WATERSMART SMALL-SCALE
WATER EFFICIENCY PROJECT
GRANT PROGRAM FOR FY 2017
Funding Opportunity Announcement No. BOR-DO-17-F011

RIPPEE ROAD EAST AND WEST PIPELINE PROJECT

A construction project to enclose open concrete-lined laterals in the west end of the federal irrigation project (Boardman), to convert irrigation methods from flood to sprinkler delivery and to provide pressurized, metered deliveries to the Boardman area patrons of the West Extension Irrigation District.

WEST EXTENSION IRRIGATION DISTRICT
UMATILLA PROJECT
UMATILLA & MORROW COUNTY, OREGON

APRIL 15, 2017

Applicant/Project Manager
Bev Bridgewater, District Manager
WEST EXTENSION IRRIGATION DISTRICT
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Executive Summary

WaterSMART – Small Scale Water Efficiency Grant Application

ES.1
Date: April 15, 2017
Applicant Name: West Extension Irrigation District
City, County, State: Irrigon, Morrow, Oregon

ES.2
Project Name: Rippee Road East and West Pipeline Project

ES.3
Project Summary:
The Project will install 4600 feet of pipe, replacing 3000 feet of concrete-lined canal, and eliminating 4100 feet of concrete canal by adding 1600-feet of pipe to an existing pipeline along Rippee Road. 270 acres of land are in the project area. Flood irrigation will be eliminated and all irrigators will be metered. The project meet the goals set by the District's Water Management and Conservation Plan.

ES.4
Project Completion: The Project will begin September 1, 2017 and be completed by December 30, 2018.

ES.5
Federal Facility: The Project is part of the West End of the Umatilla Project authorized in 1905. West Extension Irrigation District operates the federally-owned project under its 1926 and 1954 federal contracts.

ES.6 The required Official Resolution has been approved by the Applicant's governing body and a copy has been included as a part of the proposal.
Yes X

ES.7 Contact for further information:

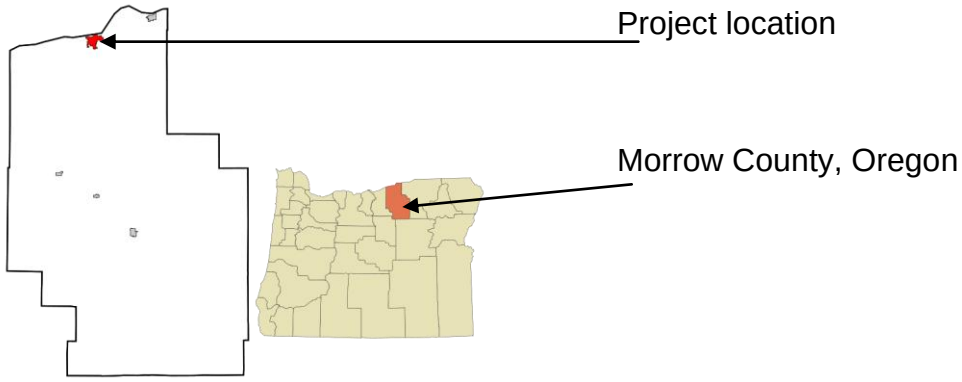
Bev Bridgewater
District Manager
541-922-3814 (telephone)
541-922-9775 (fax)
bbridge@oregontrail.net

BACKGROUND DATA

B.1 Describe the geographic location.

The WEID is located in NE Oregon and covers portions of Umatilla and Morrow counties. Included in the service area are the cities of Umatilla, Irrigon and Boardman. The 9,235 acres extend from the confluence of the Umatilla and Columbia Rivers, westward for 27 miles, to form a long, narrow irrigated band lying south of the Columbia River. It is 160 miles east of Portland, Oregon and 220 miles west of Boise, Idaho.

B.2 MAP



B.3 Provide the source of water supply, describe the water rights involved, current water uses, the number of water users served, and the current and projected water demand.

Primary Source: Umatilla River
Supplement Source: Columbia River
Return flows from McKay Reservoir
Water Use: Irrigation
Irrigators: 661
Acres Served: 9234.80

Current Water Avg. Water Demand: 37,500 Ac-ft
Projected Water Demand: 36,000 Ac-ft

A portion of the saved water from the Project will be used to make up the shortfall in maximum demand vs. maximum delivery. The rest will be left in the Columbia River since it will not be pumped as supplemental water supply to meet the daily irrigator's demand.

Table 1. Water Right Certificates

Certificate	Permit	Priority Year	Source	Acres	Prim (P) Supp (S)	Max flow cfs	Duty Ac-ft/Ac
79924	Decree	1893	Umatilla R	1369.9	P	34.24	6
19925	Decree	1906	Umatilla R	347.1	P	8.64	6
79926	408	1909	Umatilla R	4121.7	P	295.67	10
79927	27941	1962	Umatilla R	20.0	P	.50	4.5
79928	33883	1968	Umatilla R	3248.1	P	81.20	4.5
79929	33883	1969	Umatilla R	128.0	P	3.20	4.5
79930	33883	1968	Columbia R	8516.6	S	90.0	4.5
87872	7400	1928	Return Flow McKay Res	5838.7	S	87.0	

Water is diverted from the Umatilla River at Three Mile Falls Dam into the 27-mile long West Extension Main Canal. As natural and return flows in the Umatilla River decrease, the District turns on its Columbia River pumps for supplemental water. Note that water can also be purchased from the Bureau of Reclamation's pumps as part of the 1988 Umatilla Basin Act where water is left in the river for fisheries benefit. All water exchanged or purchased in bucket for bucket to replace a primary or supplemental source.

B.4 Identify potential shortfalls in the water supply.

Table 2. Summary of Crop Demand Vs Available Water (based on 15-year records)

	Current Demand based on crop needs	Current Available/All sources
Avg. Max Monthly (Ac-ft)	10,091	7,350
Avg. Max Delivery Rate (cfs)	164.0	135.0
Avg. Annual (Ac-ft)	37,582	37,100
Peak Monthly (Ac-ft)	11,495	7,500
Peak Delivery Rate (cfs)	187.0	147.0
Peak Annual (Ac-ft)	41,683	39,500

The District cannot meet the demands of its irrigator during the heat of summer. Irrigators are on rotation. The District has 20% loss due to the needs of its open delivery system.

B.5 List type of use of water, describe major crops and total acres served.

All water is used for irrigation.

Table 3. Crops grown in the WEID.

Crop	Acres	Percentage
Pasture	3,142.40	34.0%
Alfalfa / Hay	2,100.40	22.7%
Corn	1,777.30	19.2%
Potato	648.40	3.8%
Onion	333.10	3.6%
Beans / Peas	117.70	1.3%
Mint	80.70	.9%
Spring Grain	171.60	1.9%
Apple / Peach	43.90	.5%
Melons / Berries	180.00	1.9%
allow	108.30	1.2%
Lawn / Non-Ag	831.00	9.0%
TOTAL	9,234.80	100%

B.6 Describe the applicant's water supply system. For agricultural systems, please include the miles of canals, miles of laterals, existing irrigation improvements (i.e. type, miles, and acres).

Water is diverted at Three Mile Falls Dam which is located about three miles upstream from the mouth of the Umatilla River. Water is then gravity-fed into the District's main feature – it's 27-mile long concrete-lined canal. There are sixteen booster stations along the canal and over 120 deliveries off the main canal. Many deliveries are piped and gravity-fed. They total 85 miles. There are 18 1-2 mile-long open ditch laterals that deliver water to over 1/3 of the district's land in the Boardman area.

Diversion facilities also include two pump stations, one of which is federally owned and operated, which pump water from the Columbia River. These provide supplemental water to the District's canal.

Table 4. Types of On-Farm Irrigation Systems

Irrigation Type	Acres	%
Drip	338.8	3.6
Flood	2217.7	24.0
Set Sprinkler	3015.6	32.7
Center Pivot Sprinkler	3662.7	39.7
TOTAL	9234.8	

The Boardman area accounts for 4,548 acres (49% of District) and has 35% of the District landowners. 46% of the Boardman Project area is flood-irrigated. The final 9 miles of the main canal deliver water to the 28 laterals of the Boardman area. These laterals are a combination of both private and District pressurized pipes, gravity pipes, and open channels. Economic activities over the past decade have seen a large increase in land development in Boardman. Five of the 20 to 40 acre parcels that existed then have been converted to two-acres parcels and more is expected. .

Table 5. Conservation Projects Completed Years 2000 – 2016 Main Canal / Laterals

Service Area Description	Comments	Pipe Details (Feet)	Project cost	Annual Water Savings	Year Completed
Sunrise Hamilton, Donovan McGraw (210 Ac) Bonner	Development converted land from flood to sprinkler		Unknown – Developer cost	570 AF	2001 - 11
Philippi (570 Ac)	Convert from flood to sprinkler irrigation		Unknown – Landowner cost	2100 AF	2001
Main Canal	Data Loggers, weirs in laterals, automated gates and SCADA		$222,386	Water Accounting	2001-02
Main Canal	Automated gates and SCADA		$577,525	Water Accounting	2003-06
County Line Project (35 Ac)	Replace concrete line/ Convert from flood to sprinkler	1800 ft. 6”	$4,500 Landowner grant	120 A.F.	2005
Main Canal (4373 Ac)	Landowner Meters	132 meters		500 AF	2004 - 06
Depot Lane	Replace open lateral system	3800 ft. 6”-12”	$97,000	150 AF	2004
Cleaver (432 Ac)	Convert from flood to sprinkler	4200 ft. 8”	Unknown Landowner cost	1080 AF	2008 - 2010
RL 1 & RL4	Replace old and install valves/meters	1920 ft. 8” & 12”	$54,700	25 AF	2009
RL 2	Replace open lateral/install VFD booster station.	2820 ft, 4” – 10”	$98,000	200 AF	2010
Lateral 79 (40 AC)	Convert from flood to sprinkler	2200 ft 8 “	$7500 pipe Landowner installed	200 AF	2013
Lateral 78 (68 AC)	Convert from flood to sprinkler	1,500 ft 8”	$6,500 pipe Landowner installed	170 AF	2014
Irrigon/Boardman	Installed VFDs on existing pump stations & add irrigators to existing pump station for efficiency		Varies $6500 - $8,000	60 AF	2013-2014
Lateral 7 Piping/Boardman	Pipe open lateral	4640 ft 10 – 21”	$191,167 total project cost	410 AF	2016

ES.7 Briefly, identify any past working relationships with the Bureau of Reclamation including any previous grants. Include the dates, relationship and the projects.

West Extension Irrigation District (WEID) is a federal project, authorized in 1905 and built in 1914-1916. The WEID has a 1926 O&M contract and there is a 1954 repayment contract with final payment due in 2118.

Water Conservation Field Services Grant (R16AJP00068): Lateral 11 piping project - 3700 feet of open ditch and eliminate flood irrigation. Grant dates are August 2016 to December 30, 2017. Grant amount is $25,000 of the $98,000 project. Work is 25% complete.

Water Conservation Field Services Grant (R15AP00059). Rippee Road Lateral 7 piping project - 4620 feet of open ditch and eliminate flood irrigation. Grant was completed August 1, 2016. Project cost $198,000 with federal grant of $25,000. 410 acre-feet of water was saved under this project.

Water Conservation Field Services Grant. Purpose of the Grant is to convert the district's water rights management system to GIS. The grant was effective September 10, 2008 and completed December 31, 2011. Amount of grant was $12,915.

Water 2025 Grant System Optimization Review. Purpose of the Grant is to conduct a system optimization review and to prepare a water management and conservation plan for West Extension Irrigation District. The grant was effective September 10, 2008 and completed December 31, 2011. Amount of grant was $22,000.

Multi-Year grant funded under the Fish and Wildlife Coordination Act for Water Conservation Implementation Assistance. This grant became effective May 1, and was completed December 31, 2006. The District installed three Langeman automated gates, added three stations to its SCADA system, rebuilt two ramp weirs, installed nine data loggers, installed a fish barrier system on its drain, and installed 200 landowner water meters under this grant. The Grant was for Canal Control, Measuring and Metering. The total grant amount was $245,000.

Prior to that, in 1999-2001, the District had two grants from Reclamation. One was for preparation of the District's water conservation plan in the amount of $12,000. The second was for purchase and installation of a SCADA system with five stations and an automated gate at the District's end spill near Boardman. Total amount of this grant was $85,000.

WEID is a partner with Reclamation, the local fish agencies, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and Bonneville Power Administration (BPA) for Phase I of the 1988 Umatilla Basin Act. Water is pumped from the Columbia River to the WEID main canal by Reclamation (pumping cost paid by BPA). WEID leaves a like amount of water in the Umatilla River to benefit the fisheries. This is a bucket for bucket irrigation water exchange that exchanges 16,000 – 20,000 acre-feet of water annually for the benefit of the fisheries resource. The CTUIR and local fisheries agencies manage the fish water for the exchange program.

PROJECT DESCRIPTION

West Extension Irrigation District currently has a mixture of flood and pressurized irrigation service to its customers. The main canal has 124 turnouts that feed ditches or pipes that convey the water. The water is applied to the crops via pressure systems (pivot, handlines, sprinklers), or by flood irrigation.

As stated earlier, 46% of the water delivery in the District is in the Boardman area. The 18 open laterals are concrete-lined, but in poor condition. Two open laterals have been or are being piped, leaving 16 open ditches left to convert to an enclosed delivery system. This project will convert or eliminate two of those ditches, affecting 270 acres of irrigated land.

Water conservation occurs by eliminating the seepage, evaporation, and operational losses associated with the open-ditch laterals. Water savings also come from conversion of flood irrigation to pressurized irrigation. The District has seen a savings of about 2.5 Ac-ft of water per acre saved from on-farm irrigation as farms are converted from flood irrigation to a pressurized system.

The result of this project will be efficient delivery and 202 acre-feet of water saved.

EVALUATION CRITERIA

E.1.1. Evaluation Criterion A—Planning Efforts Supporting the Project (35 points) Describe how your project is supported by an existing planning effort.

There are two planning efforts used in support of this criteria:

1) WEID Boardman Master Plan (BMP) The WEID developed its BMP in 2004. Its purpose is to analyze each of the irrigation laterals that comprise the Boardman area and make recommendations for improvements. The recommendations were based on conservation opportunities, zoning classifications, irrigation demand calculations, modeling, engineering judgment, and discussions with landowners. The BMP allows the District to plan for growth in the Boardman area and to prioritize District activities and conservation efforts.

2) Water Management and Conservation Plan (WMCP). The WEID completed its WMCP in December 2011, with federal funding assistance. It not only meets the requirements of the State of Oregon and Bureau of Reclamation for such a document, but is the planning document and resource for the District activities. The WMCP consists of five main elements or Chapters:

   Water Supplier Description, Water Conservation Element, Water Curtailment Element, Water Supply Element, System Optimization Review

•Does the proposed project implement a goal or address a need or problem identified in the existing planning effort? Yes, the project meets the goals of the BMP and supports the conservation activities prioritized in the WMCP.

•Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures. The proposed project is in the area of the highest water loss, as recognized in the WMCP. Water loss is due to tailwater caused by pumpers in an open ditch system and seepage due to the open ditch system.

E.1.2. Evaluation Criterion B—Project Benefits (35 points)

•Describe the expected benefits and outcomes of implementing the proposed project.
202 acre-feet of water conserved.

oWhat are the benefits to the applicant's water supply delivery system?
Table 1 – Existing Water Loss – 5 days per week

Length existing laterals	Operational Loss Ac-ft / Day	Seepage Loss Ac-ft / Day	Evaporation Ac-ft / Day	Total Water Loss per season Ac-Ft
7100 feet	1.25	0.55	0.23	162

Water will be saved from conversion of 16.0 acres of land from flood to sprinkler. 2.5 acre-feet for each acre will be saved for 40 acre-feet.

oIf other benefits are expected explain those as well. Consider the following:

Extent to which the proposed project improves overall water supply reliability.
Currently, the District cannot meet its demand and relies on supplemental pumping from the Columbia River and rotation scheduling. Adding 202 af of water to the project increases project reliability. The grant will improve the reliability and consistency of the water supply, especially during drought years. Thus, the District will decrease the possibility of crop loss due to drought.

The expected scope of positive impact from the proposed project.
WEID has some senior water rights in the Umatilla Basin and places a call on the river annually. As it shores up its water supply, the effect on junior water users will decrease.

Extent to which the proposed project will increase collaboration and information sharing among water managers in the region.
The regional managers meet monthly to share reports and do work collaboratively. We are all working to conserve our own water in order to alleviate the potential impact of the CTUIR water right settlement. This settlement is in discussion phase.

Any anticipated positive impacts/benefits to local sectors and economies.
Having sufficient water supply and eliminating the impacts of flood irrigation to the water table in Boardman (high water table area) will positively impact the landowners in the region.

E.1.3. Evaluation Criterion C—Project Implementation (15 points)

•Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

Project Schedule

Task	Sept 2017 – Dec 2017	Jan – March 2018	April – Sept 2018	Sept – Dec 2018
Secure permits Environmental compliance	XXXX	XXXX		
Meet landowners to discuss project and metering of their deliveries	XXXX	XXXX		
Complete engineering design		XXXX		
Order pipe and materials	XXXX		XXXX	
Receive materials	XXXX		XXXX	
Site Preparation				XXXX
Do canal work				XXXX
Install pipe		XXXX		XXXX
Complete hookups		XXXX		XXXX
Cleanup				XXXX

•Describe any permits that will be required, along with the process for obtaining such permits. A road crossing permit from Morrow County will be required. There is no cost and no waiting period for the permits.

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

The design is complete for the east end of the project. Our engineers will complete a final design 60 days before we start the west end project. This design will show the work to be done by the District crews and the materials needed for the project, including individual delivery sizes.

•Describe any new policies or administrative actions required to implement the project. None.

E.1.4. Evaluation Criterion D—Nexus to Reclamation (15 points)

•How is the proposed project connected to a Reclamation project or activity? WEID is a federally owned irrigation project.

•Will the project help Reclamation meet trust responsibilities to any tribe(s)? The District is a participant in CTUIR water settlement meetings. Water left in the Umatilla and Columbia

Rivers due to decreased demand by District patrons will benefit the 1988 Umatilla Basin Act for fisheries..

•Does the applicant receive Reclamation project water? Yes, under the 1988 Umatilla Exchange Act.

•Is the project on Reclamation project lands or involving Reclamation facilities? Yes.

•Is the project in the same basin as a Reclamation project or activity? Yes.

•Will the proposed work contribute water to a basin where a Reclamation project is located? Yes.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

The District will hire a consultant to prepare a cultural resources inventory for the project. It will be submitted to Reclamation for Section 106 consultation.

The project is a construction project. All appropriate precautions will be taken to assure there is a minimal amount of impact to surrounding area. Water and air quality degradation will not occur during this project. There are no species listed or proposed to be listed as a federal threatened or endangered speciies nor is there designated critical habitat in the project area. There are no wetlands in the project area.

The water delivery system was constructed in 1915 – 1916.

There is no impact to existing facilities on the east side of the project as all construction will be done on private property. We anticipate the original lateral 5 will be left in place as a historic ditch. The original headgate at Lateral 9 will be saved as well with the new structure being built slightly downstream. The Lateral 9 concrete ditch will be removed and replaced with pipe.

There are no known archeological sites. The project will not have a disproportionately high or adverse impact on low income or minority population. There will be no impact on tribal lands as none are identified in the area. The project will not contribute to the introduction, continued existence or spread of noxious weeds in the area.

The District will work with Reclamation to meet established deadlines for entering into a grant agreement.

OFFICIAL RESOLUTION

WEST EXTENSION IRRIGATION DISTRICT
RESOLUTION NO. 17-007
WATERSMART: SMALL SCALE WATER EFFICIENCY PROJECTS FOR FISCAL YEAR 2017
FUNDING OPPORTUNITY NO. BOR--DO- 17-F011

WHEREAS, the Board of Directors (BOD) of the West Extension Irrigation District (WEID) has an approved Water Management and Conservation Plan (WCMP) and a Boardman Master Plan, and

WHEREAS, the Board of Directors (BOD) wants to implement the WCMP and make improvements to its Boardman delivery system, and

WHEREAS, the BOD has decided that it is in the best interest of the WEID, now

THEREFORE BE IT RESOLVED that the BOD of the WEID authorizes an application to the Bureau of Reclamation WaterSMART program for the amount up to $75,000 for piping open laterals in Boardman. The application will be prepared by the WEID Manager with assistance from J-U-B Engineers and the Manager is authorized to sign the application on behalf of the WEID. The Board commits the match of $75,000 in funding and in-kind specified in the funding plan. The WEID will work with Reclamation to meet established deadlines for entering into a cooperative agreement and authorizes its Manager to sign such agreements on behalf of the WEID.

ADOPTED BY THE BOARD OF DIRECTORS OF THE WEST EXTENSION IRRGATION DISTRICT THIS 18th DAY OF APRIL, 2017.

Dalarie Philippi
Dalarie Philippi, Chairman

Vern Frederickson, Vice Chairman

Absent
Robert Mueller, Director

Warren Kemper, Director

Abe McNamee
Abe McNamee, Director

Pick-ups for crew and supplies – Will charge for use of the 1 ton pickup, not any others.
1 ton 4X4 $10.55 per hour plus $4.48 fuel = Billing rate of $15.03 per hour

Materials and Supplies – Supplies and materials will be billed at cost.

Travel – No travel will be billed for this job.

Sub-Contractor: The district will use its engineering firm – J-U-B Engineers in Kennewick, WA. They have been selected in a competitive bid basis to represent the District. Preliminary work on the project is complete. We estimate 40 hours for final drawings and review at $200/hour.

Environmental and Regulatory Compliance Costs – Based on recent work done, cost estimate is $16,000.

Electrical work: An electrician will be needed to install the electricity for the automated screen that will be purchased and installed by the District.

Indirect Costs – No indirect costs have been included.

Other Costs – None.

Contingency Costs – None. The District budget will cover any contingencies.

TOTAL COSTS

Description	Percentage	Total
District Funds		
Budgeted funds	30.0%	$ 44,598
In-kind	22.8%	$ 33,898
Reclamation Funds	47.2%	$ 70,000
TOTAL PROJECT	100%	$148,496