



Kittitas Reclamation District

Turbine Lateral 1.1 Pipeline

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Executive Summary

March 4, 2020

Kittitas Reclamation District

Ellensburg, Kittitas County WA

This proposed project would pipe a 1,470 foot section of high-loss lateral. Funds would pay for materials and labor for KRD to install the pipeline in the fall of 2021. Construction would begin October 2021, and be completed by April of 2022. All work will be done within Reclamation right-of ways. This project will save approximately 0.2 cfs, or 71 acre-feet of water per irrigation season.

Background

The Kittitas Reclamation District (KRD) is located in central Washington and is part of the U.S. Bureau of Reclamation's Yakima Project. The KRD service area (see Figure 1) stretches from Easton Diversion Dam to 11 miles southeast of the city of Kittitas. The District encompasses approximately 104,588 acres, and water is supplied to about 60,000 acres through 330 miles of canals and laterals. Operational waters are drawn from two United States Bureau of Reclamation impoundments, the Keechelus and the Kachess reservoirs. The majority of the irrigated land is pasture and forage crops. The KRD operates more than 20 gauging stations to help regulate flows and reduce operational spills.

Droughts impact the KRD's proratable water supply regularly. The last two droughts were in 2019 and 2015, the KRD's supply was cut to 72 and 46% respectively.

The KRD participated in the first phase of the Yakima River Basin Water Conservation Program, completed with the submittal of the KRD's Water Conservation Plan in February 1999, and a Feasibility Investigation of the water conservation measures completed in March of 2015. Implementation of the CWCP will eventually save 39,300 acre-feet of water and will be phased in as funding becomes available. Many smaller laterals were not included in the CWCP, and need other funding opportunities to address. Without additional resources, these smaller laterals will remain earth-lined, and high losses will continue.

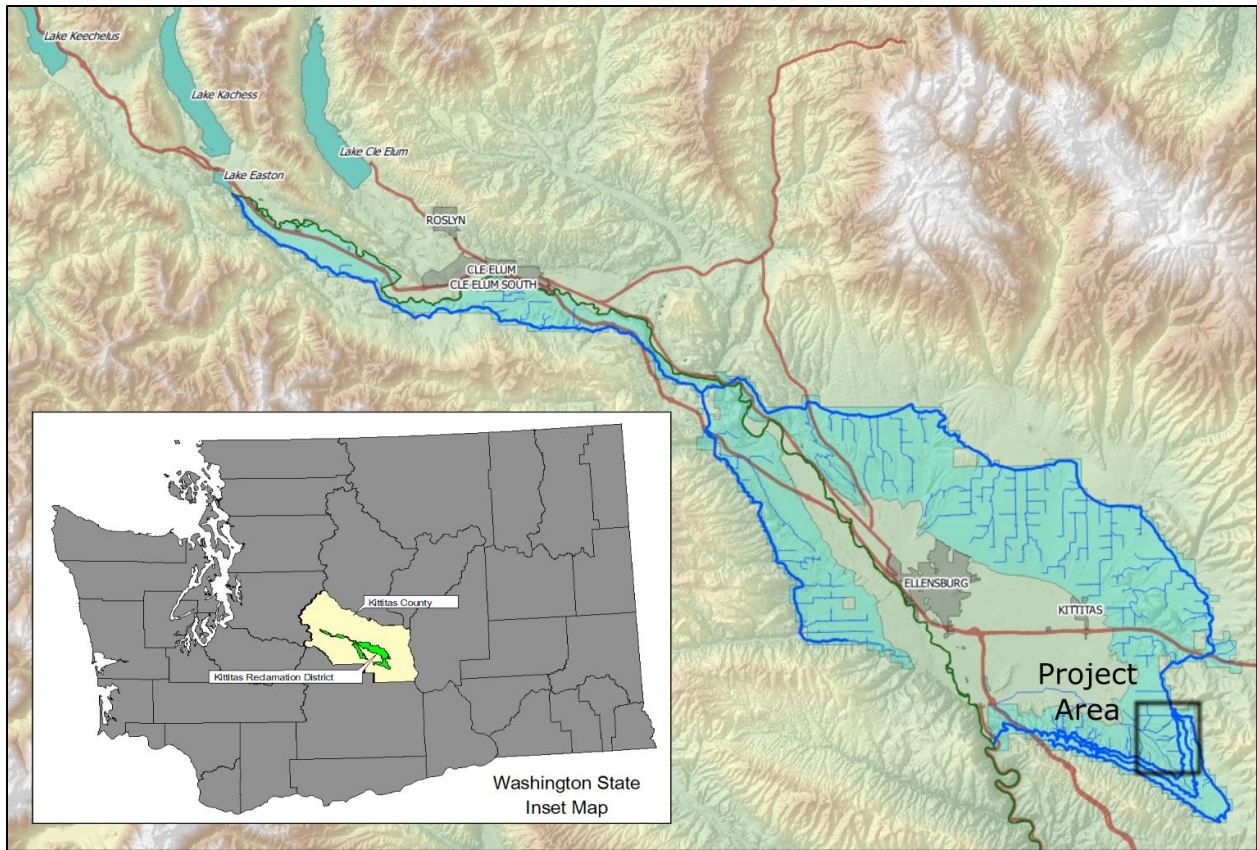


Figure 1 - Project Area

Project Location

The funding requested would pay for the installation of 1,470 feet of pipeline on a small KRD lateral, placed within existing USBR rights-of-way located in Washington State and Kittitas County. The location is 46.9055 N latitude, 120.3377 W longitude, which is 6.5 miles southeast of the city of Kittitas.

Technical Project Description & Milestones

The lateral to be piped has a maximum delivery of 5 cfs. There is little fall in the 1,470 feet of proposed pipeline, but this section will be attached to a previous 1,840 feet of pipe funded previously by WaterSmart that has large fall and available pressure. Fifteen inch PVC pipe was chosen to keep the velocity below 5 feet per second to avoid water hammer issues.

The lateral where the pipe will be laid travels through a farmed field irrigated with a center pivot sprinkler system (see Figure 2). No wetlands, or creeks are in the project area, and all work will be done within USBR right-of-ways. No structures will be removed to install the pipeline, but the existing structures will be modified to connect the pipe.

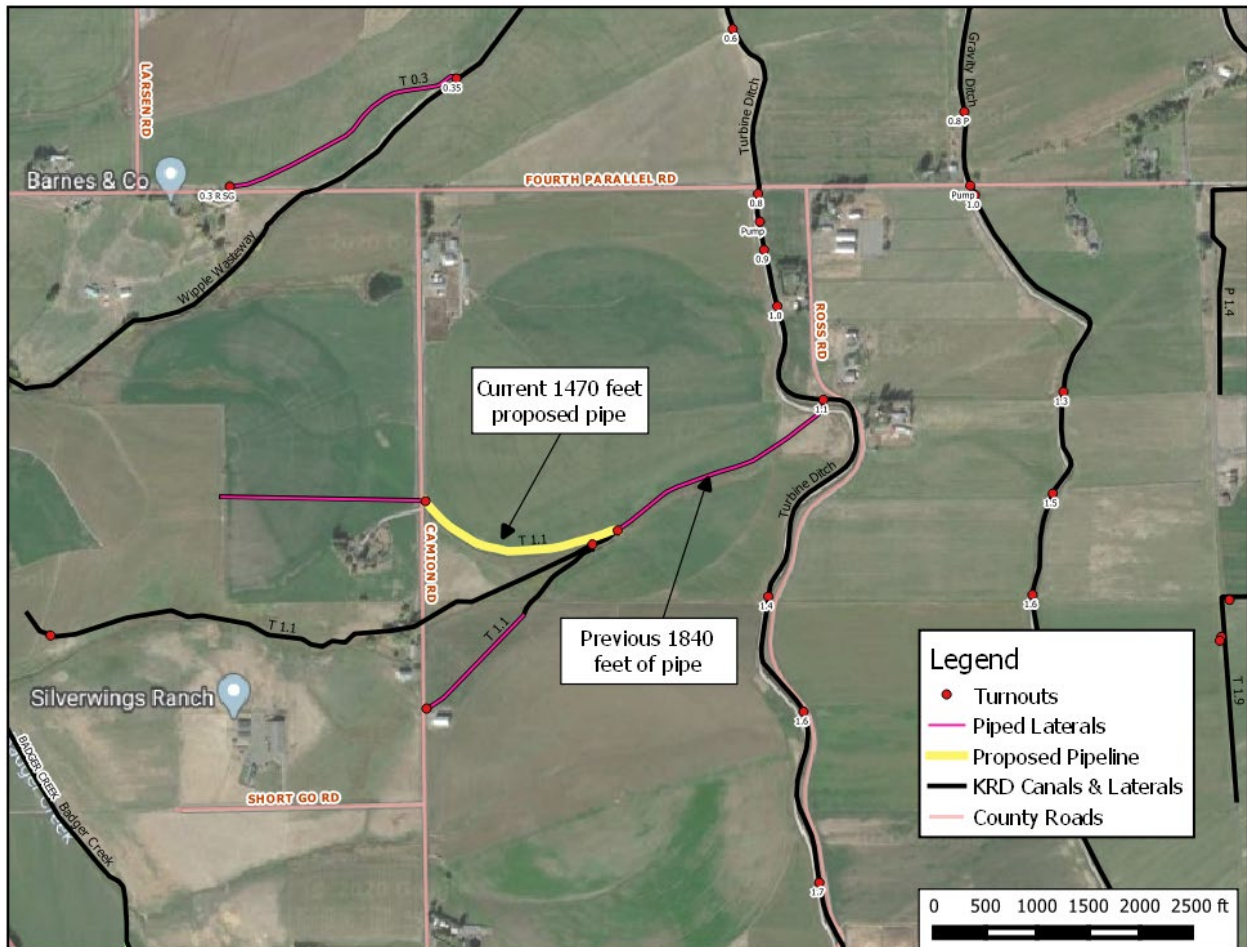


Figure 2 - Pipeline location.

The pipeline project would eliminate seepage and evaporation losses from a small lateral serving about 260 assessed acres. The losses in the area to be piped is estimated to be 0.2 cfs, or 71 acre-feet per year. This is based on ditchrider records of water measured at the headend weir of the lateral and deliveries made to landowners. Post-project ditchrider records will show the gain of water delivered to the landowners.

Task Schedule:

Task	Apr-Jul 2021	Aug-Sep 2021	Oct-Dec 2021	Mar-Apr 2022
Regulatory Compliance	*****			
Planning and Procurement		*****		
Construction			*****	
Testing & Site Restoration				*****

Evaluation Criterion A—Project Benefits

The pipeline project would eliminate seepage and evaporation losses from a small lateral serving about 260 assessed acres. The losses in the area to be piped is estimated to be 0.2 cfs, or 71 acre-feet per year. The water savings would help the Total Water Supply Available (TWSA) for the Yakima Basin. This will lead to more reliable supply of water, especially in drought years, for agriculture in the Yakima Basin.

Evaluation Criterion B—Planning Efforts Supporting the Project

The KRD its Water Conservation Plan in February 1999, and a Feasibility in March of 2015. Implementation of the CWCP will eventually save 39,300 acre-feet of water and will be phased in as funding becomes available. Many smaller laterals were not included in the CWCP, and need other funding opportunities to address. Without additional resources, these smaller laterals will remain earth-lined, and high losses will continue.

Evaluation Criterion C—Project Implementation

Task Schedule:

Task	Apr-Jul 2021	Aug-Sep 2021	Oct-Dec 2021	Mar-Apr 2022
Regulatory Compliance	*****			
Planning and Procurement		*****		
Construction			*****	
Testing & Site Restoration				*****

No permits are required other than a NEPA review. In similar past projects, the USBR Columbia/Cascades office has conducted the NEPA review.

Evaluation Criterion D— Nexus to Reclamation

The KRD is within the USBR’s Yakima Project, and receives its water from USBR reservoirs. The project is to pipe an open channel USBR lateral within USBR right-of-ways.

Evaluation Criterion E— Department of the Interior and Bureau of Reclamation Priorities

This project will review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity; and will modernize DOI infrastructure.

Project Budget

BUDGET ITEM DESCRIPTION	COMPUTATION		TOTAL COST
	Price/Unit	Quantity	
SALARIES AND WAGES --Position title x hourly wage/salary x est. hours for assisted activity. Describe this information for each position.			
Field Supervisor - Main	36.82 / hour	10.8	\$397.66
Maintenance - Mengelos	21.83 / hour	3.2	\$69.86
Maintenance - Brooks	21.58 / hour	24.4	\$526.55
Maintenance - Laukala	20.01 / hour	32	\$640.32
Maintenance - Wernex	20.80 / hour	18	\$374.40
Maintenance - Raab	23.43 / hour	59.6	\$1,396.43
Heavy Equipment Operator - Haberman	27.93 / hour	50.8	\$1,418.84
Heavy Equipment Operator - Wyman	21.46 / hour	40.8	\$875.57
Heavy Equipment Operator - Allred	23.64 / hour	56	\$1,323.84
		Subtotal:	\$7,023.46
FRINGE BENEFITS – Explain the type of fringe benefits and how applied to various categories of personnel.			
Field Supervisor - Main	24.30	10.8	\$262.45
Maintenance - Mengelos	18.99	3.2	\$60.77
Maintenance - Brooks	17.48	19.2	\$335.61
Maintenance - Laukala	14.01	24.4	\$341.77
Maintenance - Wernex	16.64	18	\$299.52
Maintenance - Raab	16.87	59.6	\$1,005.43
Heavy Equipment Operator - Haberman	22.06	50.8	\$1,120.89
Heavy Equipment Operator - Wyman	16.95	40.8	\$691.70
Heavy Equipment Operator - Allred	17.73	56	\$992.88
		Subtotal:	\$5,111.02
MILEAGE —dates; location of travel; method of travel x estimated cost; who will travel			
Vehicles	0.575 / mile	920.8	\$529.46
		Subtotal:	\$529.46
EQUIPMENT —Leased Equipment use rate + hourly wage/salary x est. hours for assisted activity—Describe equipment to be purchased, unit price, # of units for all equipment to be purchased or leased for assisted activity			
Backhoe	65.00 / hour	40.8	\$2,652.00
Dump Truck	44.70 / hour	50.8	\$2,270.76
Excavator	70.10 / hour	56	\$3,925.60
Jumping Jack Compactor	60.00 / hour	4	\$240.00
		Subtotal:	\$9,088.36

SUPPLIES/MATERIALS --Describe all major types of supplies/materials, unit price, # of units, etc., to be used on this assisted activity.			
15" Cl 125 Pip pipe	14.12 / ft	1470	\$20,727.00
6" Cor coupling	5.66 / each	10	\$56.60
6" Cor Pipe Perf	1.86 / ft	1040	\$2,490.18
48" Ext for Butterfly valve	682.13 / each	1	\$682.13
Plywood, CDX 3/4"	23.75 / each	2	\$47.50
Gravel 1 1/2" washed	8.80 / ton	202	\$1,777.60
Weed fabric, 3'x250' roll	83.23 / roll	4	\$332.80
Glue, 717 grey	74.01 / gallon	2	\$148.00
12x8 reducer coupler 100#	67.18 / each	1	\$67.10
bolts, assorted	2.72 / lb.	27	\$73.44
16" PVC Sch 80 flang	1037.07 / each	1	\$1,037.07
48" culvert 10 ft	456.47 / each	1	\$456.47
16" butterfly valve	1308.47 / each	1	\$1,308.47
15" flowmeter	1666.54 / each	1	\$1,666.54
Concrete	3.78 / bag	3	\$15.10
15" 22 Elbow 100#	99.47 / each	1	\$99.47
15" 30 Elbow 63#	100.43 / each	1	\$100.43
15" 22 Elbow 63#	81.49 / each	1	\$81.49
15" 22 Elbow 100#	99.47 / each	1	\$99.47
15" 45 Elbow 63#	135.95 / each	1	\$135.95
		Subtotal:	\$31,402.82
CONTRACTUAL/ CONSTRUCTION —Explain any contracts or sub-Agreements that will be awarded, why needed. Explain contractor qualifications and how the contractor will be selected.			
			0
OTHER —List any other cost elements necessary for your project; such as extra reporting, or contingencies in a construction contract.			
			0
TOTAL DIRECT COSTS		Subtotal:	\$53,155.13
INDIRECT COSTS			
10% de minimus on Labor and benefits			\$1,213.45
		Subtotal:	\$1,213.45
TOTAL ESTIMATED PROJECT COST			\$54,368.58

Budget Narrative

Budget costs are based on the previously built 1,840 feet of pipe on the same lateral that was just completed. This project is for 1,470 feet of pipe, so a simple percentage of the previous section was calculated:

1,470 feet / 1,840 feet = 80% of the previous costs. Quantities were rounded up to the nearest whole number for supplies.

Personnel Salary/Wage: See appendix A for printout of KRD personnel wages.

Fringe Benefits: See appendix A for printout of KRD fringe benefit rates.

Equipment: All the equipment listed in the budget is already owned by the KRD.

Total Material and Supplies (Major): Material and supply costs are based on the previous 1,840 feet of pipeline completed under a WaterSmart grant on the same lateral.

Total Material and Supplies (Insignificant): No insignificant materials or supplies are included.

Environmental and Regulatory Compliance Costs: Environmental/regulatory compliance costs are assumed to be covered by the Columbia/Cascades area office.

Travel Costs: No travel costs are included.

Contingency: No contingency costs are included.

Indirect Costs: Indirect costs included are 10% of wages and benefits.

Appendix A – KRD Budget Support Documents

KRD Employee Wages and Benefits			
EFFECTIVE 1/1/2020			
EMPLOYEE WAGE	HOURLY	EMPLOYEE BENEFITS	TOTAL
ALLRED, TERRY	\$23.64	ALLRED, TERRY	75%
BERG, STACY	\$28.19	BERG, STACY	63%
BROOKS, KURTIS C	\$21.58	BROOKS, KURTIS	81%
EBERHART, URBAN	\$52.18	URBAN EBERHART	56%
ESLINGER, KEVIN	\$36.82	KEVIN ESLINGER	56%
HABERMAN, MARTY	\$27.93	HABERMAN, MARTY	79%
JOHNSON, GARY	\$21.08	GARY JOHNSON	81%
KEITH, PAUL	\$21.08	KEITH, PAUL	82%
LAUKALA, JEFFERY L	\$20.01	LAUKALA, JEFFERY L	70%
MAIN, BOB	\$36.82	MAIN, BOB	66%
MAIN, ROBERT JOHN	\$21.79	ROBERT JOHN MAIN	94%
MAYER, DAVID	\$21.58	MAYER, DAVID	83%
MENGELOS, JON	\$21.83	MENGELOS, JON	87%
MINOR, MIKE	\$21.83	MINOR, MIKE	81%
NUNLEY, JUSTIN	\$20.44	NUNLEY, JUSTIN	76%
RAAB, CRAIG	\$23.43	RAAB, CRAIG	72%
SANDVIG, CHRIS	\$22.01	SANDVIG, CHRIS	87%
SATNIK, KATHLEEN	\$28.06	KATHLEEN SATNIK	69%
SATNIK, ROGER	\$33.94	SATNIK, ROGER	62%
VICKERS, SARA	\$24.37	VICKERS, SARA	63%
WEBSTER, TINA	\$25.12	WEBSTER, TINA	70%
WEBSTER, DOUG	\$21.33	WEBSTER, DOUG	81%
WERNEX, JAMES	\$20.80	WERNEX, JAMES	80%
WEYAND, JOSH	\$20.31	WEYAND, JOSH	72%
WYMAN, RANDY	\$21.46	WYMAN, RANDY	79%

Appendix B – KRD Board Resolution of Support



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RESOLUTION 2020-04

WHEREAS, the Kittitas Reclamation District is in receipt of the U.S. Bureau of Reclamation Funding Opportunity Announcement No. BOR-DO-20-F006, WaterSMART - Small-Scale Water Efficiency Projects; and;

WHEREAS, the Kittitas Reclamation District has legal authority to enter into a grant with the Bureau of Reclamation; and;

WHEREAS, the Board of Directors of the Kittitas Reclamation District supports the application submitted; and;

WHEREAS, the Kittitas Reclamation District will work with the U.S. Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

NOW, THEREFORE, IT IS HEREBY RESOLVED by the Board of Directors that the Secretary-Manager, Urban Eberhart, has legal authority to enter into agreement with the U.S. Bureau of Reclamation WaterSMART Grant financial assistance program and to sign any and all documents necessary to enter into the WaterSMART program.

DATED, this 3rd day of March, 2020.

Handwritten signature of Fred Schnebly in black ink.

CHAIRMAN

VICE CHAIRMAN

Handwritten signature of Ed Weckung in black ink.

BOARD MEMBER

Handwritten signature of Mark Hansen in blue ink.

BOARD MEMBER

Handwritten signature of Brad Johnson in blue ink.

BOARD MEMBER

Handwritten signature of Larry Bland in blue ink.

Handwritten signature of Urban Eberhart in blue ink.
SECRETARY-MANAGER