

**Request for Proposal from the Department of Interior, Bureau of Reclamation
WaterSMART Program – Small-Scale Water Efficiency Projects for FY 2019**

Unit B Irrigation & Drainage District (Unit B)

**15875 South Ave. A
Somerton, Arizona 85350**

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Project: Pipeline Replacement
DUNS# 092672278

Funding Opportunity Announcement

BOR-DO-19-F005

CFDA 15.507

Application Due Date: Wednesday, April 24, 2019

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Executive Summary

Submission Date: April 24, 2019
Applicant Name: Unit B Irrigation District
Location: 15875 South Avenue A
Somerton, AZ 85350

Unit B Irrigation District (Unit B) of Yuma County located in Somerton Arizona will replace deteriorated two 18-inch leaking concrete pipelines that run parallel to each other with more efficient 30-inch plastic PS-46 (PVC) pipe. This is part of a multi-phased project which will replace approximately 1,200 linear feet in one year. This project will deliver water more efficiently and conserve by no longer leaking.

Due to Unit B's high demand water delivery schedule it is only able to complete major construction projects during scheduled water outages. Scheduled water outages generally take place in the late November/early December timeframe when demand reduces.

Background:

Unit B began in 1917 and was known at that time as the Yuma Auxiliary Project, a Reclamation Project. When operations began, water was received through the Yuma Valley Water Users Canal via a pumping plant operated by Unit B and located geographically just South of County 14th Street and west of Ave. "A" in Yuma County Arizona. The first water was delivered was in 1922.

In 1952, Unit B began receiving water through the Gila Gravity Main Canal (A Reclamation Project) via the Yuma Mesa Irrigation District. In 1955, extensive work was done in coordination with the Bureau of Reclamation to begin upgrades for Unit B. These upgrades were made possible from a loan created by Contract No. 14-06-300-44 with the Bureau of Reclamation. The loan was paid in full in August of 2011 by a Contract between the Gila Gravity Canal and the City of Yuma, the Contract No. 4-07-30-WOO55 Article 13 (a) (1) through Article (4).

This project is outlined in Unit B's Water Conservation Project which is current until the year 2022 under there RRA agreement from Contract No. 14-06-300-44.

Unit B would replace two 18-inch pipelines that run parallel of each other. They would be replaced with one 30-inch PS-46 (PVC) pipeline which would deliver higher cubic feet per second, and would help Unit B with a lot of maintenance by just maintaining one pipeline.

Unit B is a small water district in the Yuma area with limited resources. Because of budget constraints, upgrades or infrastructure improvements to Unit B's outdated systems have been extremely difficult. However, Unit B now can contribute its cost share to this vital project. With the help of the Bureau of Reclamation, this project would allow Unit B to ensure continued efficient delivery of water to land owners via upgraded systems designed for maximum conservation.

Project Goal:

- To replace Unit B's outdated water supply pipelines with PVC, also larger lines to increase the cubic feet per second to insure the farmer with more effective irrigation and save water at the same time.

E.1.1. Evaluation Criterion A—Project Benefits (35 points)

Unit B will replace two deteriorated and cracked 18-inch concrete pipelines that run parallel of each other. They would be replaced with one 30-inch PS-46 (PVC) pipeline which would deliver higher cubic feet per second, and would help Unit B with a lot of maintenance by just maintaining one pipeline. Pipe seepage and leaking would be reduced significantly through the replacement PVC pipe. The greater capacity pipe would enable Unit B to make faster deliveries therefore be more efficient in its use of water.

Plastic PVC pipe has a lower friction loss than concrete pipe because of the smoother surface inside the pipe. The current concrete pipe in use by Unit B was installed in the late 1920s to early 1930s. The infrastructure of the existing concrete pipe does not include the use of gaskets to join two pipes together, thus requiring grout in between the joints. This use of grout has caused significant cracking and leaking within the water delivery system for Unit B. Changes in weather conditions also cause contracting and expanding of the concrete pipe, causing additional damage to the existing system.

The use of PVC will allow for improved gaskets, will decrease flow friction, and will eliminate the existing water efficiency losses and leak issues resulting from cracked concrete structures.

Examples of the benefits of the project include:

- In past calculations for earlier phases of this project, it was estimated that Unit B will save approximately 400-acre feet of water per year, by increasing the cubic feet per second from 7 cubic feet per second up to 12 cubic feet per second.
- The cost savings to land owners would be improved dramatically. Currently temperatures reach well over 100 degrees in the summer and often 115 degrees or higher. The efficiency improvements will allow for a timelier delivery of water to land owners and reduced water supply interruption caused by system repairs due to leaks. This will allow more consistent water delivery and improve the ability for land owners to schedule water with more confidence. (Leaks cause delays in water deliver because the line must be drained and refilled. It is estimated that Unit B loses approximately 2-acre feet of water each time a line needs to be drained to fix a leak).
- Unit B's operational costs would drop by reducing the number of leaks that continually need to be fixed (reducing the ability to address other on-going operations and maintenance efforts). Fixing leaks often results in the District having to utilize overtime pay for employees to ensure the pipeline is fixed in a timely manner.
- The improvements to Unit B's delivery lines will also encourage individual land owners to utilize USDA-NRCS EQIP for their individual improvements once the delivery to them is improved.

E.1.2.Evaluation Criterion B—Planning Efforts Supporting the Project (35 points)

This pipeline replacement project has been outlined in Unit B's September 2017 Water Conservation Plan as required by Unit B's water delivery Contract Number 14-06-300-44 with Reclamation. Since this project has been phased into multiple years, this pipeline project is both listed as an existing water conservation measures, and a selected measure for future years. The selected measure will not only serve the goal of replacing aging infrastructure but also increase capacity and improve irrigation efficiency.

Due to Unit B's aging water delivery infrastructure, the whole pipeline alignment is listed as urgent work to be done in Unit B's Capital Improvement Plan which gets reviewed and updated on a continuous basis.

E.1.3. Evaluation Criterion C—Project Implementation (10points)

Unit B has done earlier phases of this pipeline in past years. The schedule/implementation is rather feasible to manage. The variables are during the financial assistance agreement awarding (if selected for funding) and the availability of the new pipe to be ordered. If notified of selection of award, depending on how long the awarding takes, Unit B may like to request pre-award costs with the ordering of materials. Unit B has worked with Reclamation through Water Conservation Field Services Program and SWEP in the past, and understands the selecting/awarding process can vary greatly from year to year.

Since Unit B has included this project in its Water Conservation Plan and Capital Improvement Plan with the input from our local Reclamation office, Yuma Area Office. Unit B has been able to obtain a Categorical Exclusions Checklist which covers this pipeline replacement project.

Proposed Project Implementation Plan

Project Tasks	Person Responsible	Date to be Completed	Support Documentation (to assist with documentation of completion of project tasks)
<ul style="list-style-type: none"> Schedule Water Outage for the Unit B District 	<ul style="list-style-type: none"> Manager, Bryan Knight 	<ul style="list-style-type: none"> August 1, 2019 	<ul style="list-style-type: none"> Approval of the Unit B Board for the scheduled water outage dates Notification to land owners of water outage Notification to staff of the water outage dates and plan for the project
<ul style="list-style-type: none"> Identify equipment needed to be ordered and scheduled 	<ul style="list-style-type: none"> Manager, Bryan Knight Staff Executive Lorenia Foster 	<ul style="list-style-type: none"> August 1 - 30, 2019 	<ul style="list-style-type: none"> All equipment will be listed and the necessary supplies will be compiled in a basic project spreadsheet. The spreadsheet will list the date the order is needed, the cost and the essential information to complete the order. Information will be presented to the Unit B Board to finalize the approach determined for purchase.
<ul style="list-style-type: none"> Execution of orders of materials and equipment 	<ul style="list-style-type: none"> Manager, Bryan Knight Staff Executive Lorenia Foster 	<ul style="list-style-type: none"> September 30, 2019 	<ul style="list-style-type: none"> Approval for purchases according to Unit B policies (Board Approval as needed based on cost) Standard Unit B purchasing and accounts payable

			processes and procedures as well as paperwork
<ul style="list-style-type: none"> • Delivery & Receipt of all needed Project Equipment and Materials 	<ul style="list-style-type: none"> • Manage, Bryan Knight • Unit B Staff 	October 5, 2019	<ul style="list-style-type: none"> • Receipt of Equipment and Materials on site • Standard purchasing and accounts payables paperwork
<ul style="list-style-type: none"> • Removal of Old Pipeline 	<ul style="list-style-type: none"> • Manager, Bryan Knight • Unit B Staff 	<ul style="list-style-type: none"> • November 26 – November 30th 2019 	<ul style="list-style-type: none"> • The complete removal of old pipeline according to the Unit B Map included at the end of the application
<ul style="list-style-type: none"> • Installation of New Pipeline 	<ul style="list-style-type: none"> • Brain Knight • Unit B Staff 	<ul style="list-style-type: none"> • December 1st – December 7th 2019 	<ul style="list-style-type: none"> • The complete installation of the new pipeline replacing the old pipeline
<ul style="list-style-type: none"> • Testing of the New Pipeline 	<ul style="list-style-type: none"> • Bryan Knight • Unit B Staff 	<ul style="list-style-type: none"> • December 8st – December 9th 2019 	<ul style="list-style-type: none"> • Final days of water outage to test the pipeline to make sure no leaks in the new pipeline are identified.
<ul style="list-style-type: none"> • Repair and cleanup of project construction and maintenance of the project 	<ul style="list-style-type: none"> • Bryan Knight • Unit B Staff 	<ul style="list-style-type: none"> • December 9th – December 21st 2019 	<ul style="list-style-type: none"> • Final clean up and maintenance of construction and maintenance of the project • Review of the project replacement areas to make sure the high standards and expectations of appearance and quality workmanship are met
<ul style="list-style-type: none"> • Project Completed 	<ul style="list-style-type: none"> • Bryan Knight • Unit B Staff • Unit B Board 	<ul style="list-style-type: none"> • February 28th 2020 	<ul style="list-style-type: none"> • All paper completed, and project closed.
<ul style="list-style-type: none"> • Compliance with Federal Required Reporting 	<ul style="list-style-type: none"> • Bryan Knight • Staff Executive Lorenia Foster 	<ul style="list-style-type: none"> • On-going 	<ul style="list-style-type: none"> • Timely submission of reports following required format & template for programmatic and financial information

Unit B will monitor the project through the final construction completion, however, the on-going monitoring of the efficiency and improvements resulting from the project will be a priority to the District long after initial completion of the project.

The Project Implementation Plan will provide a general outline that will help monitor the execution of required project tasks and ensure completion in a timely manner. Additionally, the long-term effects of a more efficient pipeline infrastructure will be monitored to ensure continued efficient water delivery to Unit B land owners.

Budget

Item Description	Computation		Reclamation Funding	Other Funding	Recipient (Unit B) Funding	Total
	S/Unit and Unit	Quantity				
Salaries & Wages	Rate	Hours				
Unit B Crew members (1)	\$27.50	120	\$1,650.00	\$0	\$1,650.00	\$3,300.00
Equipment Operator	\$37.50	120	\$2,250.00	\$0	\$2,250.00	\$4,500.00
Crew Supervisor	\$30.90	200	\$3,090.00	\$0	\$3,090.00	\$6,180.00
Total			\$6,990.00	\$0	\$6,990.00	\$13,980.00
Fringe Benefits						
Social Security, Med., Retirement, Workmen's comp., Health and Dental insurance.			\$2,097.00	\$0	\$2,097.00	\$4,194.00
Environmental compliance costs						
Required documentation of environmental compliance, analyses, permits, or approvals					\$1500.00	\$1500.00
Equipment	Rate	Hours				
580 Backhoe	\$35.00	80	\$1,400.00	\$0	\$1,400.00	\$2,800.00

580 Backhoe with breaker (rental)	\$55.70	80	\$2,228.00	\$0	\$2,228.00	\$4,456.00
Fork Lift (rental)	\$35.00	80	\$1,400.00	\$0	\$1,400.00	\$2,800.00
320 Excavator (rental)	\$115.00	80	\$4,600.00	\$0	\$4,600.00	\$9,200.00
Dump Truck and loader for old concrete removal (rental)	\$60.00	80	\$2,400.00	\$0	\$2,400.00	\$4,800.00
225 gallons Diesel Fuel (off-road rate)	\$3.20		\$360.00		\$360.00	\$720.00
Total			\$14,485.00	\$0	\$15,985.00	\$30,470.00

Supplies/Materials	Rate	Unit				
(2) couplers	\$1,000.00	Each	\$2,000.00	\$0	\$2,000.00	\$4,000.00
30" PVC Pipe	\$59.17	1200 feet	\$35,502.00	\$0	\$35,502.00	\$71,004.00
(2) irrigation stand with Waterman C10 gates	\$25,000.00		\$16,023.00	\$0	\$16,023.00	\$32,046.00
Total			\$53,525.00	\$0	\$53,525.00	\$107,050.00
Contractor/Construction						
None						
Other Operating						
None						
Total Direct						
Total Direct			\$75,000.00	\$0	\$76,500.00	\$151,500.00
Indirect						

At this time Unit B does not have a federally approved Indirect Cost Rate to apply to this project.			\$0	\$0	\$0	\$0
Total Project Activity Costs			\$75,000.00	\$0	\$76,500.00	\$151,500.00

Budget Narrative

Unit B Procurement

The Unit B Irrigation & Drainage District is a small district without a large general operating budget. Its relatively limited reserve funds allow only for determining the most cost efficient and affordable methods to purchase equipment and infrastructure related items.

The staff of Unit B identified typical supplies of the equipment and materials that would be necessary to complete this project related to the preparation and submission of this application. Phone calls, internet and emails were utilized to identify approximate costs for items represented in this application. We believe these costs are as accurate as possible given the current standard costs; however, if cost savings are identified an analysis of any unanticipated higher costs were incurred as well as a desire to not expend more resources than necessary to complete the project in a cost efficient and timely manner. This attention to cost is beneficial to Unit B, Unit B Land Owners and the Bureau of Reclamation.

Labor

Costs of labor involve the costs estimates to complete the project for Unit B using current employee time and effort for the project.

Staffing

It is estimated that basic manual labor to complete the project will require 1 employees for 120 hours at \$27.50 per hour for a total cost of \$3,330.00 with Unit B paying 50% and the Bureau of Reclamation paying for 50% of Staffing

Estimated supervision time and labor is for 200 hours to complete the project at \$30.90 per hour for a total cost of \$6,180.00 also with 50% for Unit B and 50% for the Bureau of Reclamation.

Fringe Benefits

These rates that are shown for all fringe benefits are from category (A) and only for the percentage of time devoted to the project.

Employers Social Security	\$13,980.00 X 6.2%	\$ 866.76
Medicare Ins.	\$13,980.00 X 1.45%	\$ 202.71
Retirement fund	\$13,980.00 X 4.45%	\$ 622.11
Workmen's Comp.	\$13980.00 X 4.9%	\$ 685.02
Health Insurance	\$13,980.00 X 13%	\$ 1817.40

Total \$ 4,194.00

Labor costs for Backhoe, Excavator, and Forklift Operation & Dump Truck Use

It is estimated that 80 hours labor will be necessary for the operation of the Excavator, 80 hours Forklift and 80 hours Backhoe with breaker to complete the project. The backhoe with the 80 hours will also be used to clean up site. The reason the operator time does not match the total time estimated for use of the equipment is that some operation will be completed through employees or supervisor time. Specialized needs that require certain experience and expertise of

operation of this large equipment is estimated to be a total of 120 hours to complete the project with quality.

Funding Plan

Unit B currently has budgeted resources related to this project through project staffing, and the equipment and materials costs will be utilized through the District's annual budget approved by the Board of Directors. The current Unit B Budget has \$75,000.00 estimated in staffing and equipment/materials costs to cover the matching share needed for the project. □

Attached please find Unit B Irrigation and Drainage District Official Resolution of support statement from the Board President related to the resources identified to support the Unit B portion of the project costs.

E.1.4. Evaluation Criterion D— Nexus to Reclamation (10 points)

As previously noted, Unit has a water delivery Contract Number 14-06-300-44 with Reclamation. Unit B receives Colorado River water through the Gila Gravity Main Canal (A Reclamation Project). Unit B will conserve Colorado River water received by managing it more efficiently. Unit B operates Reclamation facilities which are included in this pipeline replacement project.

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

This pipeline replacement project will meet DOI conservation priorities by replacing leaking inefficient dual pipes with a new PVC more efficient. Also, as indicated in Unit B's Water Conservation Plan.

2. Utilizing our natural resources

Unit B's continuous efforts to conserve Colorado River Water, as Lake Mead levels continue to drop is of the utmost priority to Unit B. Replacing leaking pipeline is just one way Unit B aims to utilize this precious resource.

3. Restoring trust with local communities

Unit B serves both farmers and private citizens. Providing more reliable water delivery restores trust in the District and Reclamation who supplies the Colorado River water.

E.1.5. Evaluation Criterion E— Department of the Interior Priorities (10 points)

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

This pipeline replacement project will meet DOI conservation priorities by replacing leaking inefficient dual pipes with a new PVC more efficient. Also, as indicated in Unit B's Water Conservation Plan.

2. Utilizing our natural resources

Unit B's continuous efforts to conserve Colorado River Water, as Lake Mead levels continue to drop is of the utmost priority to Unit B. Replacing leaking pipeline is just one way Unit B aims to utilize this precious resource.

3. Restoring trust with local communities

Unit B serves both farmers and private citizens. Providing more reliable water delivery restores trust in the District and Reclamation who supplies the Colorado River water.

4. Striking a regulatory balance – N/A

5. Modernizing our infrastructure

Replacement of old deteriorated leaking inefficient concrete pipeline with more durable dependable PVC is modernizing infrastructure for Unit B and its customers.