

**WaterSMART Grant Application  
Small-Scale Water Efficiency Project for  
Fiscal Year 2017  
FOA No. BOR-DO-17-F011**

**West Main Canal Piping – Deep Cut**

**TALENT IRRIGATION DISTRICT  
APPLICANT**



**JIM PENDLETON**  
PROJECT MANAGER  
104 West Valley View Road  
PO Box 467  
Talent, Oregon 97540  
541-535-1529  
Fax 541-535-4108  
[tid@talentid.org](mailto:tid@talentid.org)

**Table of Contents**

TECHNICAL PROPOSAL AND EVALUATION CRITERIA..... 3

*EXECUTIVE SUMMARY*..... 3

*BACKGROUND DATA*..... 3

        Project Map ..... 5

*PROJECT DESCRIPTION* ..... 6

*EVALUATION CRITERIA* ..... 6

        Criterion A – Planning Efforts Supporting the Project (35 points) ..... 6

        Criterion B – Project Benefits (35 points) ..... 8

        Criterion C – Project Implementation (15 Points) ..... 9

        Criterion D – Nexus to Reclamation (15 Points) ..... 10

ENVIRONMENTAL AND CULTURAL RESOURCE COMPLIANCE ..... 10

REQUIRED PERMITS OR APPROVALS ..... 12

OFFICIAL RESOLUTION – See Attachment ..... 12

PROJECT BUDGET ..... 12

    Funding Plan ..... 12

        Table 1. Summary of Non-Federal and Federal Funding Sources ..... 12

    Budget Proposal ..... 13

        Table 2. Estimated Project Costs ..... 13

    Budget Narrative ..... 14

        Salaries and Wages ..... 14

        Certification of Labor Rates ..... 14

        Fringe Benefits ..... 14

        Table 3. Fringe Rates ..... 14

        Equipment ..... 15

        Materials and Supplies ..... 15

        Environmental and Regulatory Compliance Costs ..... 15

        Table 4. Total Costs ..... 15

## **TECHNICAL PROPOSAL AND EVALUATION CRITERIA**

### ***EXECUTIVE SUMMARY***

April 6, 2017

The Talent Irrigation District's project area includes land in and around the cities of Medford, Phoenix, Talent and Ashland in Jackson County in southwest Oregon. The District is requesting funding under this opportunity to pipe 1,240' of the West Main Canal, a Reclamation facility, just upstream of where the canal crosses Pioneer Road on the outskirts of Medford, Oregon. In order to maintain canal grade, this section of canal during construction, was dug deep into the hillside, creating high, steep sides, earning its name "The Deep Cut". Because of its deep sides, this section has been very difficult and dangerous to maintain. During irrigation season, when aquatic vegetation gets to a mature stage, the flow of water has a tendency to back up through this section, increasing upstream pressure, which contributes to the already existing problems with leaks and seepage through the canal banks. By piping the Deep Cut through the leak area, the District estimates an annual water savings of 150 acre feet. Construction of the pipeline is estimated to take 6 weeks to complete, and if this proposal is awarded funding, will be completed during this next maintenance season which runs from October 2017 through March 2018.

### ***BACKGROUND DATA***

The Talent Irrigation District is a special district government organized under ORS 545 by order of the Jackson County Commissioners on May 22, 1916. By the late 1920s the District's original system was constructed which served approximately 10,000 acres.

In 1956 the water users of the District voted and approved the signing of a contract with the Bureau of Reclamation for the rehabilitation and enlargement of the system, which became known as the Rogue River Basin Project - Talent Division.

The District has storage in three Reclamation reservoirs: Howard Prairie, Hyatt Prairie and Emigrant. The District's irrigation water supply comes from the flows of the following creeks: South Fork of Little Butte Creek and its tributaries; Grizzly Creek and Keene Creek above Hyatt Prairie and Keene Creek Reservoirs; Emigrant Creek and its tributaries above Emigrant Reservoir; Bear Creek and its tributaries below Emigrant Reservoir; as well as several other tributaries throughout the Federal Project area.

Irrigation water is provided to the District waterusers by an extensive collection, diversion, storage, and conveyance system. The District makes its water deliveries through 120 miles of canals and 113 miles of laterals. Approximately 27 miles of canals and 85 miles of laterals are piped with varying sizes, pressures and materials. In more recent years, the District has installed PVC pipe for sizes of 12" or less and high-density polyethylene pipe (HDPE) for the larger pipe sizes.

The District provides water for commercial and residential irrigation to land included within its boundaries. The District consists of approximately 2,900 waterusers with 3,480 tax lots over 15,500 irrigated acres. The estimated annual usage is 55,000 acre

feet. The major crops are tree fruits, wine grapes, hay and livestock grazing, and lawn and gardens.

During hot weather events and the timing of certain crop harvests, the District struggles to keep water to the end-users of each of its six canals. Even though the design capacity of the canals are adequate to serve the canal acreages, during these hot weather events when the aquatic vegetation is at its peak and demand is at its highest, it is difficult and at times impossible to serve the end-user. Patrons on the tail-end of the canals are hesitant to convert from flood irrigation to more efficient methods due in large part to the unreliability of holding a workable or steady head on their intake systems. In addition, the buildup of the aquatic vegetation during these events chokes the canals and increases seepage losses.

According to the District's Water Management and Conservation Plan (WMCP)<sup>1</sup>, the District operates at a deficit during below-average water years. When snow pack and stream flows are below normal, the District often has to draw from its storage reservoirs earlier than normal; and depending on the starting storage capacity, can create a shortfall for that year, which can also extend into the following year. The District relies heavily on accumulated storage supply to provide a full irrigation season.

The West Main Canal is one of six canals the District uses to deliver water to its patrons. It measures approximately 23 miles long with its headworks located at a diversion from the East Main Canal located on the east side of the Rogue Valley; then by means of the Billings Siphon, crosses to the west side of the valley. Approximately 5 miles of the West Main Canal are piped. It serves approximately 590 patrons on 3,000 irrigated acres. Its main production is wine grapes, hay and livestock grazing. Its terminus is where the canal merges into the Talent Main Canal near the southwest end of the City of Medford.

Since the District's irrigation water is delivered primarily through canals that are open channels that are subject to high seepage losses and periodic canal bank failures, continued monitoring of the delivery system helps to identify areas of concern, and high seepage areas are given higher priority status. After employing the usual methods of sealing off the leaks, those sites where the usual remedies prove to be insufficient, the District turns to more effective measures such as piping or lining the canals with shotcrete material.

Through past Reclamation grant opportunities, the District has been able to pair scarce District dollars with Federal funds to make improvements to the District's system that have resulted in conserving water, controlling soil erosion and increasing efficiency in water delivery. Without continued financial assistance from the Bureau of Reclamation, the District would need to delay the majority of its capital improvement projects to find other funding sources. A list of past projects is available upon request.

---

<sup>1</sup> Talent Irrigation District – Water Management & Conservation Plan – Draft – dated January 5, 2017, currently in the review process with Oregon Water Resources Department

Project Map



**PROJECT DESCRIPTION**

The District proposes to pipe a 1,240’ section of the West Main Canal to address seepage issues that have plagued the area for some time, threatening private property. Further exacerbating the issue is the section known as the “Deep Cut”. This section of canal was constructed through a hill creating steep sides that make it difficult and dangerous to clean and maintain the canal prism. During irrigation season when aquatic vegetation gets to a mature stage, water backs up in this section causing pressure on the canal upstream where the leaks are occurring. Previous attempts to stop the leaks have included coring, slipping and lining the canal with shotcrete material, which proved to be temporary fixes. Piping this entire section will be a more permanent fix and will address the issue causing some of the leaks. The District estimates the annual water savings at 150 acre feet.

The pipe used will be 36” water-tight HDPE pipe. The work will begin where the canal crosses Pioneer Road. A concrete transition structure will be built on the north side of the road to anchor the downstream end of the pipe. The District will then work upstream placing approximately 580’ of pipe before constructing a concrete diversion box for two water deliveries. The pipeline construction will then continue another 600’ before a concrete inflow box will be constructed to take in drainage from upslope properties. Just beyond the box, a culvert under a private road crossing will be replaced with 60’ of pipe. Rip rap will be used as the transition at the end of the pipe on the upstream side.

The pipeline will be constructed within the existing easements. On-site material will be used as backfill and the existing rip rap at the culvert crossing will be used on the upstream transition.

**MILESTONE SCHEDULE**

DESCRIPTION	2017/2018						
	OCT	NOV	DEC	JAN	FEB	MAR	APR/SEPT
Mobilization							
Pipe installation & Box Construction							
Demobilization & Site Cleanup							

**EVALUATION CRITERIA**

**Criterion A – Planning Efforts Supporting the Project (35 points)**

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

- *Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?*
  - As stated in the District’s WMCP “General goals include development and implementation of conservation projects according to criteria that account for the financial capacity of the TID, time, operational risk priorities, and environmental and regulatory consideration. Project objectives include:

1. Improvements to water distribution system;
2. Improvements in water measurement, management and control;
3. Reductions in seepage losses;
4. Reductions in operations and maintenance costs; and
5. Improvements in water delivery accountability; and
6. Reduce liabilities to the TID.”

Included in the District’s short and long term goals is the conservation of water through canal piping or lining projects. This piping project meets all six objectives and helps to fulfill the District’s goals as outlined in the WMCP.

- While this 1,240’ section of the West Main Canal did not have a targeted seepage monitoring test performed as part of the District’s System Optimization Review (SOR)<sup>2</sup>, it is located within the middle reach of the West Main Canal and positioned between two seepage monitoring sites measured in the SOR.

This canal reach has the same general characteristics as the other two measured sites, (i.e. canal slope, geology, soil type, etc.); and when emergent aquatic vegetation, such as cattails, and submergent aquatic vegetation, such as coontail and pondweed, gets to a mature stage, seepage loss is visible downslope of the canal embankment.

- The Water for Irrigation Streams and Economy (WISE) Project<sup>3</sup> was formed to “address irrigation availability and reliability issues, municipal summer source water quality, and degraded water quantity and quality for native anadromous salmonids. Elements include replacing open canals with closed pipe system, ...”<sup>4</sup>

This piping project, although small in comparison to the overall plan of the WISE Project, furthers the goal to improve irrigation availability and reliability through water conservation, increased irrigation efficiency and reduced disruption in service.

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

This project has been determined a priority because:

- It is consistent with the District’s short and long term goals and objectives.

---

<sup>2</sup> System Optimization Review Talent Division, Rogue River Basin Project, Jackson County, Oregon dated September 21, 2010.

<sup>3</sup> WISE is supported by 19 stakeholders who represent a wide range of stakeholders including agricultural, environmental, municipal and agency interests.

<sup>4</sup> [www.wiseproject.org](http://www.wiseproject.org) What is WISE? FAQ Sheet

- It is not so large a project that it is not outside the District's financial capacity to accomplish as long as matching funds can be obtained through grant opportunities, and the District can match with in-kind services.
- It can be accomplished with District personnel and can be completed during one maintenance season.
- It conserves water, estimated at 150 acre feet annually.
- It reduces the risk to the District by addressing two issues: the potential for damage to downslope property from canal seepage; and the risk to District personnel in the operation and maintenance of the canal through the Deep Cut.

**Criterion B – Project Benefits (35 points)**

- The benefits to the water supply delivery system are:
  - Prevents the loss of water through the 1,240' section of canal by eliminating seepage and evaporation and reducing the potential for leaks.
  - Conserves an estimated 150 acre feet of water annually.
  - Increases the availability of an estimated 150 acre feet of water annually that can be held in the reservoirs, increasing supply reliability.
  - Reduces the effect of burrowing rodent activity along the canal bank creating the possibility of a canal failure.
  - Increases flow efficiency through the reduction of head loss.
  - Reduces the influence of aquatic weeds that limit the flow of water to less than the design capacity.
  - Provides a more reliable service to patrons downstream of the project.
  - Improves irrigation delivery efficiency and reliability by eliminating external influences.
  
- Other benefits include the following:
  - Water conservation projects such as this allow the District to manage the water more efficiently, assists the District in supplying a more reliable supply of water especially to the end-user, and has the potential of improving carry-over storage in the reservoirs for future needs, creating a more reliable water supply system.
  - The District is a Designated Management Agency of the Bear Creek Watershed TMDL<sup>5</sup> Implementation Program. The District Manager and/or the Assistant Manager attend quarterly meetings, and the District reports annually on the water conservation projects it implements during the year along with any water quality issues it has discovered. This project, once completed, will be included in the annual report.
  - Small projects such as this may not have a significant impact by themselves; however, when combined with other similar basin projects, can make a noticeable impact over time. With limited resources, it is imperative that entities, such as ours, work together to accomplish common goals and objectives. The District benefits by working with

---

<sup>5</sup> Total Maximum Daily Load

such programs as DEQ’s TMDL Implementation Program, the WISE Project and collaborating with the other two irrigation districts in the valley.

- This project will benefit agriculture on a small scale by:
  - reducing damage to the downslope property by eliminating seepage from the canal;
  - reducing on-farm costs to the property owners downslope of the project area by preventing leaks from the canal that have saturated portions of their property.
- This project will benefit recreation on a small scale by potentially increasing the storage in the reservoirs which are used by boaters, campers, and fishing interests.
- Additional benefits of this project include:
  - reducing operation and maintenance time and expense by enclosing a 1,240’ section of canal, eliminating the need for regular maintenance during the off season and mowing operations during the irrigation season.
  - eliminating the danger to District employees performing regular maintenance with the excavator through the Deep Cut.

**Criterion C – Project Implementation (15 Points)**

Should this project receive funding under this grant opportunity, the District will schedule the pipeline construction during the 2017/2018 maintenance season which begins after irrigation season, generally from October through March. The District anticipates this project lasting six weeks, barring any unforeseen circumstances.

The project should commence as follows:

<b>DAY</b>	<b>DESCRIPTION</b>	<b>LABORERS</b>	<b>EQUIPMENT</b>
<b>1</b>	Mobilization: Haul Equipment & Material	4	Equip Hauler & Trailer; Passenger Truck & Trailer
<b>2-4</b>	Haul Material	2	Passenger Truck & Trailer
	Construct Box @ Pioneer Road	2	Excavator; Cement Truck & Mixer
<b>5-12</b>	Lay 580’ of Pipe & Backfill	4	2 Excavators & Dozer
<b>13-15</b>	Construct Delivery Box 4’x6’x5’	2	1 Excavator; Dozer; Cement Truck & Mixer
<b>16-21</b>	Lay 600’ of Pipe & Backfill	4	2 Excavators & Dozer
<b>22-24</b>	Construct Inflow Box 4’x5’x4’ & Replace Inflow Pipe	4	Excavator; Dozer; Cement Truck & Mixer
<b>25-27</b>	Road Crossing & Place Rip Rap	4	2 Excavators; Dozer
<b>28-30</b>	Demobilize & Site Cleanup	4	Dozer; Equipment Hauler & Trailer

The project will be performed within the Bureau of Reclamation easements and will use on-site fill material, which has been reserved under a Quitclaim Deed filed under the Official Records of Jackson County, Oregon as Document #91-24234.

No permits are required for this project. The work will be performed by District personnel, and the pipe set within the existing canal prism. No new policies or administrative actions are required to implement this project.

**Criterion D – Nexus to Reclamation (15 Points)**

*How is the proposed project connected to a Reclamation project or activity? Will the project help Reclamation meet trust responsibilities to any tribe(s)? Does the applicant receive Reclamation project water? Is this project on Reclamation project lands or involving Reclamation facilities? Is the project in the same basin as a Reclamation project activity? Will the proposed work contribute water to a basin where a Reclamation project is located?*

The District was formed in 1916 and by the late 1920s its original system was constructed which provided irrigation to approximately 10,000 acres. In 1956 the water users of the District voted and approved the signing of a contract with the Bureau of Reclamation for the rehabilitation and enlargement of the system, which became known as the Rogue River Basin Project - Talent Division. The enlargement provides irrigation to approximately 15,500 acres. As a result, the District in 1960 quitclaimed the system to the Bureau of Reclamation recorded in Vol. 495 Page 375 of the Official Records of Jackson County, Oregon.

This project will not assist Reclamation to meet any trust responsibilities to any tribe.

**ENVIRONMENTAL AND CULTURAL RESOURCE COMPLIANCE**

- *Will the proposed project impact the surrounding environment (i.e. soil [dust], air, water [quality and quantity], animal habitat, etc.)?*

There should be very little impact to the surrounding environment. This project will occur in the canal prism during the time of year when no water will be in the canal. Activities will occur during the fall and winter months where dust should not be a problem. We will backfill with on-site material and provide a smooth transition between the uphill slope and the canal road.

- *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?*

We are not 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.

## ***WaterSMART Small-Scale Funding Opportunity Number BOR-DO-17-F011***

- *Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?”*

There are no known wetlands within the project boundaries. This project will occur during the off-season, and the canal will be de-watered.

- *When was the water delivery system constructed?*

Originally the West Main Canal was constructed in the early 1920s, and enlarged by Reclamation in the late 1950s or early 1960s. Regular canal cleaning occurs prior to each irrigation season and mowing operations during irrigation season.

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

The District will add to the existing concrete structure near Pioneer Road to anchor the pipe by attaching a concrete box. The original structure was constructed by Reclamation in the late 1950s or early 1960s.

Two existing turnouts on the proposed piping project; a concrete pump box approximately 15 to 20 years old, and a gravity flow gate sleeved with a piece of HDPE pipe installed about 3 years ago, will be replaced by one concrete structure.

The existing shotcrete liner, 15 to 20 years old, will be removed.

The corrugated metal pipe used to carry upslope water into the canal will be sleeved with 15” HDPE pipe.

A road crossing of corrugated metal pipe will be replaced with HDPE pipe.

- *Are any buildings, structures, or features in the project areas that are listed or eligible for listing on the National Register of Historic Places?*

SHPO may consider the West Main Canal as being eligible for listing.

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

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

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

This project will have no effect on low income or minority populations.

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

This project will not impact access to and ceremonial use of Indian sacred sites or result in other impacts on 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?*

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

## **REQUIRED PERMITS OR APPROVALS**

No permits are required for this project, which will be performed within Reclamation easements, recorded in the Official Records of Jackson County, Oregon as Volume 501, Page 65 and Volume 502, Page 105; and in the U.S. District Court for the District of Oregon as Civil No. 60-406 for the Judgement on the Declaration of Taxing and Order of Immediate Possession.

On-site fill material will be used as backfill which has been reserved under a Quitclaim Deed filed under the Official Records of Jackson County, Oregon as Document #91-24234.

## **OFFICIAL RESOLUTION – See Attachment**

## **PROJECT BUDGET**

### **Funding Plan**

The estimated cost of this project total \$107,953.78 of which the District is requesting 50% cost-share funding under this grant opportunity of \$53,976.89. The District has not requested funds from any other source and there are no other partners for this project.

The District will provide at least 50% of the estimated project costs through in-kind and monetary contributions derived from the District’s general operating funds. The District does not anticipate any pre-award costs and has not included any in the proposed budget.

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

<b>FUNDING SOURCES</b>	<b>AMOUNT</b>
Non Federal Entities	
1. Talent Irrigation District	\$53,976.89
<b>REQUESTED RECLAMATION FUNDING</b>	<b>\$53,976.89</b>

**Equipment**

The District will use its own equipment on this proposed project. The usage rates have been calculated using the United States Army Corps of Engineers Construction Equipment Ownership and Operating Expenses Schedule and the Standard Mileage rate published by the United States Treasury, Internal Revenue Service.

**Materials and Supplies**

All materials and supplies listed in the budget proposal are for construction purposes. Quotes were obtained for the pipe. The cost for the remaining items was determined using actual purchase costs for these items the District purchases on a regular basis.

**Environmental and Regulatory Compliance Costs**

The District has contacted the Bureau of Reclamation for cost estimates relating to environmental and cultural resources compliance. The estimates provided included a “worst case scenario” and the possibility for mitigation. The estimates are as follows and are included in the budget proposal:

- Elizabeth Heather, Environmental Protection Specialist: \$5,000
- Chris Horting-Jones, Archeologist: \$10,000

**Table 4. Total Costs**

<b>TOTAL</b>	<b>IN-KIND</b>	<b>MONETARY</b>	<b>TOTAL</b>	<b>PERC.</b>
NON-FEDERAL:TID	\$39,019.34	\$14,957.55	\$53,976.89	50%
FEDERAL: Reclamation	\$15,000.00	\$38,976.89	\$53,976.89	50%

**OFFICIAL RESOLUTION NO. 2017-4  
OF THE BOARD OF DIRECTORS OF  
TALENT IRRIGATION DISTRICT**

WHEREAS, the Bureau of Reclamation requests an official resolution to commit applicants of WaterSMART Grants: Small-Scale Water Efficiency Projects for Fiscal Year 2017 as Funding Opportunity Agreement (FOA) No. BOR-DO-17-F011 to the financial and legal obligations associated with receipt of WaterSMART grant financial assistance,

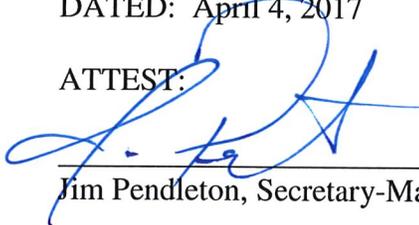
WHEREAS, the District desires to obtain grant funding from the Bureau of Reclamation through this FOA;

NOW THEREFORE, BE IT RESOLVED that the Board of Directors of the Talent Irrigation District agrees and authorizes that:

1. Jim Pendleton, the Secretary/Manager of the Talent Irrigation District, has the legal authority to enter into an agreement should funding be awarded under this application;
2. The application for the piping project known as the **West Main Canal Piping - Deep Cut** through the WaterSMART Grants: Small-Scale Water Efficiency Projects for Fiscal Year 2017 as FOA No. BOR-DO-17-F011 prepared by the Talent Irrigation District has been reviewed by the Board of Directors and they support the contents therein;
3. The Talent Irrigation District will provide funding of at least 50% of this project whose proposed budget is \$107,953.78, with in-kind contributions estimated at \$39,019.34 and a monetary contribution estimated at \$14,957.55, for a proposed total of \$53,976.89 as match;
4. If awarded a grant through the WaterSMART Grants: Small-Scale Water Efficiency Projects for Fiscal Year 2017 FOA No. BOR-DO-17-F011, the District will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

DATED: April 4, 2017

ATTEST:

  
\_\_\_\_\_  
Jim Pendleton, Secretary-Manager

  
\_\_\_\_\_  
Bob Morris, President

  
\_\_\_\_\_  
Jeff Bohn, Vice-President

  
\_\_\_\_\_  
Mike Winters, Director  
Constituting the Board of Directors of  
Talent Irrigation District