of water resources by reducing water losses due to seepage and mitigate damages caused by potential spillage in surrounding commercial and public sites. The proposed project is the third phase of multiple planned lining projects for the Ysla Lateral with additional benefits to public transit and municipal services in the City of Socorro, Texas.

Estimated Project Schedule

The construction of the project will take eight months from the date of funding authorization. Concrete lining work will need to take place outside of the irrigation season (typically March 15 to October 15) and is expected to be completed by March of 2020. Evaluation and final report preparation will take an additional two months. The project completion date is May 31, 2020. The project will be accomplished within the two-year allowance.

Federal Facility

The El Paso County Water Improvement District No. 1 (the District) lies within Reclamation's Upper Colorado Region. The District manages a maximum annual allocation of 376,960 acre-feet of water per year from the Rio Grande Project, a federal Reclamation project. The District owns and operates its own canal system and relies on Reclamation facilities for water delivery and storage.

B. Background Data

Water Supply and Total Quantity of Water Supply Managed

The District obtains water by annual allocation from the United States Bureau of 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.

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 (Project) Act of February 25, 1905 provided for the construction of Elephant Butte Dam and Reservoir, which was completed in

1916. Significant 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.

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, 62 wells, and over 2,200 turnouts. There are approximately 61 miles of concrete lined canals and laterals, 164 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 76 telemetry sites that are monitored by the District's central dispatch office. The District also operates a near real-time flow telemetry data portal from these sites, which can be viewed remotely by farmers and other water stakeholders at <https://epcwid.org/telemetry>.

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 in total from Rio Grande Project Water in contracts and from leasing water rights from holders.

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. Irrigation currently accounts for over 60% of water use in El Paso County, and a significant portion of future municipal water needs are projected to be supplied using increasing amounts of water previously allocated 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 in the area.

The *2017 Texas State Water Plan* estimates that there are 53,202 acre-feet of annual unmet water needs for irrigation in El Paso County. 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 of greater than 1,000 mg/l (many in excess of 2,500 mg/l) with significant sodium content. The high salt content of the groundwater 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.

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. 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.

Conservation via concrete lining is one of the most cost effective option to meet future water demands compared to other projects proposed in the *2017 Texas State Water Plan*, including meeting municipal water demands via desalination, advanced purification, and the importation of water from outside El Paso County. A 2017 report by El Paso Water Utilities compared drinking water quality treatment costs per acre-foot, determining that treatment costs for Rio Grande Project water are the second least expensive option at most \$300 per acre-foot, while costs for inland desalination are \$508 per acre-foot, costs for advanced purification are \$1,370 per acre foot, and costs for long-distance importation are \$2,840 per acre foot.

As water demand is met by a more efficient system, the District will not require using as large of an annual allocation of Rio Grande Project water, thereby allowing storage in Elephant Butte and Caballo Reservoirs to accumulate and provide critical water in drought years when unmet water demands are highest.

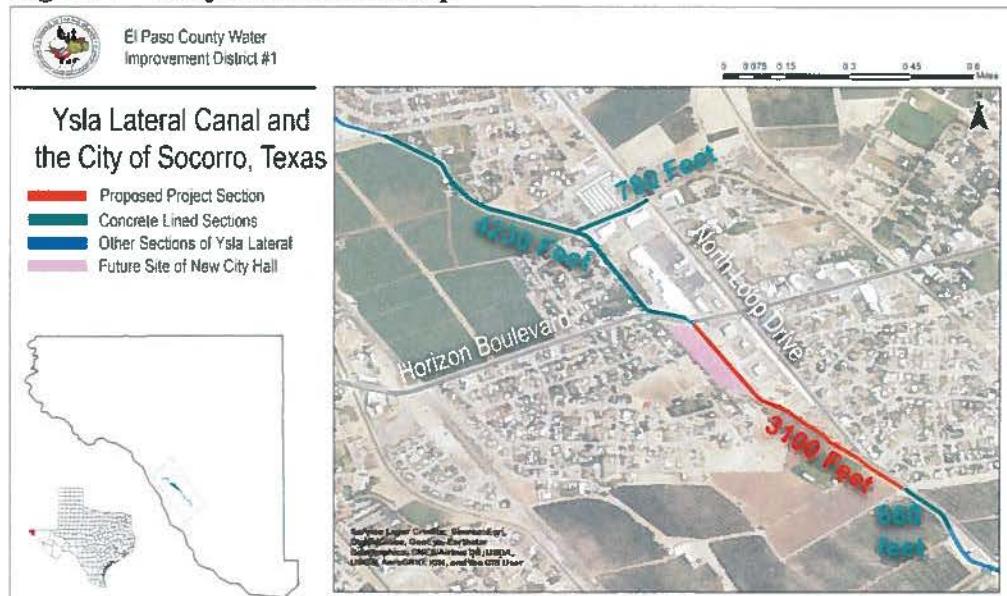
Prolonged Drought Conditions

Prolonged drought conditions in the headwaters of the Rio Grande in Colorado and New Mexico have led to low storage levels in Elephant Butte and Caballo Reservoirs. The Elephant Butte Reservoir as of June of 2018 is below 9% of capacity. According to the U.S. Bureau of Reclamation El Paso Office, snowpack and total precipitation are 27% to 50% of the long-term average for June of 2018. The U.S. Drought Monitor July 10, 2018 report shows extreme and severe drought conditions in areas at or within the headwaters of the Rio Grande in Colorado and New Mexico. Consequently, storage levels in Elephant Butte Reservoir in 2019 may return to near record-low levels, limiting the District's ability to provide Rio Grande Project water for municipal, agricultural, and industrial users.

C. Project Location

The Ysla Lateral Concrete Lining Project is located in the central business district of the City of Socorro, Texas. The project linear length begins at latitude $31^{\circ}39'04.2''N$ and longitude $106^{\circ}16'08.6''W$ and ends at latitude $31^{\circ}38'43.7''N$ and longitude $106^{\circ}15'42.6''W$. A project location map is available for reference in Figure 1.

Figure 1 – Project Location Map



D. Technical Project Description

The District is requesting a \$75,000 grant from Reclamation to supplement District funding to concrete line 3,100 feet of the Ysla Lateral Canal. We assume that the improvements will have a useful life of 20 years.

Task 1 – Concrete Lining

The objective of this task is to concrete line 3,100 feet of the Ysla Lateral. The concrete will be applied in the field as shotcrete. The Ysla Lateral is a trapezoidal canal with a 6 foot bottom, 1:1 bank slopes, varying depth, and flow capacity of 50 cubic feet per second. Previous concrete lining work at the Ysla Lateral maintains these specifications and will be used in the proposed project.

Task 2 - Grant Administration 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 coordinating District resources and staff and developing performance reports as specified in Section F.3.2 of the 2018 WaterSMART Small Scale Water Efficiency Projects FOA.

Task 3 – Final Report

The objective of this task is to perform administrative and grant reporting work necessary to fulfill contractual obligations as required by Reclamation. A completed Final Program Performance Report shall be completed as a work product as specified in Section F.3.2 of the 2018 WaterSMART Small Scale Water Efficiency Projects FOA.

In addition to conserving water normally lost to seepage, concrete lining the proposed section of the Ysla Lateral will reduce maintenance operations and reduce the likelihood of spills. The proposed project is the third phase of concrete lining efforts in the Ysla Lateral. Residential and commercial development of previously agricultural land adjacent to the Ysla Lateral has increased the need for concrete lining in order to convey irrigation water to water users downstream with increased efficiency and avoid spillage incidents caused by breaks from clogged culverts due to illegal trash dumping, washouts, and car accidents against the canal banks or into the canal.

Concrete lining provides a durable canal surface with excellent hydraulic properties that is stable and easier to maintain than earth-lined canals. Concrete lining the proposed section of the Ysla Lateral will improve access to irrigation water to agricultural operations downstream, increase operational efficiency to avoid costly damages from spills and breaks at surrounding properties, and stabilize the canal banks to better support future road expansions and commercial traffic. Additionally, concrete lining the Ysla Lateral is likely to result in economic, public, and transportation benefits in the City of Socorro, which are discussed later in this document.

E. Evaluation Criteria

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

Water Delivery System and Economic Benefits

The primary benefit of concrete lining the proposed section of the Ysla Lateral is to ensure the continued delivery of irrigation water to agricultural users downstream, reduce maintenance operations, and reduce the likelihood of spills and property damages to adjacent commercial and residential properties.

The proposed section project is located within the primary commercial district of the City of Socorro and is situated between an established business center and a 6-acre parcel of land owned by the City of Socorro designated for the development of a new city hall. Multiple orchards and agricultural fields are located immediately downstream of the proposed project, including an irrigation well. Costs per spill

range from \$15,000 to repair the earthen banks of the Ysla Lateral to as much as \$200,000 for damages to properties surrounding the Ysla Lateral. Located adjacent to the Ysla Lateral are 52 commercial properties (60.5 acres) valued at \$21.5 million and 122 residential properties (34 acres) valued at \$9.5 million, according to valuations by the El Paso Central Appraisal District. Concrete lining the proposed section of the Ysla Lateral would reinforce the canal banks, thereby reducing maintenance operations, protecting properties from flood damages, and ensuring the continued delivery of irrigation water to approximately 925 acres of orchards and farmland located downstream with an agricultural market valuation of \$7.5 million.

The proposed section of the Ysla Lateral is also bordered by two state farm-to-market roads (Horizon Boulevard and North Loop Drive) that were expanded into divided 4-lane roadways in 2015 and, according to the Texas Department of Transportation (TxDOT) 2018 Horizon Boulevard (FM 1281) Corridor Master Plan, there are plans to further expand this corridor within the next 10 years. The District has recently concrete lined a 4,230-foot section of the Ysla Lateral located directly upstream of the proposed project and made upgrades to the culvert intake structure during the construction of a median at Horizon Boulevard. The District also previously concrete lined a 660-foot section of the Ysla Lateral located directly downstream of the proposed project to address recurring traffic incidents at North Loop Drive caused in part by traffic levels that exceed roadway capacity.

Water Conservation

Based on historical use of the Ysla Lateral and the maximum number of irrigation heads that can be used in an irrigation period, roughly 5 to 9 acre-feet of water are lost per spill event over a 24-hour period. Successful implementation of the proposed project would prevent most spill events.

Approximately 42 acre-feet of water per year normally lost to seepage can be conserved by concrete lining the proposed section of the Ysla Lateral. This estimate is derived from seepage studies performed in canals that are proportionally comparable to the Ysla Lateral, which has a flow capacity of 50 cubic feet per second. The following calculations were used to estimate seepage losses:

$$((78.55+66.50)/2) \text{ acre-feet per mile per year} * 0.59 \text{ miles} = 42.79 \text{ acre-feet per year}$$

Estimated water conservation rates used in conservation projections for the Ysla Lateral are consistent with some of the observations from inflow-outflow studies performed across the District's canal system by Texas A&M University (Sheng & Brown 2002). At the end of construction, the District will perform a seepage test to compare to water conservation estimates.

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 lining of the Ysla Lateral is part of planned efficiency projects in the District's Water Conservation Plan (WCP). A draft copy of the 2017 update to the WCP was submitted to Reclamation's El Paso Field Division Office as part of the 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 and current 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 in 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 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.

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

In addition to conserving water normally lost to seepage and spill events, a major goal of the proposed project is to increase operational efficiency by mitigating the risk of spills and reducing maintenance in waterways in developed areas. As previously stated, proposed section of the Ysla Lateral is located within the primary commercial district of the City of Socorro and is situated between an established business center and the site designated for the development of a new city hall. Immediately downstream of the proposed section is a private irrigation well and 171 acres of pecan orchards with sufficient right-of-way clearance to address sediment build-up and debris. The proposed project is an investment necessary to efficiently manage the District's delivery of Rio Grande Project water within a rapidly-urbanizing area with shared municipal and agricultural water users.

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 fund the majority of its planned efficiency and conservation projects. As such, the District proactively seeks to partner with other public entities to cost-share concrete lining projects where possible. The District has worked with Reclamation on a number of such projects and has received financial support from the Texas Water Development Board to implement projects prioritized in the State Water Plan. The District also cost-shares concrete lining projects with the Texas Department of Transportation (TxDOT) to facilitate the expansion of roadways and has engaged in two such projects in the last year.

The proposed project was determined as a priority as part of its internal SOR process due to the rapid development of land adjacent to the Ysla Lateral, which increased property values and, consequently, potential liabilities and costs due to spillage. Also considered are the newly-expanded state roads, increased traffic adjacent to the Ysla Lateral, recurring traffic incidents, and additional planned expansions by TxDOT. Planning ahead for collaborative funding opportunities, the District believes that Reclamation's Small-Scale Water Efficiency Projects program is ideal to cost-share the concrete lining of the Ysla Lateral to conserve water, increase operational efficiency, and accomplish public benefits while simultaneously contributing to the reliability of the supply of Rio Grande Project water to users with allocated rights.

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

The proposed project will be completed 20 months after receiving funding authorization.

Environmental compliance work will be performed prior to the beginning of construction activities. Grant administration and reporting work will be completed as specified in Section F.3.2 of the 2018 WaterSMART Small Scale Water Efficiency Projects FOA or in an award agreement with Reclamation. A project timeline can be referenced in **Figure 2**.

Figure 2 – Project Timeline

No.	Estimated	2018			2019			2020					
		S	O	N	D	J	F	M	A	J	S	O	N
Project Funding Award	September 2018 -												
Task 1: Environmental Compliance	September 2018 - March 2020												
Task 1: Concrete Lining Construction	December 2018 - March 2019 and October 2019 - March 2020												
Task 2: Grant Administration and Technical Support	September 2018 - May 2020												
Task 3: Final Report	March 2019 - May 2020												

Proposed concrete lining work at the Ysla Lateral will be based on engineering and design specifications developed and used during previous concrete lining work performed in sections of the Ysla Lateral located immediately upstream and downstream of the proposed section. Concrete lining work will need to take place outside of the irrigation season (typically March 15 to October 15) and is expected to be completed by March of 2019. Evaluation and final report preparation will take an additional two months. The project completion date is May 31, 2020. The project will be accomplished within the two-year allowance. No additional administrative actions and permitting is required for the proposed project.

Environmental compliance cost and time estimates were developed via email exchange and phone calls in June of 2018 with staff from Reclamation's Albuquerque Area Office and support from staff from the El Paso Field Division Office. An estimated allocation of 2.5% to 5% of total project costs were determined adequate for environmental compliance work for waterways with sizes such as the Ysla Lateral.

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

The District obtains water by annual allocation from the United States Bureau of Reclamation's Rio Grande Project. Significant major canals and drains were constructed under the Rio Grande Reclamation Project, and Reclamation maintained the dams, reservoirs, canals and drains until 1980, when the maintenance responsibilities were assumed by the District and subsequent ownership in 1996. The District has worked with Reclamation on several improvement projects over the years since.

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

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

The proposed project will modernize a part of a water distribution system previously owned and constructed by Reclamation, will conserve water, and will support continued irrigation operations amidst rapid urbanization and changes in land use. The District is located in an area considered by the Reclamation to be of "Substantial Potential for Conflict" as defined in Reclamation's 2011 Technical Memorandum 86-68251-11-01. Water supply deficits are further perpetuated by prolonged drought conditions, depletions in groundwater supplies, and projected decreases in Rio Grande Project water due to climate change. The proposed project will lead to the conservation of limited water supplies which can be used as needed to meet future agricultural, municipal, and industrial needs in El Paso County.

5. Modernizing Our Infrastructure

As previously stated, the proposed section of the Ysla Lateral is bordered by two state farm-to-market roads (Horizon Boulevard and North Loop Drive) that were expanded into divided 4-lane roadways in 2015 and, according to the Texas Department of Transportation (TxDOT) 2018 Horizon Boulevard (FM 1281) Corridor Master Plan, there are plans to further expand this corridor within the next 10 years. The proposed project will help meet local transportation infrastructure needs.

II PROJECT BUDGET

A. Funding Plan and Letters of Commitment

The total project cost is \$199,845. The District will contribute \$124,845 to the project, which is 62.75% of the total project costs. The District is requesting a \$75,000 grant from Reclamation, which is 37.5% of the total project costs. There are no additional funding partners for this project.

EPCWID Funding	\$124,845	=	62.5%
Reclamation Funding	\$75,000	=	37.5%
Total Project Funding	\$199,845	=	100%

The proposed project includes budgeted costs that are representative of actual construction costs for other sections of the Ysla Lateral. The District has sufficient revenues and staff to provide a 62.5% cost share for the project. The District's funding commitment is established via Resolution from the District Board of Directors. 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.

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

FUNDING SOURCES (FY2018)	AMOUNT
Non-Federal Entities	
El Paso County Water Improvement District No. 1	\$ 124,845
Non-Federal Subtotal	\$ 75,000
Other Federal Entities	
N/A – Not Applicable	
REQUESTED RECLAMATION FUNDING	\$ 75,000
TOTAL PROJECT COSTS	\$ 199,845

B. Budget Proposal

Table 2. Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	Recipient Funding	Reclamation Funding	TOTAL COST
	\$/unit	Quantity				
Salaries and Wages						
Maintenance Supervisor	\$39.48/hour	80	Labor	\$ 3,158	\$ -	\$ 3,158
Equipment Operator I / Labor	\$11.93/hour	100	Labor	\$ 1,193	\$ -	\$ 1,193
Equipment Operator II	\$14.04/hour	100	Labor	\$ 1,404	\$ -	\$ 1,404
Equipment Operator III	\$17.02/hour	100	Labor	\$ 1,702	\$ -	\$ 1,702
Equipment Operator III (2)	\$19.28/hour	100	Labor	\$ 1,928	\$ -	\$ 1,928
Warehouse Parts Specialist	\$18.28/hour	15	Labor	\$ 274	\$ -	\$ 274
Welder	\$19.54/hour	15	Labor	\$ 293	\$ -	\$ 293
					Subtotal	\$ 9,952
Fringe Benefits						
Maintenance Supervisor	\$9.98/hour	80	Labor	\$ 799	\$ -	\$ 799
Equipment Operator I / Labor	\$3.00/hour	100	Labor	\$ 300	\$ -	\$ 300
Equipment Operator II	\$3.56/hour	100	Labor	\$ 356	\$ -	\$ 356
Equipment Operator III	\$4.31/hour	100	Labor	\$ 431	\$ -	\$ 431
Equipment Operator III (2)	\$4.85/hour	100	Labor	\$ 485	\$ -	\$ 485
Warehouse Parts Specialist	\$4.60/hour	15	Labor	\$ 69	\$ -	\$ 69
Welder	\$4.91/hour	15	Labor	\$ 74	\$ -	\$ 74
					Subtotal	\$ 2,513
Equipment (Rates from 2016 US-ACE USACE EP1110-1-8 District VI Expense Schedule)						
Pickup	\$25.20/day	20	Equipment	\$ 504	\$ -	\$ 504
Dump Truck	\$113.46/day	10	Equipment	\$ 1,135	\$ -	\$ 1,135
Excavator	\$720.26/day	10	Equipment	\$ 7,203	\$ -	\$ 7,203
Welder	\$46.16/day	10	Equipment	\$ 462	\$ -	\$ 462
Dozer	\$345.36/day	10	Equipment	\$ 3,454	\$ -	\$ 3,454
Grader	\$623.64/day	10	Equipment	\$ 6,236	\$ -	\$ 6,236
Sheeps Foot Roller	\$822.80/day	10	Equipment	\$ 8,228	\$ -	\$ 8,228
Water Truck	\$497.12/day	20	Equipment	\$ 9,942	\$ -	\$ 9,942
Rubber Tire Excavator	\$723.88/day	10	Equipment	\$ 7,239	\$ -	\$ 7,239
Compactor	\$134.70/day	10	Equipment	\$ 1,347	\$ -	\$ 1,347
Loader	\$347.64/day	10	Equipment	\$ 3,476	\$ -	\$ 3,476
Shotcrete Machine (2 each)	\$259.38/day	12	Equipment	\$ 3,113	\$ -	\$ 3,113
Compressor (2 each)	\$330.78/day	12	Equipment	\$ 3,969	\$ -	\$ 3,969
Telescopic Boom (2 each)	\$950.50/day	12	Equipment	\$ 11,406	\$ -	\$ 11,406
					Subtotal	\$ 67,713
Supplies and Materials						
Concrete - 4000psi shotcrete mix with 3 lb fiber	\$120.00/cy	630	cubic yards	\$ 5,600	\$ 70,000	\$ 75,600
Curing Compound	\$63.00/5 gal	90	5 gallons	\$ 5,670	\$ -	\$ 5,670
GeoFabric Liner (5400 sq. feet)	\$300.00/roll	15	rolls	\$ 4,500	\$ -	\$ 4,500
Form Lumber, Ties, and Misc. Construction Items	\$6,000.00/lot	1	varies	\$ 6,000	\$ -	\$ 6,000
					Subtotal	\$ 91,770
Contractual/Construction						
Field Engineering	\$200.00/hr	16	hours	\$ 3,200	\$ -	\$ 3,200
Construction Surveying	\$120.00/hr	16	hours	\$ 1,920	\$ -	\$ 1,920
Construction Services Geotechnical and Lab	\$200.00/Test	20	cylinders	\$ 4,000	\$ -	\$ 4,000
Construction Services Geotechnical Density	\$75.00/Test	20	tests	\$ 1,500	\$ -	\$ 1,500
QA/QC Monitoring	\$120.00/hr	25	hours	\$ 3,000	\$ -	\$ 3,000
Travel (airfare, 2 nights hotel and per diem)	\$750.00/trip	3	trips	\$ 2,250	\$ -	\$ 2,250
					Subtotal	\$ 15,870
Environmental and Regulatory Compliance						
Environmental and Regulatory Compliance	\$7,500.00/total	1	project	\$ 3,426	\$ 5,000	\$ 8,426
Other						
Contract Compliance - Reporting	\$45.00/hr	40	other	\$ 1,800	\$ -	\$ 1,800
Administration and Management	\$45.00/hr	40	other	\$ 1,800	\$ -	\$ 1,800
					Subtotal	\$ 3,600
TOTAL ESTIMATED PROJECT COSTS				\$ 124,845	\$ 75,000	\$ 199,845

C. Budget Narrative

Salaries and Wages (in-kind)

The following District personnel will be involved in this project. The perspective roles and actual labor rates is described as follows:

- **Pete Rodriguez** is the District Maintenance Manager and has successfully led the construction of dozens of District canal concrete lining projects, including sections of the Ysla Lateral located immediately upstream and downstream of the proposed project. Mr. Rodriguez will be responsible for project management and the oversight of all construction work personnel under Task 1 – Canal Lining. It is expected that Mr. Rodriguez will contribute 80 hours to the project at a rate of \$39.48.
- The Equipment Operator I will be responsible for the operation of construction equipment necessary for the completion of Task 1 – Canal Lining. The Equipment Operator I will contribute 100 hours to the project at a rate of \$11.93.
- The Equipment Operator II will be responsible for the operation of construction equipment necessary for the completion of Task 1 – Canal Lining. Each Equipment Operator II will contribute 100 hours to the project at a rate of \$14.04.
- The Equipment Operator III will be responsible for the operation of construction equipment necessary for the completion of Task 1 – Canal Lining. The Equipment Operator III will contribute 100 hours to the project at a rate of \$17.02.
- The Equipment Operator III (2) will be responsible for the operation of construction equipment necessary for the completion of Task 1 – Canal Lining. The Equipment Operator IV will contribute 100 hours to the project at a rate of \$19.28.
- The Warehouse Parts Specialist will be responsible for the distribution and delivery of supplies and material necessary for the completion of Task 1 – Canal Lining. The Warehouse Parts Specialist will contribute 15 hours to the project at a rate of \$18.28.
- The Welder will be responsible for metalwork necessary for the completion of Task 1 – Canal Lining. The Welder will contribute 15 hours to the project at a rate of \$19.54.

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. These numbers are used for application purposes only.

Travel

No travel for EPCWID staff will be necessary. Travel costs for an engineering contractor are included under Contractual costs.

Equipment

The District owns all of the equipment that will be used in the proposed project. The District is proposing to use equipment usage time estimates that are based on similar projects. The proposed usage cost rates are based of costs outlined by the United States Army Corps of Engineers (USACE) with their Construction Equipment Ownership and Operating Expense Schedule (EP1110-1-8) for District VI, which includes the State of Texas. Equipment cost rates can be compared in Table 3.

Table 3. Equipment Costs

Equipment	Category Number	Horsepower/ Specification	EP1110-1-8 Rates (daily)
Pickup	Section III.2.7	Section III.2.7	\$25.20
Dump Truck	T45	22.5 CY	\$113.46
Excavator	H25	320EDL	\$720.26
Welder	W35	23 HP	\$46.16
Dozer	T15	70 HP / D-3	\$345.36
Grader	T15	185 HP / 770G	\$623.64
Sheeps Foot Roller	R45	145 HP / D-off	\$822.80
Water Truck	T40	2,000 gal + 28,000 GCW Truck	\$497.12
Rubber Tire Excavator	H30	174 HP	\$723.88
Compactor	C10	10 HP	\$134.7
Loader	L40	95 HP	\$347.64
Shotcrete Machine	P45	60 HP / 50 CY/HR	\$259.38
Compressor	A15	173 HP	\$330.78
Telescopic Boom	C75	173 HP / 80 feet	\$950.50

The sum of average (10 hours) and standby (14 hours) hourly rates is used to determine daily costs from the USACE EP1110-1-8 District VI Expense Schedule.

Materials and Supplies

The proposed costs for materials and supplies are representative of costs and quantities from concrete lining projects similar to the proposed project.

Contractual

The purpose of the contracted engineering services is to provide project management, reporting, engineering, and surveying services necessary for the completion of Task 1 – Concrete lining. The District uses the Qualifications-based method for selection of a qualified and experienced engineering firm to perform evaluations and assemble the required documents. Budgeted costs are representative of contractual costs from concrete lining projects similar to the proposed project.

Other / Environmental and Regulatory Compliance Costs

The proposed costs for materials and supplies are representative of costs from concrete lining projects similar to the proposed project. Costs for any additional environmental compliance 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 \$199,845. The Bureau of Reclamation requested share is \$75,000. The District contribution will be \$124,845 as in-kind services and construction costs.

(h) Other

Contract Compliance – Reporting

Periodic and final reporting work is necessary to fulfill contractual obligations as required by Reclamation. Contract compliance work shall include but not be limited to developing program

performance reports as specified in Sections F.3.2. and F.3.3 of the 2018 Small Scale Water Efficiency Projects FOA. Reporting work will require the input and review of several management-level staff. Budgeted costs are representative of costs from planning and design projects similar to the proposed project. The budgeted contract compliance and reporting costs are for evaluation purposes and are used as a ceiling rate in any resulting award from Reclamation.

Administration and Management

The proposed project will require the input, collaboration, and review of several management-level staff at different times and levels of involvement. Budgeted costs are parametric and representative of costs from planning and design projects similar to the proposed project. The budgeted administration and management costs are for evaluation purposes and are being used as a ceiling rate in any resulting award from Reclamation. The District does not have a federally-approved indirect cost rate agreement.

III ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Will the proposed project impact the surrounding environment?

Post-construction environmental impacts will be positive. The project will reduce the potential of urban flooding by protecting the lateral from breach and spills. District maintenance activities will be reduced by approximately 80%, thereby reducing dust generation, equipment noise and fuel consumption.

Special attention will be given to the following items during the construction phase:

- Dust abatement
- Noise impacts
- No clearing will be done except clearing brush within right-of-way of the District
- Mechanical compaction of the earth to prevent any damage to adjacent property from earth movement

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. The Ysla Lateral was constructed in 1919.

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.

Irrigation system features such as headings and turnouts are continuously modified as part of maintenance operations. Consequently, no adverse impact to individual features of the irrigation system is 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 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 concrete lined or placed underground. The proposed project is allowed under this agreement. 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. The proposed project is likely to have a beneficial impact on commercial and public development in the City of Socorro, Texas.

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 site and right-of-way. There are no required permits or approvals that are part of this project.

V 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 Small Scale Water Efficiency Program for a Grant totaling \$75,000 to conserve water and improve the District's water use efficiency.

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 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 shall fund 62.5% of the Project Costs with the total Project Cost not to exceed an amount of \$200,000.

El Paso County Water Improvement District No.1



By: Johnny Stubbs, President

B. Letters of Project Support

Resolution of Support from the City of Socorro, Texas

Ella Garcia
Mayor

Rene Rodriguez
At-Large

Cesar Neurez
District 1



Ralph Duran
District 2

Victor Perez
District 3 Mayor Pro-Tem

Yvonne Colon-Villalobos
District 4

RESOLUTION # 543

WHEREAS, El Paso County has an arid climate, only receives an average rainfall of about 8 inches, and irrigation, municipal, and industrial water use place significant demands on the limited water resources in the area; and

WHEREAS, The City of Socorro supports projects that conserve water and support the local agricultural economy; and

WHEREAS, The City of Socorro also supports projects with benefits to recreation, tourism, and business development; and

WHEREAS, The El Paso County Water Improvement District No. One (EPCWID) is seeking funding from the United States Bureau of Reclamation WaterSMART Small-Scale Efficiency Program for Fiscal Year 2018; and

WHEREAS, The project proposed by EPCWID for improvements to the Ysla Lateral Canal will lead to water conservation and will benefit the residents and agricultural businesses of the City of Socorro; and

WHEREAS, The project proposed by EPCWID will lead to improvements benefiting adjacent land with water rights owned by the City of Socorro and, according to the City of Socorro's 2014 Comprehensive Master Plan Future Land Use Map, is also the site designated for the development of a new City Hall.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Socorro supports the water conservation project proposed by the El Paso County Water Improvement District No. One to the United States Bureau of Reclamation WaterSMART Program.

PASSED and APPROVED this 21st day of June, 2018.

CITY OF SOCORRO

Ella Garcia
Ella Garcia
Mayor

Olivia Navarro
Olivia Navarro
City Clerk

