

PIPING THE WILLIAMS LATERAL:

Conserving critical water

WaterSMART Small-Scale Water Efficiency Project Application
FOA # BOR-DO-20-F006



Elephant Butte Irrigation District
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1. Technical Proposal

1.1. Executive Summary

March 3, 2020

Elephant Butte Irrigation District, Doña Ana and Sierra Counties, New Mexico

Main offices in Las Cruces, New Mexico

Elephant Butte Irrigation District proposes a proven water conservation measure to stretch the limited resource available to EBID. The proposed practice of piping a problematic lateral will increase efficiency of water delivered to constituent farmers by reducing losses and improving delivery timeliness. The water conservation goals are also complimented by reducing maintenance requirements in a problematic area. The two major components of the project are:

1) Pipe 1,196 feet of the Williams Lateral, starting from the culvert at its heading. The Williams Lateral is near which is near the tail end of the Mesilla Lateral branch of the Leasburg irrigation system, to reduce seepage and improve delivery to constituent farmers. The water saved by this project's conservation measure will benefit all EBID constituents equally, similar to any increase in efficiency. Funding is requested for the metal pipe and concrete structures, and other materials to pipe the lateral.

2) Improved metering will be installed at the beginning of the new pipeline of the Williams Lateral to more precisely account for the water delivered to the 313 acres from the Williams Lateral. Accurate accounting of delivery at the heading will allow EBID to both better account for water delivered by this lateral and calibrate the improvement to delivery efficiency by the conservation measure of piping a portion of the lateral. All collected data will be available on EBID's website and available to public and interested entities.

All portions of the proposed projects are located on EBID property, which is held by EBID by title after transfer from the Bureau of Reclamation.

The project will take one maintenance season (winter) to complete. If the agreement is in place and the project begins in October 2020, the anticipated completion would be in March 2021.

1.2. Background Data

1.2.1. *The Rio Grande Project:*

Elephant Butte Irrigation District (EBID) is the New Mexico portion of the Rio Grande Project, which was authorized in 1905. The major features of the Rio Grande Project are: Elephant Butte Dam, a large storage dam completed in 1916 with a capacity of about 2.1 million acre-feet; Caballo Dam, a flood control and regulation dam completed in 1938 with a capacity of about 344 thousand acre-feet, but it is operated at much lower levels to re-regulate releases from Elephant Butte Dam to meet downstream demands;

- Elephant Butte Irrigation District in New Mexico, providing water to farmers on 90,640 acres of water-righted land in the Rincon and Mesilla Valleys;
- El Paso County Water Improvement District No. 1 (EPCWID) in Texas, providing water to 69,010 water-righted acres for irrigation in the Mesilla and El Paso-Juarez Valleys, including water supply to the City of El Paso;
- The Republic of Mexico receives its delivery of Rio Grande Project water pursuant to the 1906 *Convention between the United States and Mexico - Equitable Distribution of the Waters of the Rio Grande* at the Acequia Madre diversion from the Rio Grande on the international border between El Paso and Ciudad Juarez.

EBID is a legislatively authorized political subdivision of the State of New Mexico. The district operates under New Mexico statutes §73-10-1 through §73-10-47, Irrigation District Cooperating with United States under Reclamation Laws; Formation and Management, and §73-11-1 through §73-11-55 Irrigation Districts Cooperating with United States under Reclamation Laws; Fiscal Affairs; Local Improvements and Special Powers. As defined by New Mexico statutes, irrigation districts cooperate with the federal government on Bureau of Reclamation projects. These statutes generally state that irrigation districts are to:

- Serve as a contracting agency for water users to arrange to repay construction obligations to the government and furnish funds for operation and maintenance; and in connection with other matters that must be agreed to, in contract for, between the government and water users. (§73-10-1 paraphrase)
- Serve as an agency for the assessment and collection of operation, maintenance and construction charges and the payment of same, to the government in accordance with contractual arrangements. (§73-11-28 paraphrase)
- Provide a water users' organization that might later be expanded for the purpose of assuming control of operation and maintenance upon transfer by the Bureau of Reclamation. (§73-10-45 paraphrase)

EBID is governed by a board of nine elected members drawn from the district's constituents. The board meets monthly and has broad powers to set policies, which are implemented by district personnel, who are overseen by the District Manager.

1.2.2. *Physical facilities:*

EBID's lands are served by three primary diversion points – Percha, Leasburg, and Mesilla Dams. Mesilla Dam also delivers water to EPCWID's Mesilla valley lands in Texas. EBID has about 300 miles of canals and laterals, and the district is broken up into 13 operational units that are

manned by ditch riders. Only about 30 miles of the laterals are currently in pipe. The district also has about 250 miles of drains that return subsurface drainage and storm water to the Rio Grande. Reclamation retains title to the diversion dams, and EBID operates and maintains them under contract with Reclamation. EBID owns the canal and drainage systems, along with associated land.

1.2.3. Hydrology and Water Supply:

Water for EBID, EPCWID, and Mexico is released from storage in Elephant Butte Reservoir and regulated through Caballo Reservoir. Orders for EBID, EPCWID, and Mexico are summed, and the release gates at Caballo Dam are adjusted to meet the specific demand, accounting for gains or losses in the system and lag times to the diversion points. Each district and Mexico has an allocation for diversion from the Rio Grande. The methodology for determining these diversions is described in the Operating Agreement and Operating Manual that the two districts and Reclamation negotiated and approved in 2008.

A “full allocation” for annual diversion to EBID is about 495,000 acre-feet. EBID has not had a full allocation since 2002 due to the persistent and increasingly severe drought in the area. The RCP experienced a similar drought cycle from 1951 through 1978, with very short years interspersed with an occasional wet year of full supply. From 1979 through 2002, both districts and Mexico had full allocation on January 1 of every year. Having occurred for 24 consecutive years, full supply came to be considered a normal year. It is not. The last twelve years have reminded us that drought and shortage is more normal than full supply, making water conservation all the more important.

Given its allocation for diversion, EBID’s Board of Directors sets the allotment for delivery to constituents’ farm gates by estimating the conveyance efficiency (delivery/diversion), and allotting water pro-rata to the district’s 90,640 acres. During the full supply years of 1979-2002, with a three-foot allotment every year, the conveyance efficiency was about 65 percent. Of the 35 percent loss, about ten percent was attributed to losses in the main canal system and 25 percent was attributed to losses in the laterals.

In the seventeen years since 2002, the allotment has only been full once, in 2005. In 2003 and 2004, the allotment was only eight inches. In 2011, it was four inches, and in 2012 it was ten inches. The year 2013 saw the worst water supply in the nearly 100 year history of the Rio Grande Project, with an allotment to farmers of only 3.5 inches per water righted acre. In 2014 EBID’s members received seven and a half inches, in 2015 it was eleven inches, in 2016 it was thirteen inches, in 2017 it was 24 inches, in 2018 it was 10 inches, and last year it was 14 inches.

Even though the 2017 allotment to EBID farmers of 24 inches was great news, a full allotment is 36 inches. The average for the period 2011-2016 was only eight inches and the average for the last seventeen years (2003-2019) was sixteen inches. While last year’s improved supply has reduced aquifer decline, effects of the previous six years of hard drought are still quite evident.

Since a significant portion of the losses are fixed, independent of flow rate, the conveyance efficiency gets lower in short supply years, and has generally been at or below 50 percent in the latest drought. The short supply compounded by higher relative losses makes drought particularly painful in EBID, and this has been much of the motivation for this project.

1.2.4. EBID Members:

EBID remains an agricultural water provider. About four percent of the district’s water righted acreage is in parcels of less than two acres, known as small tract irrigators, operating on a fixed rotation that is scheduled based on available water. The other 96 percent is classified as farm rate, and those constituents schedule and order water on a demand basis.

The City of Las Cruces (CLC) holds about 1500 acres of EBID water rights. They acquired these water rights as a Special Water Users Association (SWUA). The statutory basis for the SWUA was jointly developed by EBID, CLC, and the New Mexico Office of the State Engineer to facilitate the transfer of agricultural surface water to municipal use. Unfortunately, the decade of drought has prevented CLC from developing the surface water treatment capacity to use the water, and until they do, the water allotted to CLC is leased on an annual basis to irrigators. Therefore, EBID has no current uses other than irrigation.

1.2.5. Past work with Reclamation:

EBID has worked on several projects with Reclamation, including three projects in the Water 2025 Challenge Grant program in 2004. One of those projects was in partnership with El Paso Water Utilities to improve monitoring water quality in the Rio Grande Project. Another was in partnership with the City of Las Cruces, to develop regulating retention capacity on one of the City’s storm water ponds. The third implemented various water conservation pilot projects, including drip and sprinkler irrigation using surface water. In 2018 EBID also completed a multi-objective water conservation project titled Rincon WHEN: Water Habitat Energy Nexus that included several conservation measures including piping 12,000 ft of the Rincon Lateral. EBID successfully completed all portions of the project and the piped lateral has proven to be a huge improvement to the District and the farmers in the area. In 2019 EBID also began another multi-objective water conservation project on the Picacho Lateral system known as Picacho WHEN: Water Habitat Energy Nexus that includes piping 2,634 ft of the Nusbaum Lateral and 6,163 ft of the Picacho Lateral. This project is underway and will directly benefit 850 acres of the Picacho branch of the Leasburg system. A summary of previous work carried out by EBID with Reclamation funding is presented below in Table 1.

Table 1. Previous working relationships; EBID grants from Reclamation

Program	Grant No.	Year Started	Amount
Challenge Grant 2025-EBID	05-FC-40-2394	2004	\$300,000
Challenge Grant 2025-EP	05-FC-40-2392	2004	\$154,675
Energy and Water Dev. Appr. Act	06-FC-40-2541	2006	\$1,651,500
Remote Sensing	08-FC-40-2799	2008	\$239,354
Irrigation Management System	R12AP40019	2012	\$80,000

WaterSMART – Rincon WHEN	R14AP00100	2014	\$808,557
WaterSMART – Picacho WHEN	R18AP00197	2019	\$998,182

The project proposed here will improve EBID’s delivery efficiency, providing more Project water to EBID’s farmers and reducing their need for groundwater. Maintaining control over Project water supply is critical to the farmers that constitute EBID and to the effective functioning of the Rio Grande Project.

1.3. Project Location

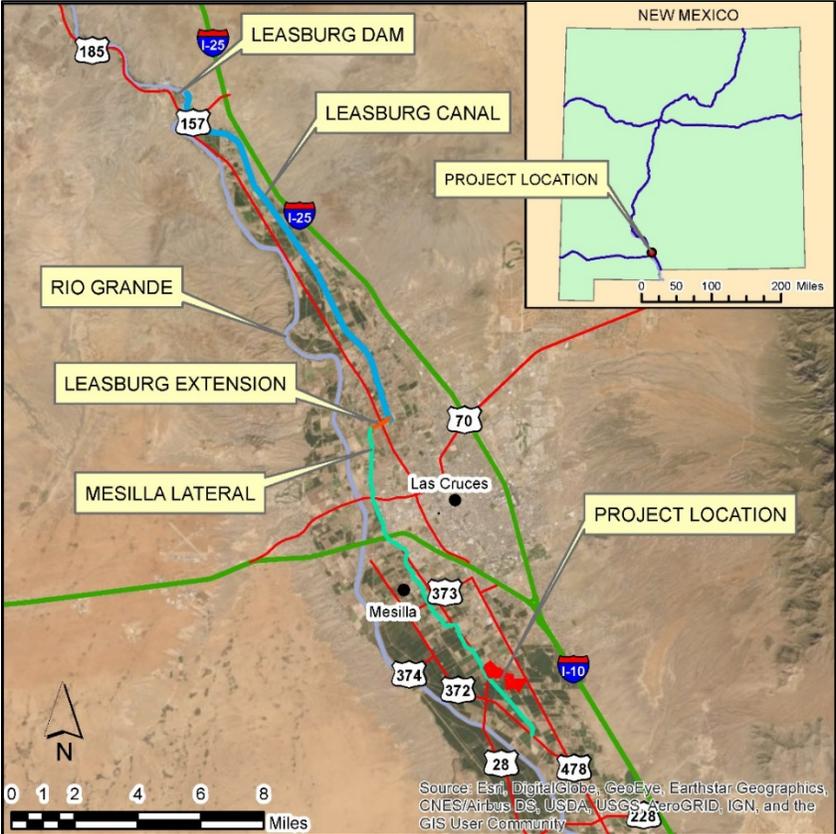


Figure 1. Project Location Map

This project is located south of Las Cruces, New Mexico. More specifically this project is 3.7 miles south southwest from the plaza of the Town of Mesilla and 5.9 miles south of the City of Las Cruces City Hall. This entire project lies within the boundaries of the EBID which provides surface water irrigation to the Mesilla and Rincon Valleys. This proposed small-scale water efficiency project includes improvements to the Williams Lateral. Figure 1 shows the project’s proximity to the City of Las Cruces and Town of Mesilla.

The Williams Lateral is a branch of the Mesilla Lateral and its heading is 49,416 ft from the beginning of the Mesilla Lateral, 78% of the way down the Mesilla Lateral, and 13.64 miles from the diversion for the Rio Grande at Leasburg Dam. The Leasburg Main Canal branches into the Las Cruces Lateral and the Leasburg Extension which leads to the Mesilla Lateral.

The Williams Lateral begins with a culvert underneath NMDOT Highway 28 which is an important farm to market, agribusiness, and agritourism road. Because the heading gate and culvert underneath Highway 28 are in good condition and the culvert underneath Highway 28 is the responsibility of NMDOT, the beginning of the pipe proposed by this small scale project is at the downstream headwall of the NMDOT culvert. Using this culvert as the center of the project, its coordinates are: Latitude 32°13'51.56"N Longitude 106°45'30.74"W (WGS83).

1.4. Technical Project Description and Milestones

1.4.1. Nature of Problem:

EBID is required by statute to allocate water to its constituents pro-rata. Each acre of water-righted land in the district must receive the same allotment of water. However, the delivery of allotted water to land at the tail end of this century old, dendritic canal system is both inefficient and operationally difficult.

EBID diverts water from the main stem of the Rio Grande at three principal diversion points: Percha Dam just below the release point of Caballo Dam at the head of and irrigating the entire the Rincon Valley; Leasburg Dam, at the head of the Mesilla Valley and irrigating the upper third of the valley, and Mesilla Dam, just south of Las Cruces, and which irrigates the lower two thirds of the Mesilla Valley.

The downstream end of any system, including the Leasburg system is particularly problematic. The system connected to the Leasburg Dam, beginning with the Leasburg Canal, has very long reaches of lateral sub systems. The Mesilla Lateral, a branch off of the Leasburg system is long but continues to be a very active delivery system delivering to over 4,700 water righted acres. Its tail-endedness is exacerbated by the constriction of its conveyance system, much like a blocked coronary artery, by the road culverts and other development that has taken place in the Las Cruces and Mesilla area during the century since the canal system was built. Piping of laterals can thus be looked at as a stent surgery of a canal system artery.

1.4.2. Pipeline Project – Expected Outcomes:

1,194 ft of the Williams Lateral (0.23 miles total) will be converted from an open, unlined earthen channel to a corrugated steel pipeline with concrete check and diversion boxes. The Williams Lateral is strategically targeted because it is located near the tail end of the Mesilla Lateral branch of the Leasburg system and has both major operational difficulties and great potential water delivery and efficiency improvements. This lateral also serves some of the most active and profitable production of the Mesilla Valley. Pipeline projects benefit EBID and its farmers in various ways including reduced seepage, reduced hydraulic roughness allowing for less head loss along each canal, reduced weed and vertebrate pest problems, reduced maintenance, improved safety and improved transmission of groundwater. These

improvements to the tail end of our system also benefit the upstream farmers whose water order delivery will be less tied up by those downstream.



Figure 2. The Kerr Lateral, which has been placed in pipe



Figure 3. The Rincon Lateral, which has been placed in pipe

The tail end of the Mesilla Lateral operating area suffers because it is difficult and inefficient to deliver surface water from its river diversion, which is 13.64 miles upstream at Leasburg Dam, causing greater system losses that affect the available on-farm water supply for all of EBID's members. Rodent activity and breaches of canal banks, often called "ditch breaks" are also constant problems with this unlined earthen ditch. Ditch breaks are wasteful and every time there is a ditch break the problem ripples upstream and downstream throughout the system. By piping the lateral, the seepage and other operating losses are virtually eliminated and the chance of breaches in the canal banks eliminated.

EBID's District Engineer has experience designing gravity flow and pressurized pipeline systems including examples shown in Figures 2 and 3. As EBID designs them, pipeline vents/manholes are spaced roughly every 300 feet. Concrete box check structures with full width weirs are designed to replace the existing check structures. By eliminating the unlined banks of the lateral and culvert style check structures as shown below in Figure 4, which don't have overflow weirs, with metal pipe and concrete check box structures as shown in Figure 5, the water surface elevation can more safely be increased closer to that of the source canal without chances of runaway. By properly designing the elevation of the top of the overflow weirs within the box check structures, the water surface elevation can be safely raised and more easily controlled which allows for increased head pressure over the turnouts to the farm fields. The top of the concrete box structures are designed for adequate freeboard, a minimum of 18", to allow any flow in excess of the gate opening to overflow the weir to safely pass on downstream. The vent/manholes are designed and constructed to be taller than the concrete box structures to eliminate the chance of overflowing. By increasing the head pressure maximum potential flow from the canal is increased and fields can be irrigated more rapidly and more efficiently. This increase in delivery head and improved timing due to reduced friction and capacity of the lateral is estimated to improve the irrigation efficiency of the benefited acreage by 5%. This increase in head pressure and improved delivery flow rate and timing alone is estimated to

conserve 306 Acre/Feet per year by improving the on farm efficiency as shown in Table 2 below.



Figure 4. Culvert check structure of Williams Lateral at Sta# 12+18

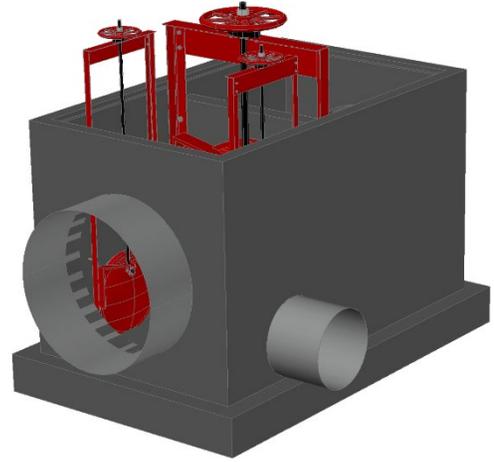


Figure 5. Example pipeline concrete check box

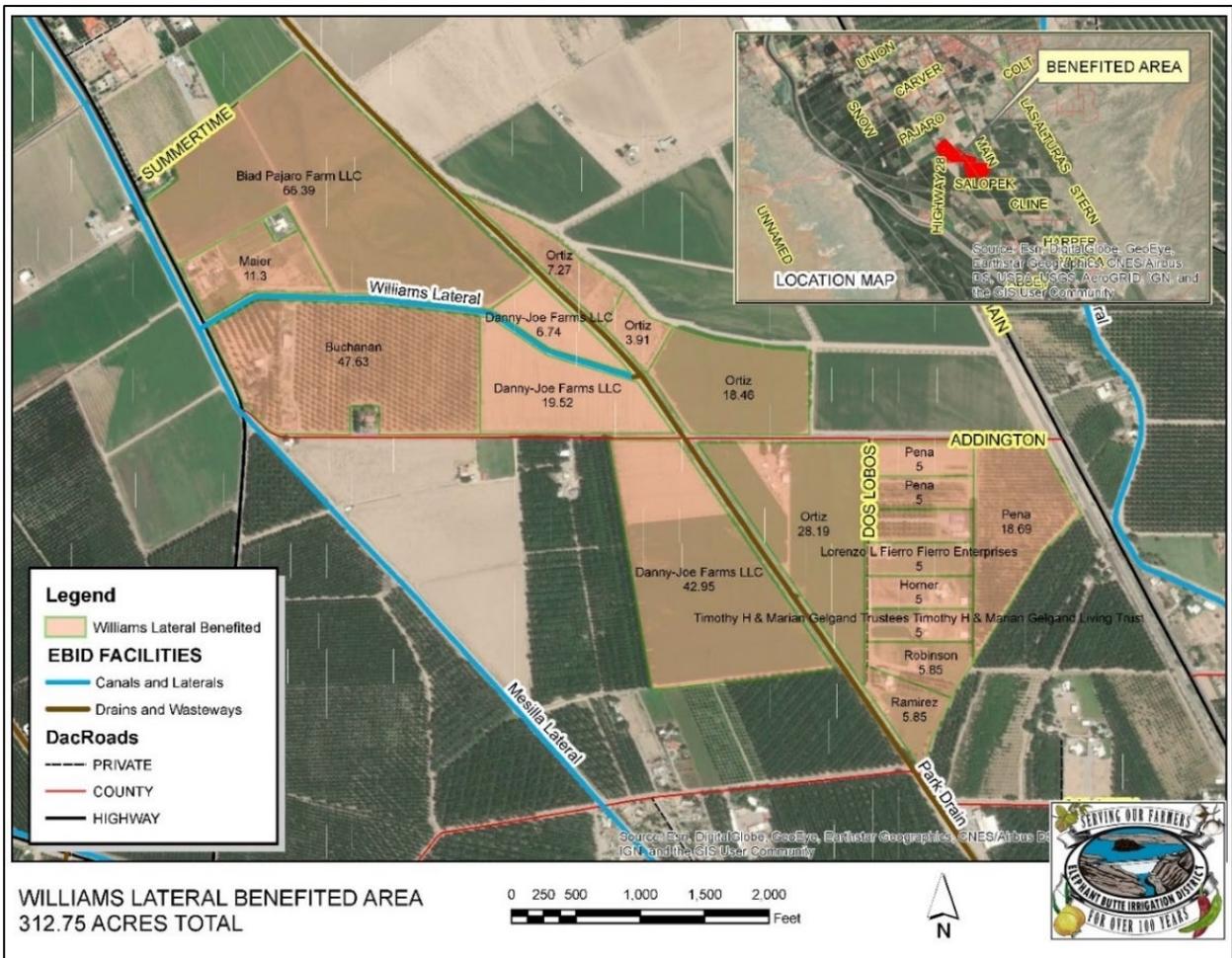


Figure 6. Area irrigated by Williams Lateral and directly benefited from the proposed pipeline

Figure 6 shows the water righted areas directly benefited by the project including the names of the current landowners. Twelve landowners and nineteen parcels are directly benefit by the proposed pipeline for a total of 312.75 acres. Figure 7 below shows the extent of the project and pipeline, the location of project features, and an example of a concrete pipeline check box which is a critical project component.

Farmers in the project service area also benefit when conveying groundwater that they pump into the system. An example of a farmer discharging groundwater and utilized a piped lateral is shown in Figure 3. The virtual elimination of seepage reduces the amount of water they need to pump for a given farm delivery and increases the delivery flow rate. These improvements reduce the amount of water pumped, and reduce the energy consumed by that pumping.

Improved metering equipment will be installed near the beginning of the proposed pipeline so that deliveries from the Williams Lateral can be more precisely measured and quantified.

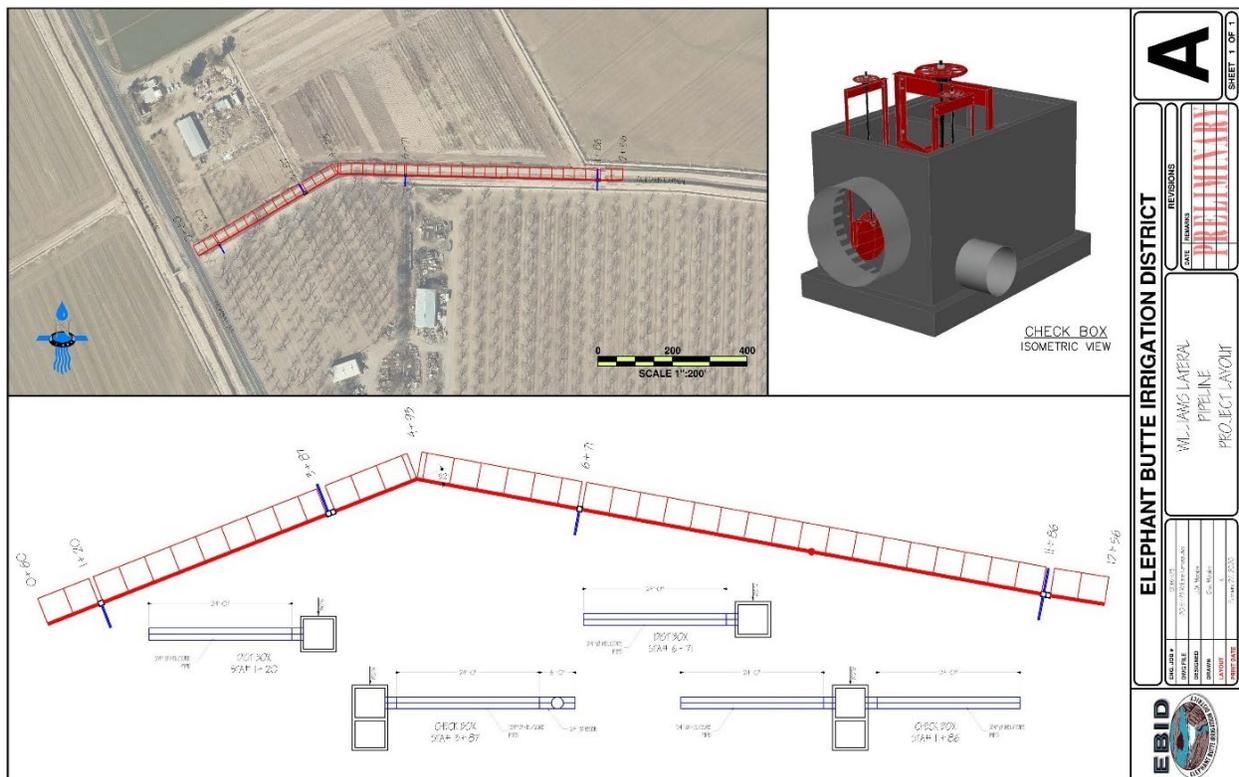


Figure 7. Project overview - Williams Lateral Pipeline

1.4.3. Project Milestones:

Preliminary design for the proposed pipeline is complete. EBID will complete design and final construction drawings in-house following the award of a contract. Environmental compliance will begin at this same time. Assuming that a contract is awarded and signed in no later than July 1, 2020, the following list of milestones should be accomplished without delay. No permitting is required beyond the necessary environmental compliance paperwork. A chart of expected construction timeline with construction milestones is provided below as Figure 8.

Milestones (Completion):

Final design and construction drawings	September 1, 2020
Environmental compliance documentation	September 1, 2020
Permitting	N/A, September 1, 2020
Break ground and begin demolition	October 1, 2020
Pipe delivery	November 2, 2020
Construction completion	March 1, 2021

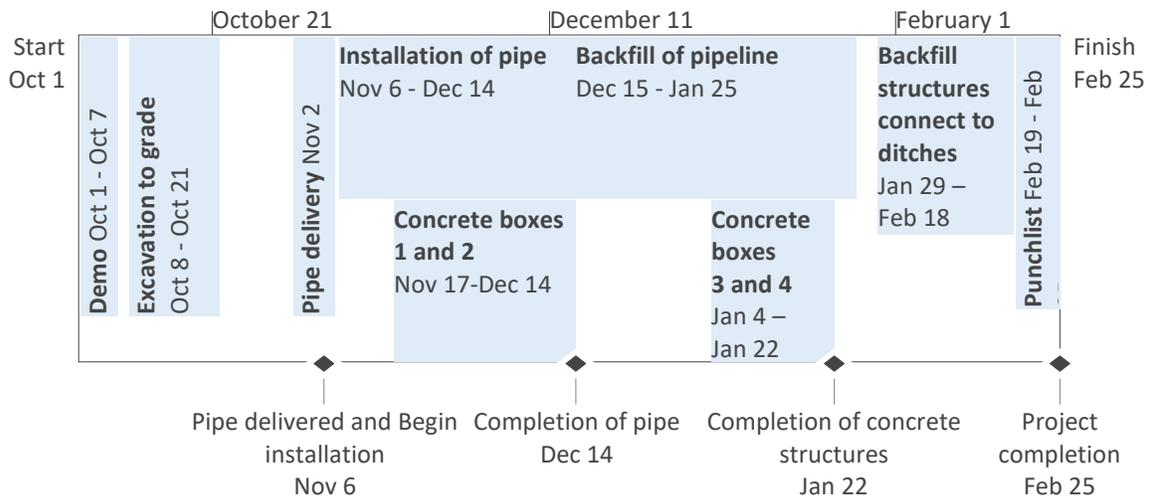


Figure 8. Project construction timeline chart

1.5. Evaluation Criteria

1.5.1. Evaluation Criterion A—Project Benefits:

Based on research at New Mexico State University published by Haddad, 2005, it is calculated that piping 1,196 feet of the Williams Lateral will result in a reduction of seepage associated with EBID surface water deliveries of 87 acre-feet per year. This translates into an equivalent increase in water supply for all water righted acres within EBID.

The two water savings components – lateral seepage and projected increase of on-farm efficiency improvement are analyzed based on best available information. Calculation sources are included in the right-hand column, with the letters in the formulas referring to the line letters on the right hand side. Methodology and seepage rates were determined from seepage tests as part of a NMSU student’s Master’s thesis (Haddad, 2005).

EBID has significant experience in installing and evaluating the performance of pipe laterals. In the last ten years, EBID has placed approximately 30 miles of laterals in pipe. When previous piping projects began, a Masters candidate in Civil Engineering at New Mexico State University researched the water savings from reduced lateral seepage (Haddad, 2005). He performed ponded seepage tests before and after installation of pipe. One important conclusion he reached is that piping saves, on average, about 385 acre-feet of water per mile of piped lateral. He also developed a model for estimating seepage from a lateral to be piped based on

Vedernikov’s method, and it included consideration of channel geometry, soil type, and operating schedule. Haddad’s model was used as shown in Table 2 to estimate the savings from reduced lateral seepage.

Table 2. Calculations of benefits of water conservation measures

Var	Lateral seepage reduction		Source
A	1,196	feet	Project Plan
B	0.23	miles	A x 5,280
C	385	AF/mile/year	Haddad, 2005
D	87	AF seepage reduct./year	B x C
On-farm deep percolation reduction			Source
E	312.75	Water righted acres	Project Plan
F	3.5	ft/year Consumptive Irig. Req't	Est. SS 101
G	1,095	AF/year Consumptive Irig. Req't	E x F
H	55%	irrigation eff	Typical AEN 478
J	1,990	Farm Delivery Req't	G/H
K	60%	irrig eff	Planned
L	1,824	Farm Delivery Requirement	G/K
M	166	AF FDR reduction/year	J - L
Total Water Conserved			Source
N	253	Total water conserved/year	D + M
O	\$191,097	Project Cost	Budget
P	\$755.14	/AF conserved/year	N/O
Q	1.37	ft, 17 year avg allotment	EBID records
R	124,177	AF avg allotted water	Q x 90,640 ac
S	0.20%	of avg allotted water conserved	N/R

Corrugated Metal Pipe with an aluminizing coating is proposed be used to pipe the Williams Lateral and concrete check and diversion boxes will be constructed where necessary. These materials virtually eliminate water lost from seepage and evaporation. Reduction in canal losses will be evaluated with the proposed improved metering.

More recently, staff used records from EBID’s Hydrology Department to assess losses based on measured inflows and deliveries for unimproved and piped laterals during the 2012 water season. The results, summarized below in Table 3, are consistent with Haddad’s findings. As shown, the measured conveyance efficiency in the laterals averaged 58 percent in unimproved laterals compared to 92 percent for pipeline laterals.

Table 3. Conveyance loss evaluation for unimproved and piped EBID laterals

Pipeline Laterals	Measured Inflow, AF	Charges, AF	No. Deliveries	Avg Charge (in)	Efficiency
Palmer Lateral	297	307	29	3.55	103%
Kerr Lateral	274	255	35	4.91	93%
Vega Lateral	406	364	34	5.87	90%
Jimenez Lateral	301	259	10	6.95	86%
S-1 Lateral	89	76	10	6.74	85%
Pipeline Totals	1,367	1,261	118	5.06	92%

Unimproved Laterals					
Kilgore Lateral	1,165	822	24	6.08	71%
American Bend Lateral (+Hare, Arrington)	1,179	775	113	4.67	66%
Dona Ana Lateral	1,834	912	285	5.03	50%
Brazito Lateral	431	212	52	4.07	49%
Anthony Lateral	390	163	17	6.29	42%
Open Channel Totals	4,999	2,884	491	5.15	58%

By improving head pressure and flow rate to each farmers turnout gate a direct on farm improvement is provided by the proposed project. This project also compliments work done in coordination with NRCS in the area where farmer initiated projects strive to improve on farm delivery and irrigation efficiency. Many of the Rincon and Mesilla Valley farmers utilize NRCS EQUIP and NRCS WaterSMART funding for improvement of their ditches and irrigations systems. When EBID can provide increased flow, improvements such as concrete lined ditches with high flow turnouts are directly complimentary because at least some portion of farm ditches are currently sized to handle the current maximum flow EBID provides. It is anticipated that the farmers served by the Williams Lateral will be more likely to participate in NRCS assistance for irrigation related on-farm improvements and capitalize on the improved head pressure and flow rate.

Significantly, the estimate shown in Table 2 that 253 acre-feet per year can be saved by summing lateral seepage reduction and on-farm deep percolation reduction which is nearly 0.2% percent of the average annual allotment of the past decade. Table 2 also shows that the cost of conserving water for this project is about \$755 per acre-foot per year, below the marginal value of water on most crops in the study area. The decrease in labor and pesticides required to maintain the proposed piped portion of the Williams Lateral is not included.

The proposed work makes more surface water available to farmers at their head gates and farmer pumped groundwater can be conveyed more efficiently. Both effects reduce the farmer’s dependence on groundwater, which in the current drought is in decline. EBID’s farmers have been sustainable in the long term because of their ready access to groundwater in drought that is replenished in wetter times. The objective here is to reduce the reliance on

groundwater, thus reducing the amount of pumping and energy required in agriculture. These positive impacts are benefits to the local agriculture sector and economy.

Improved metering will be installed at the beginning of the new pipeline of the Williams Lateral to more precisely account for the water delivered to the 313 acres by the Williams Lateral. The proposed project will utilize an ultrasonic level-velocity transmitter mounted to the bottom of the pipeline upstream of the first diversion from the Williams lateral to continuously monitor and fully quantify flow passing the sensor and delivered by the lateral. The measurements of the ultrasonic sensor will be recorded and transmitted to EBID's offices by a radio telemetry unit (RTU) installed and maintained by EBID's SCADA Department. Accurate accounting of delivery from the Mesilla Lateral to the Williams Lateral will allow EBID to both better account for water delivered by this lateral and calibrate the improvement to delivery efficiency by the conservation measure of piping a portion of the lateral. All collected data will be available on EBID's website and available to the public and interested entities.

1.5.2. Evaluation Criterion B—Planning Efforts Supporting the Project:

The piping of laterals and sub-laterals work was envisioned in the Lower Rio Grande Regional Water Plan, which was composed by the Lower Rio Grande Water Users Organization (LRGWUO, of which EBID is an active member) and accepted by the New Mexico Interstate Stream Commission in 2004. The type of system efficiency improvement project was also included within the 2017 Regional Water Plan as a Strategy to Preserve Agriculture.

Documentation of these existing planning efforts can be found at:

- <https://www.ose.state.nm.us/Planning/rwp.php>
- https://www.ose.state.nm.us/Planning/RWP/11_LRG/1999/LOWER-RIO-GRANDE-REGIONAL-WATER-PLAN.pdf

This proposed project implements a goal of piping problematic sub-laterals with excessive seepage and operation losses and address a problem identified in both plans listed above of maximizing the benefit of Rio Grande Project surface water. Both plans listed above include the priority of piping sub-laterals of EBID's system to address excessive system losses. This project was determined as a priority opposed to other potential projects because the Williams Lateral is known to be one of the most problematic laterals within EBID's system. This proposed project of piping this lateral is also selected over other measures and potential projects because it can be efficiently piped and fits well within the Bureau of Reclamation vision of small-scale water conservation projects.

1.5.3. Evaluation Criterion C— Project Implementation:

Project implementation will fall into three categories 1) Preconstruction activities including final design and completion of construction drawings and specifications, and environmental compliance documentation 2) Ordering of materials and delivery of pipe for the beginning of EBID's 2021 Fiscal Year (Nov 1 - Oct 31), and 3) Construction of the project. As illustrated by Figure 8 : *Project construction timeline chart* above, project construction will consist of demolition existing structures and preparation of the canal, excavation of the pipeline foundation to design elevations, pipe delivery, installation of pipe including connecting individual joints of pipe and excavation of concrete structure foundations, construction of

concrete structure boxes, backfill of the pipeline using approved on-site native materials, backfill of the structures and connection of those structures to the farmers ditches, installation of circular gate valves within the concrete structures, final grading, vehicle gate installation, bollard and signage installation, and final punch list and cleanup. Beyond supplied materials such as ready-mix concrete, pipe, and turnout gates, all construction will be completed by EBID personnel. EBID’s earthwork, pipe installation, carpenter, concrete placement, and fabrication teams are appropriately trained and well skilled to complete the proposed project safely and within the projected timeline. As this work takes place entirely on EBID property, no permitting is required beyond the environmental compliance paperwork required and no new policies or administrative actions required to implement the project.

EBID will complete design and final construction drawings in-house by EBID’s Engineering Department led by the EBID’s Registered Professional Engineer following the award of a contract. Preliminary design for the proposed pipeline is complete and final design will require roughly three weeks of effort by EBID personnel. Environmental compliance will begin at this same time. The estimated cost of environmental compliance documentation was made by recent cost of similar compliance efforts for similar projects. Due to the simplicity of this project and EBID’s experience with the Picacho WHEN Project (BOR Agreement: R18AP00197), it is expected that Categorical Exclusion will be appropriate for this proposed project taking place on EBID property. Assuming that a contract is awarded and signed no later than July 1, 2020, the following list of milestones should be accomplished without delay. A chart of expected construction timeline with construction milestones is provided above as Figure 8.

Milestones (Completion):

Final design and construction drawings	September 1, 2020
Environmental compliance documentation	September 1, 2020
Permitting	N/A, September 1, 2020
Break ground and begin demolition	October 1, 2020
Pipe delivery	November 2, 2020
Construction completion	March 1, 2021

1.5.4. Evaluation Criterion D—Nexus to Reclamation:

EBID is the New Mexico portion of the Bureau of Reclamation’s Rio Grande Project, which was authorized in 1905. The EBID owns, operates, and maintains the New Mexico portion of the Rio Grande Project. The Rio Grande Project furnishes a surface irrigation water supply for about 178,000 acres of land and electric power for communities and industries in the area. EBID delivers Project water to 90,640 water righted acres of the Rio Grande Project in New Mexico.

Project lands occupy the river bottom land of the Rio Grande Valley in south-central New Mexico and west Texas. Water is also provided for diversion to Mexico by the International Boundary and Water Commission-United States Section to irrigate about 25,000 acres in the Juarez Valley. Physical features of the Project in New Mexico owned by EBID through Title Transfer in 1996 include roughly 300 miles of canals, laterals, and wasteways and roughly 250 miles of drains. The 3 diversion dams of the Rio Grande Project in New Mexico, Percha Dam,

Leasburg Dam, and Mesilla Dam are still owned by the Bureau of Reclamation although they are operated and maintained by EBID. Federal input and coordination with EBID are provided by the Water and Land Division of the Bureau of Reclamation. This project will not impact or benefit any tribes.

1.5.5. Evaluation Criterion E— DOI and BOR Priorities:

The proposed project addresses several Department of Interior (DOI) and BOR priorities: DOI Priority 1) Through experience and science EBID is proposing a water conservation measure that is line with DOI's conservation stewardship legacy. The proposed project is a direct adaptation to changes in the environment, climate change, and drought. This proposed project implements one of EBID's goals of piping problematic sub-laterals with excessive seepage and operation losses and maximizing the benefit of Rio Grande Project surface water. By improving EBID's dendritic canal system, EBID has identified and addressed an opportunity to improve a Project water transportation and distribution system and seeking to resolve conflicts.

DOI Priority 2) The proposed work makes more surface water available to farmers at their head gates and farmer pumped groundwater can be conveyed more efficiently. Both effects reduce the farmer's dependence on groundwater. The objective here is to reduce the need for groundwater, thus reducing the amount of pumping and energy required in agriculture. These positive impacts allow for a reduction of power consumed and cost for producing food and fiber in New Mexico and meeting American economic needs.

DOI Priority 5) Piping the proposed portion of the Williams Lateral exemplifies the DOI goals of modernizing our nation's infrastructure. This goal of the proposed infrastructure construction serves American needs through water conservation which in hand addresses cyclical and deferred maintenance by bringing the aging infrastructure to a modern standard and reducing maintenance in a problematic area.

BOR Priorities:

The proposed project increases the reliability of Rio Grande Project water. The proposed proven water conservation measure will stretch the limited resource available to EBID, New Mexico, and the Rio Grande Project and conserve critical groundwater that provides EBID's farmers resiliency in drought. EBID's gravity flow system can be improved through science and technology including the use of modern materials for piping and lining the water conveyance system. At EBID science and technology are utilized to determine the best conservation measures and to prioritize which locations are best suited for conservation measures. Examples of leveraging science and technology include EBID's Groundwater Resources and SCADA Departments who assist with identifying areas or critical groundwater recharge and excessive canal seepage. Tools such as the proposed ultrasonic level-velocity sensor allow for accurate flow measurements and calibration of canal efficiency models. The proposed water conservation measure is specifically chosen to address ongoing drought by stretching EBID's limited water supply in both delivery efficiency and on-farm efficiency. These measures and canal improvements address the downstream Leasburg Canal and Mesilla Lateral constituents which are by definition a rural community. These rural community farmers are the heart and soul of the economy in southern New Mexico and improvements to their water supply benefit New Mexico and the US economy.

2. Project Budget

2.1. Funding Plan

EBID’s plan for funding includes a guaranteed minimum 50% cost match from EBID as budgeted capital improvements. Each year EBID’s Board of Directors establishes a budget which includes system improvement projects. EBID’s Board of Directors has committed to a minimum of 50% cost share throughout this project if funding is awarded as shown within the attached signed and notarized Resolution 2020-02. EBID cost share funding will be available time of funding in forms of labor, equipment, and purchasing of materials.

The Budget Plan and this proposal offer a 58.9% EBID cost share and request the maximum \$75,000 Federal funding to complete the proposed small scale water efficiency project as shown by Table 4.

Table 4. Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal Funding	\$75,000
Costs to be contributed by the applicant	\$116,097
Value of third-party contributions	-0-
Total Project Cost	\$191,097

2.2. Budget Proposal

Table 5. Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	\$/unit	Quantity		
Salaries and Wages				
L. Barrett, Maintenance Projects Director	\$ 10,097	0.25	Month	\$ 2,524.25
Z. Libbin, District Engineer	\$ 10,097	0.15	Month	\$ 1,514.55
P. Lopez, SCADA Systems Director	\$ 10,097	0.05	Month	\$ 504.85
Engineering Design Technician	\$ 4,039	0.25	Month	\$ 1,009.75
Project Engineer	\$ 4,125	0.03	Month	\$ 123.75
Engineering Survey Technician	\$ 3,432	0.03	Month	\$ 102.96
Patrolman/ Field Survey Technician	\$ 2,747	0.25	Month	\$ 686.75
Patrolman/ Field Survey Technician	\$ 2,037	0.34	Month	\$ 692.58
Patrolman/ Field Survey Technician	\$ 1,933	0.34	Month	\$ 657.22
Maintenance Foreman	\$ 4,065	0.75	Month	\$ 3,048.75
Assistant Watermaster/Concrete Construction Lead	\$ 4,853	0.5	Month	\$ 2,426.50
Patrolman/ Construction Labor	\$ 3,519	0.37	Month	\$ 1,302.03
Patrolman/ Construction Labor	\$ 3,406	0.37	Month	\$ 1,260.22
Patrolman/ Construction Labor	\$ 2,496	0.37	Month	\$ 923.52
Patrolman/ Construction Labor	\$ 2,851	0.37	Month	\$ 1,054.87

Patrolman/ Construction Labor	\$ 2,721	0.31	Month	\$ 843.51
Patrolman/ Construction Labor	\$ 2,453	0.37	Month	\$ 907.61
Patrolman/ Construction Labor	\$ 1,933	0.37	Month	\$ 715.21
Patrolman/ Construction Labor	\$ 1,933	0.37	Month	\$ 715.21
Patrolman/ Construction Labor	\$ 1,933	0.37	Month	\$ 715.21
Patrolman/ Construction Labor	\$ 1,933	0.37	Month	\$ 715.21
Patrolman/ Construction Labor	\$ 2,626	0.18	Month	\$ 472.68
Heavy Equipment Operator	\$ 3,449	1.15	Month	\$ 3,966.35
Heavy Equipment Operator	\$ 2,600	1.37	Month	\$ 3,562.00
Heavy Equipment Operator	\$ 2,964	1.37	Month	\$ 4,060.68
Heavy Equipment Operator	\$ 2,782	1.25	Month	\$ 3,477.50
Fabricator	\$ 3,146	0.28	Month	\$ 880.88
Hydro Tech/ Fabricator	\$ 3,337	0.28	Month	\$ 934.36
Maintenance Support	\$ 2,331	0.37	Month	\$ 862.47
Maintenance Support	\$ 1,933	0.18	Month	\$ 347.94
SCADA Technician	\$ 3,337	0.05	Month	\$ 166.85
SCADA Technician	\$ 2,609	0.05	Month	\$ 130.45
SCADA Technician	\$ 1,889	1.15	Month	\$ 2,172.35
Fringe Benefits				
Full-Time Employees	40%			\$ 17,391.61
Budget Item Description	Computation		Quantity	Total Cost
	\$/unit	Quantity	Type	
Equipment Used				
TANDEM DUMP, 0710-0185	\$ 28.00	24	Hours	\$ 672.00
DUMP TRUCK, 4900, 0710-0191	\$ 15.00	41	Hours	\$ 615.00
EXCAVATOR, 0710-0199	\$ 123.43	82	Hours	\$ 10,121.26
Case Loader Mod CA621DBA, 0710-0210	\$ 60.64	59	Hours	\$ 3,577.76
VOLVO EXCAVATOR EC160CL, 0710-0212	\$ 65.05	22	Hours	\$ 1,431.10
JD BACKHOE 410J, 0710-0214	\$ 36.98	27	Hours	\$ 998.46
CATERPILLAR FORKLIFT MODEL TH560B, 0710-0221	\$ 47.73	24	Hours	\$ 1,145.52
CAT D5GXL DOZER, 0710-232	\$ 45.59	80	Hours	\$ 3,647.20
2006 INTL 4200 WATER TRUCK 2,000 GAL, 0710-0237	\$ 19.58	19	Hours	\$ 372.02
Army Caterpillar Grader, 0710-0240	\$ 78.65	29	Hours	\$ 2,280.85
Used Ride On Roller Compact, 0710-0245	\$ 66.00	3	Hours	\$ 198.00
Freightliner 122SD Dump Truck, 0710-0246	\$ 28.00	39	Hours	\$ 1,092.00
FORD F-750 5 YD DUMP TRUCK, 0710-0249	\$ 15.00	82	Hours	\$ 1,230.00
IT 4 X 2 FORD CREW CAB, 0730-0119	\$ 12.00	16	Hours	\$ 192.00
2001 CHEV SILVERADO PICKUP, 0730-0165	\$ 12.00	6	Hours	\$ 72.00
2007 FORD F-350 4 X 4 1 TON, 0730-0167	\$ 12.00	15	Hours	\$ 180.00

1994 CHEVROLET C3500 1 T DUALY, 0730-0182	\$ 12.00	14	Hours	\$ 168.00
2001 Dodge Ram 1500 1/2 Ton, 0730-0187	\$ 12.00	39	Hours	\$ 468.00
Chevrolet, Silverado 2500, 4x4, 0730-0217	\$ 10.00	8	Hours	\$ 80.00
Chevrolet, Silverado 2500, 4x4, 0730-0217	\$ 10.00	40	Hours	\$ 400.00
Supplies and Materials				
36" Pipe (CMP) & accessories	\$ 57,320.46	1	each	\$ 57,320.46
Concrete Check Box	\$ 10,000.00	2	each	\$ 20,000.00
Concrete Distribution Box	\$ 5,000.00	2	each	\$ 10,000.00
Flow Meter and RTU	\$ 8,964.88	1	each	\$ 8,964.88
Environmental and Regulatory Compliance				
NEPA Documentation Consultant	\$ 5,000.00	1	each	\$ 5,000.00
Total Direct Project Costs				
Salary and Benefits				\$ 60,870.63
Equipment Used				\$ 28,941.17
Equipment/Property Acquisitions				\$ -
Supplies and Materials				\$ 96,285.34
Contractual/Construction				\$ -
Environmental and Regulatory Compliance				\$ 5,000.00
Indirect Costs				\$ -
Total Estimated Project Costs				\$ 191,097.14

2.3. Budget Narrative

Project Manager for this proposed project is Gary Esslinger, EBID's Treasurer/Manager. Leo Barret, Maintenance Projects Director, Zachary Libbin, District Engineer, and Patrick Lopez, SCADA Systems Director, will also serve as essential Assistant Project Managers. Required personnel are listed by title within Table 5 of the Budget Proposal listed above. Many of EBID's maintenance season construction personnel are cross-trained for construction in addition to their water season patrolman duties. Salaries and wages, estimated hours, and rate of compensation are included. EBID certifies that the labor rates included in the budget proposal represent actual labor rates of the identified personnel and are consistently applied to Federal and non-Federal activities.

Fringe benefits for the employees assigned to this project are 40% of wages. This fringe is derived from the actual costs for personnel at EBID. The fringe benefit package includes medical, dental, vision, short and long term disability, life insurance retirement, annual, sick and holiday leave as well as FICA and workers compensation.

A portion of the time shown for EBID's District Engineer, specifically 10 hours, is estimated for compliance and reporting requirements including final performance report.

Heavy equipment and vehicles used to complete this project are owned by EBID. Equipment hourly rates are derived from EBID determined equipment rental rates.

No indirect costs are proposed as part of the project budget and no equipment or property acquisition is required for this project.

The materials and supplies that will be used for this project are required for the project construction to improve delivery and conservation. The costs are determined by quotes received from applicable vendors providing these materials.

No contractual services are required for this proposed project besides potentially NEPA compliance documentation consultant professional services. The budgeted Environmental Compliance costs are estimated for the level of NEPA compliance expected, preferably performed by the BOR, but estimated adequately to include consultant services.

3. Environmental and Cultural Resources Compliance

EBID has extensive experience with all aspects of the project and surrounding areas. The project will not be a detriment to the surrounding environment, but rather an enhancement. Earth disturbing activities include demolition of existing structures and piping the Williams Lateral. Efforts will be taken to reduce effects to air and water quality including water trucks constantly on site and suspending work on wet or windy days. The areas surrounding the Williams Lateral is entirely farmland. The adjacent NMDOT State Highway 28 is owned and maintained by the New Mexico Department of Transportation (NMDOT) and will be avoided with equipment and any necessary signage will be performed by appropriate contractors if this become necessary. Because EBID has access to the Williams Lateral from its tail end at the Mesilla Drain, disturbance to Highway 28 is not anticipated. This ground disturbance will be limited to excavation, installation, and backfill of the pipeline. No detriment to the surrounding environment is expected.

EBID is not aware of any species listed or proposed to be listed as a Federally threatened or endangered species or designated critical habitat within the project area. This understanding was also verified by USFWS information available online.

EBID is not aware of any wetlands or of other surface waters inside the project boundaries that qualify as "Waters of the US."

EBID's water delivery system was constructed as part of the Bureau of Reclamation Rio Grande Project. By piping the 1,194 feet of the Williams Lateral all structures will be replaced and the design will be modified in coordination with the farmers in the area. EBID's delivery system was constructed in the early 1900's. Modification and replacement of a limited portion of the Williams Lateral is required for the system improvements. No structures or canal system modifications will take place other than what is shown of the project limits by Figure 7. Removal and replacement of one canal check structure shown as Figure 4 will be replaced with a concrete check box structure, similar to those shown, in Figures 3 and 5 will be required. An

additional check box and two diversion boxes will replace the existing farm turnout gates. The structures being replaced are not original to the Rio Grande Project and have been replaced at least once but the date of their replacement is not documented in EBID's records.

All of EBID's facilities are designated as a historically significant resource. As a result, EBID routinely works with the State Historical Preservation Officer (SHPO) before any action is taken. The laterals and drains are not sensitive, and EBID is not aware of any specific structures that are assigned historical significance. A search of the Archaeological Records Management Section at New Mexico Historical Preservation Division and a cultural resource survey for the Williams Lateral improvement will be contracted if necessary. Besides the Williams Lateral, and requisite coordination with New Mexico State Historical Preservation Office, no other sites, archaeological or otherwise, buildings or structures are anticipated which would require coordination with the Historical Cultural Property Inventory.

EBID is not aware of any archeological or Native American sacred sites within the project area. This project will not limit access to any sites, sacred or otherwise, and will not have any negative impact on low income or minority populations.

The proposed project will not contribute to the propagation of noxious weeds or non-native invasive species. In fact, the proposed project will eliminate the growth of noxious weeds and non-native invasive species within the project limits.

4. Required Permits and Approvals

All construction work will take place within EBID's facilities, rights-of-way, and jurisdiction. No federal, state, or local permitting is expected for the construction of this proposed project beyond NEPA compliance documentation.

5. Official Resolution

STATE OF NEW MEXICO

ELEPHANT BUTTE IRRIGATION DISTRICT

Resolution No. 2020-02

RE: Resolution Authorizing Grant Agreement with United States Bureau of Reclamation WaterSmart Grant 2020: WaterSMART Small Scale Water Efficiency Project BOR-DO-20-F006

WHEREAS, the Governing Body of the Elephant Butte Irrigation District, State of New Mexico shall enter into a Grant Agreement with the United States Bureau of Reclamation, and,

WHEREAS, the grant opportunity is United States Bureau of Reclamation WaterSmart Grant 2020, WaterSMART Grant Small Scale Water Efficiency Project BOR-DO-20-F006.

NOW, THEREFORE, BE IT HEREBY RESOLVED that the Governing Body of the Elephant Butte Irrigation District, State of New Mexico hereby supports the application and is capable of providing the amount of funding and/or in-kind contributions specified in the grant program at 50% or more of the total project costs as required. The total funding provided by the grant is not to exceed \$75,000.00 and the maximum project total cannot exceed \$200,000.00. Elephant Butte Irrigation District will work with the Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement

RESOLVED: In session this 12th day of February, 2020.

GOVERNING BODY OF ELEPHANT BUTTE IRRIGATION DISTRICT, NEW MEXICO.



Michael McNamee, President

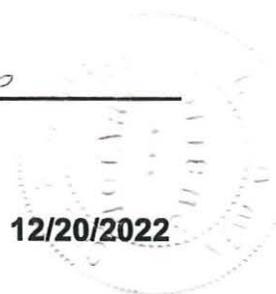


Robert Sloan, Vice President



**Gail E. Norvell
Notary Public**

Commission Expires: 12/20/2022



6. References

Al-Haddad, S., 2005. *Estimating Seepage from Irrigation Canals in the Elephant Butte Irrigation District, New Mexico*. Masters thesis, Civil Engineering, NMSU.

King, J. P. and J. Maitland, 2003. *Water for River Restoration: Potential for Collaboration between Agricultural and Environmental Water Users in the Rio Grande Project Area*. Prepared for the Chihuahuan Desert Program, World Wildlife Fund.

ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009
Expiration Date: 02/28/2022

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE TREASURER/MANAGER
APPLICANT ORGANIZATION ELEHANT BUTTE IRRIGATION DISTRICT	DATE SUBMITTED 2/25/2020