

**WaterSMART Grant Application
Small-Scale Efficiency Projects**

NOFO No. R21AS00300

**East Main Canal
Chamberland Shotcrete Project**

**TALENT IRRIGATION DISTRICT
APPLICANT**



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TECHNICAL PROPOSAL AND EVALUATION CRITERIA

EXECUTIVE SUMMARY

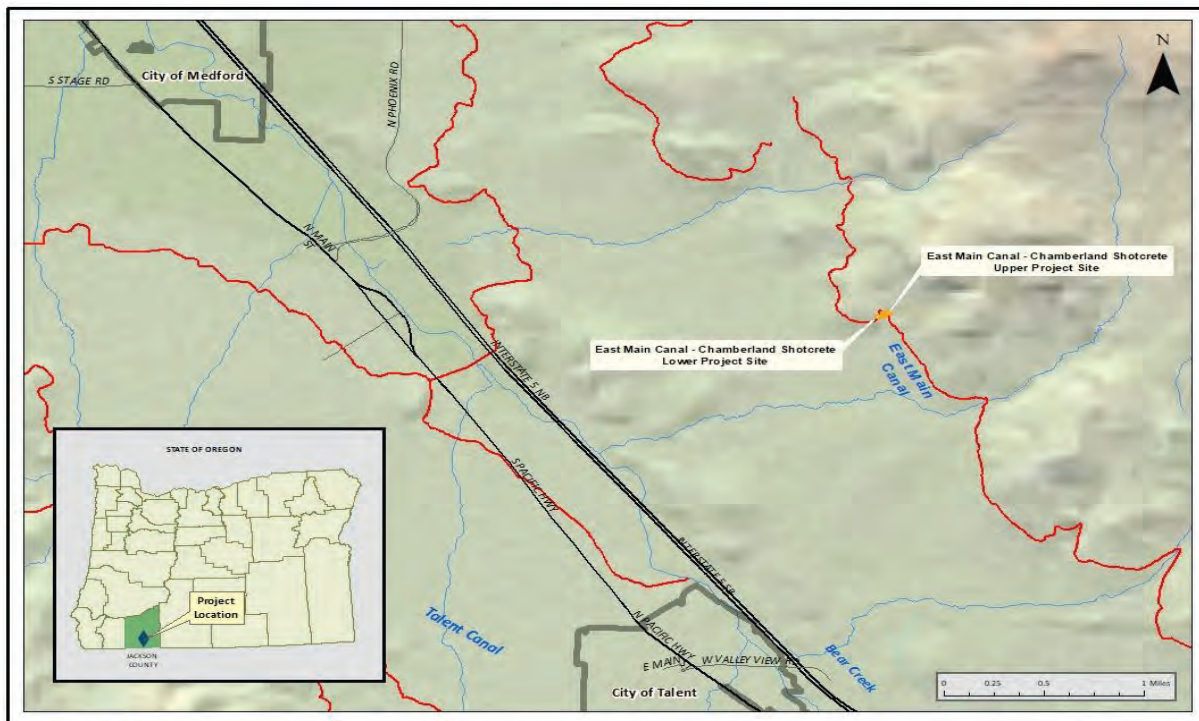
March 2021

The Talent Irrigation District (District) is a Category A applicant. The District's boundary includes land in and around the cities of Medford, Phoenix, Talent and Ashland in Jackson County in southwest Oregon. The District is requesting financial assistance to line two sections of the East Main Canal as it runs through the Chamberland property located at 6023 Hughes Road east of the City of Phoenix. The project site straddles a previously lined section of canal that was completed in 2015. The upstream section measures 200 linear feet and the downstream section measures 120 linear feet. The loss of water through these two unlined sections of canal is estimated at 280 acre feet during a normal irrigation season. The District proposes to line these sections with 4000psi shotcrete with fiber, a durable material to prevent the loss of water. This project meets the goals of the District's Water Management and Conservation Plan in 2018.

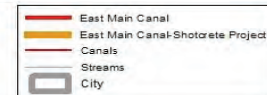
The project should take one year with the estimated completion date being January 2023. The proposed project is located on a Federal facility, the Rogue River Basin Project – Talent Division.

PROJECT LOCATION

The East Main Canal Chamberland Shotcrete Project is located in Jackson County, Oregon, approximately 2 miles east of the City of Phoenix. The project latitude is 42°16'31.54" N and longitude -122°46'00.14" W.



East Main Canal
Chamberland Shotcrete Projects



PROJECT DESCRIPTION

This project includes the lining of two sections of the East Main Canal which are separated by a 300' section of canal that was previously lined in 2015. The upstream section measures 200' feet of canal and the downstream section measures 120'. The District anticipates pouring 95 cubic yards of shotcrete reinforced with Fibermesh® 150, homopolymer polypropylene multifilament fibers. The reinforced shotcrete will be more durable and resistant to water migration.¹ The installation of shotcrete with Fibermesh prevents seepage through the earthen channel and will improve the efficiency and effectiveness of the operation of the canal.



District personnel will prepare the job site by removing vegetation with chainsaws, leaf blowers and weed eaters. An excavator will be used to smooth and shape the canal prism to accept the shotcrete.

The lining of the canal is estimated to take approximately three days to shoot. District personnel will use District equipment - the concrete pump and air compressor, to shoot the material onto the prepared surface of the canal.

¹ <https://kuert.com/wp-content/uploads/2016/01/Propex-Fibermesh-150-TDS.pdf>

EVALUATION CRITER A

Evaluation Criterion A – Project Benefits (35 points)

- **Describe the expected benefits and outcomes of implementing the proposed project.**
 - **What are the benefits to the applicant’s water supply delivery system?**
 - Seals the canal prism reducing the likelihood of leaks and seepage.
 - Provides a more efficient water delivery system.
 - Improves the flow of water by reducing friction/turbidity.
 - Provides a smooth surface which discourages the collection of silt and debris that encourages growth of both aquatic and terrestrial vegetation that can choke the canal.
 - Reduces the frequency of canal cleanings through this section.
 - Reduces the likelihood of a canal failure from burrowing rodents or leaks and seepage undermining the canal.
 - Reduces the likelihood of damage to downslope properties.
 - **If other benefits are expected explain those as well.**
 - Conserves an estimated 280 acre feet of water annually during a normal water season.
 - Improves delivery reliability by preventing the loss of water in the delivery system, providing a more reliable supply to the end user.
 - Improves the water supply since the water saved can be held in the reservoirs for future use.
 - Increases the storage in the reservoirs, allowing for additional recreational use.
 - Increases the reliability of water for other uses, such as augmenting the operational stream flow enhancement as determined by the requirement of the Biological Opinion.²

Evaluation Criterion B – 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 Water Management and Conservation Plan (WMCP), Executive Summary, Page 11, GOALS, “General goals include development and implementation of conservation projects according to criteria that accounts for 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

² Endangered Species Act Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Future Operation and Maintenance of the Rogue River Basin Project (2012-2022), Rogue and Klamath River Basins (HUCs: 18010206, 17100308, 17100307), Oregon and California.

5. Improvements in water delivery accountability; and
6. Reduce liabilities to the TID.”

The placement of reinforced shotcrete in the 320’ section of the East Canal will assist in the accomplishment of most of these WMCP’s objectives.

This project will:

1. Improve the efficiency of the water distribution system by providing a smooth surface, thereby reducing friction loss;
2. Improve water management and control by reducing canal losses allowing more accurate measurements of on-farm use;
3. Reduce leaks and seepage losses by sealing the canal prism;
4. Reduce operation and maintenance costs by discouraging the accumulation of sediment which promotes growth of aquatic and terrestrial vegetation in the canal prism requiring frequent removal;
5. Improve water delivery accountability by minimizing water loss through these sections which provides
 - a. a more reliable flow to the end users and/or
 - b. for the conserved water to be held in storage;
6. Reduce District liability by decreasing the risk of damage to downslope properties.

- **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 is cost effective in relation to the benefits it provides, such as the conservation of water.

Evaluation Criterion C – Project Implementation (10 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.**
 - District personnel will perform all of the tasks detailed below, using District-owned equipment. District personnel are familiar with this type of project.
 - Additional time has been allotted to allow for inclement weather conditions. No work will be performed during irrigation season which typically runs from mid-April through mid-October.

Project Schedule

Milestone / Task / Activity	Planned Start Date	Planned Completion Date
Cultural Resource & Environmental Compliance	2/1/2022	7/31/2022
Mobilization and site prep	10/1/2022	10/31/2022
Apply shotcrete with fiber	11/1/2022	12/31/2022
Demobilization and site restoration	1/1/2023	1/31/2023

- **Describe any permits that will be required.**
 - No permits are required.
- **Identify and describe any engineering or design work.**
 - No engineering or design work is required.
- **Describe any new policies or administrative actions required to implement this project.**
 - No new policies or administrative actions are required. The District will use the existing policies and procedures for procurements.
- **Describe the timeline for completion of the environmental and cultural resource compliance.**
 - District staff consulted the local Reclamation office for advice on the timeline for compliance. They estimated 6 months.

Evaluation Criterion D – Nexus to Reclamation (10 Points)

- **Is the project connected to a Reclamation project or activity?**
 - Yes. The District is part of the Reclamation’s Rogue River Basin Project – Talent Division. The District signed a contract with Reclamation for the rehabilitation and enlargement of the irrigation system. 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. The U.S. has an easement interest in the canal.
- **Will the project benefit any tribe(s)?**
 - This project will not benefit any tribe.

PROJECT BUDGET

Funding Plan

The estimated cost of this project is \$32,441. The District is requesting a 50% cost-share of \$16,220 under this grant opportunity. No other funding sources have been identified. The District will provide at least 50% of the estimated project costs by supplying the labor, value of District owned equipment and de minimus costs. Any necessary monetary contributions will be supplied through District operating funds. The District does not anticipate any pre-award costs and has not included any in the proposed budget.

Table 1. Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$16,220
Costs to be paid by the applicant – Talent Irrigation District	\$16,221
TOTAL PROJECT COST	\$32,441

Budget Proposal

Table 2. Estimated Project Costs

BUDGET ITEM DESCRIPTION	\$/Unit	Quantity	Qty Type	COST	TOTAL COST
Salaries & Wages					
Foreman	\$24.69	5.0	hour	\$123	
Laborer #5	\$17.34	15.0	hour	\$260	
Laborer #6	\$18.38	24.0	hour	\$441	
Laborer #8	\$18.38	39.0	hour	\$717	
Laborer #11	\$24.66	41.0	hour	\$1,011	
Laborer #12	\$16.83	24.0	hour	\$404	
Laborer #13	\$17.78	24.0	hour	\$427	
Laborer #14	\$16.37	39.0	hour	\$638	
Total Salaries & Wages					\$4,022
Fringe Benefits					
Foreman	\$20.18	5.0	hour	\$101	
Laborer #5	\$17.86	15.0	hour	\$268	
Laborer #6	\$15.09	24.0	hour	\$362	
Laborer #8	\$16.66	39.0	hour	\$650	
Laborer #11	\$21.21	41.0	hour	\$870	
Laborer #12	\$18.64	24.0	hour	\$447	
Laborer #13	\$10.94	24.0	hour	\$263	
Laborer #14	\$10.24	39.0	hour	\$399	
Total Fringe Benefits					\$3,360
Equipment (District Owned)					
#8 1988 Peterbilt Equip Hauler	\$50.92	8.0	hour	\$407	
#16 1998 Dodge Truck	\$9.58	6.0	hour	\$57	
#25 2006 Chevy Silverado 2500 4x4	\$13.26	3.0	hour	\$40	
#26 2005 Ford F350 4x4 Truck	\$14.39	3.0	hour	\$43	
#36 2008 Ford F350 4x4 Truck	\$14.40	6.0	hour	\$86	
#52 2011 Ford F250 4x4 Truck	\$11.31	3.0	hour	\$34	
#55 2012 Ford F150 4x4 Truck	\$10.48	5.0	hour	\$52	
#56 2018 Dodge 1500 4x4 Truck	\$10.82	2.0	hour	\$22	
#83 1999 Ziemann Trailer	\$3.37	8.0	hour	\$27	
#185 1985 I/R Air Compressor	\$14.71	24.0	hour	\$353	
#204 1985 Thomsen Concrete Pump	\$26.88	24.0	hour	\$645	
#313 2009 Cat Excavator	\$33.77	15.0	hour	\$507	
Total Equipment Use					\$2,274
Supplies and Materials					
4000psi Shotcrete w/Stealth Fiber	\$156.00	cubic yard	95.0	\$14,820	
Total Material					\$14,820
TOTAL DIRECT COSTS					\$24,475
Indirect Costs					
de minimus (Direct Costs Less Materials)	10%			\$9,655	\$966
SUBTOTAL					\$25,441
Environmental and Cultural Resource Compliance					\$7,000
TOTAL ESTIMATED PROJECT COST					\$32,441

Budget Narrative

Salaries and Wages and Fringe Benefits

The Program Manager is the District Manager, Jim Pendleton. The budget proposal includes personnel that are likely to be on the work crew for this project. However, situations may arise where one or more laborers may be substituted. Therefore, the direct labor and fringe benefit rates are included below on all District work crew employees.

Position	Direct Labor Rate	Retire -ment	FICA	Health Ins	St Emp Ins	Workers Comp Ins	Leave Accrual	Fringe Rate
Foreman	24.69	7.03	1.92	8.66	.02	.88	1.67	20.18
Laborer #4	17.65	3.71	1.37	4.08	.02	.63	.56	10.37
Laborer #5	17.34	3.65	1.34	11.66	.02	.62	.57	17.86
Laborer #6	18.38	3.81	1.41	8.16	.02	.65	1.04	15.09
Laborer #8	18.38	5.24	1.42	8.16	.02	.65	1.17	16.66
Laborer #9	20.74	6.11	1.66	8.17	.02	.74	1.76	18.46
Laborer #11	24.66	7.19	1.96	8.88	.03	.87	2.28	21.21
Laborer #12	16.83	3.47	1.29	12.68	.02	.60	.58	18.64
Laborer #13	17.78	3.67	1.36	4.44	.02	.63	.82	10.94
Laborer #14	16.37	3.38	1.25	4.44	.02	.58	.57	10.24

By the submittal of this application, I, Jim Pendleton, certify that at the time this budget is presented, the labor rates in the budget proposal for the East Main Canal Chamberland Shotcrete Project represent the actual labor rates of the identified personnel and are consistently applied to Federal and non-Federal activities. The benefits included in the proposed rates are required by law, employee agreement, or an established policy of the Talent Irrigation District and the budgeted rates are consistent with what is contributed or expended for those personnel.

The administrative staff will prepare the documents necessary for compliance with the reporting requirements of this agreement, including the final project report, with oversight by the Program Manager. Since this proposed project is scheduled to be completed within a 12 month period, the District anticipates producing one semi-annual report and a final report.

Travel

No travel expenses are anticipated and are not included in the proposed budget.

Equipment

No new equipment will be purchased under this proposal. 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.

The District's equipment rates for 2021 are below:

EQUIPMENT RATES USING THE ARMY CORP OF ENGINEERS CONSTRUCTION EQUIPMENT OWNERSHIP & OPERATING SCHEDULE FOR REGION VIII DATED 11/30/2018 (most recently available)			
REVISED 01/01/2021			
#	DESCRIPTION	HOURLY	STANDBY
8	1988 PETERBILT LOWBOY	50.92	4.61
10	1978 MILITARY TRK/BOOM	30.77	0.87
11	1978 FORD TRK/BOOM	30.77	0.87
16	1998 DODGE RAM 3500 4X4 TRUCK	9.58	1.23
25	2006 CHEVROLET 2500 4X4 TRUCK	13.26	0.95
26	2005 FORD F350 4X4 TRUCK	14.39	1.16
36	2008 FORD F350 4X4 TRUCK	14.40	1.23
37	2014 FORD F150 4X4 TRUCK	10.95	1.11
52	2011 FORD F250 4X4 TRUCK	11.31	1.15
53	2011 FORD F150 4X4 TRUCK	10.37	0.92
55	2012 FORD F150 4X4 TRUCK	10.48	0.98
56	2018 DODGE RAM 1500 4X4 TRUCK	10.82	1.13
58	2013 FORD F150 4X4 TRUCK	10.54	1.00
59	2016 FORD F150 4X4 TRUCK	11.04	1.17
75	2013 KUBOTA TRACK LOADER	16.58	1.84
83	1999 ZIEMAN TRAILER	3.37	0.77
121	2004 KUBOTA EXCAVATOR	11.96	1.81
135	CEMENT MIXER	2.38	0.19
185	1985 ING RAND AIR COMPRESSOR	14.71	1.03
200	WELDER	1.16	0.12
204	1985 THOMSEN CONCRETE PUMP	26.88	2.92
207	1995 MORBARK E-Z BEAVER CHIPPER	15.44	1.34
303	2017 303 CAT EXCAVATOR	9.42	1.87
312	1997 CAT EXCAVATOR	30.64	4.80
313	2009 312DL CAT EXCAVATOR	33.77	6.42
314	2015 312E CAT EXCAVATOR	30.79	5.73
550	1995 JD CRAWLER/DOZER	40.90	4.66
580	1990 CASE BACKHOE	17.35	1.33
600	1965 D-6 CAT/DOZER	45.13	1.64

Materials and Supplies

A quote for the shotcrete with fiber was obtained from a local vendor. If this project is awarded, the District will follow its policies and procedures for the procurement of materials and supplies.

Contractual

There is no contractual cost budget for this project.

Third-Party In-Kind Contributions

There are no third-party participants in this project.

Environmental and Regulatory Compliance Costs

The District contacted the Bureau of Reclamation for cost estimates relating to environmental and cultural resources compliance. The following estimates were provided:

- Environmental and Regulatory Compliance: \$3,000
- Historical and Cultural Resources Compliance: \$4,000

Other Expenses

No other expenses are anticipated for this project.

Indirect Costs

Included in the District's budget is a *de minimis* rate of 10%. The Talent Irrigation District has never requested or received a Federal negotiated indirect cost rate.

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.)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.**

The District will excavate, repack and reshape the canal prism before applying the reinforced shotcrete material. The project will have no impact on the surrounding environment as all work will be completed within the canal easement. Since this project will occur during the off-season, no water will be in the canal. Dust should not be a problem as all activities will occur during the fall and winter months.

- **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?**
No.
- **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?"**
No.
- **When was the water delivery system constructed?**
The East Main Canal was constructed in the early 1920s and enlarged in the early 1960s.
- **Will the proposed project result in any modification of or effects to, individual features of an irrigation system e.g., headgates, canals or flumes). If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**
The earthen canal, initially constructed in the 1920s and enlarged in the 1960s, will be lined with reinforced shotcrete. The canal is cleaned annually with the use of an excavator.

- **Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.**
Yes, the canals themselves are 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?**
No.
- **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?**
No.

REQUIRED PERMITS OR APPROVALS

No permits are required for this project.

OFFICIAL RESOLUTION

The District is unable to submit the official resolution by the filing of this application because of the timing of the board meetings. The official resolution will be submitted shortly after the next scheduled board meeting that will be held April 6, 2021.

Upload #2

Applicant: Talent Irrigation District
Application Number: R-DO-2021-000302
Project Title: East Main Canal Chamberland Shotcrete Project
Status: Complete
Document Title: AttachmentForm_1_2-ATT2-1235-Budget Form - Construction.pdf

Upload #3

Applicant: Talent Irrigation District
Application Number: R-DO-2021-000302
Project Title: East Main Canal Chamberland Shotcrete Project
Status: Complete
Document Title: **Form AttachmentForm_1_2-V1.2.pdf failed to attach**

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