



## OREGON WATER RESOURCES DEPARTMENT WATER SUPPLY DEVELOPMENT ACCOUNT LOAN AND GRANT APPLICATION

### I. Project Information

Project Name: Willow Creek: Piping Irrigation Laterals

Type of Project: (A and G) Improve infrastructure to conserve water  Check box if project type includes storage

Funding Request Type:  Loan  Grant

Funding Amount Requested: \$ 500,355 Total cost of project: \$ 785,143

*Note: Grant funding requests must demonstrate cost match of at least 25% of total project cost. This may include in-kind.*

### II. Applicant Information

<b>Principal Contact: Ken Diebel</b>	<b>Fiscal Officer: Kelly Weideman</b>
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Email: <u>kprn@eoni.com</u>	Email: <u>malheurwc@hotmail.com</u>

<b>Involved Landowner 1: Vale Oregon Irrigation District</b>	<b>Involved Landowner 2:</b>
Address: <u>521 A Street West</u>	Address:
<u>Vale, OR 97918</u>	
Phone: Fax:	Phone: Fax:
Email: <u>void@fmtc.com</u>	Email:

*\*Please include a supplementary document that lists all additional involved landowners if applicable.*

#### **Certification:**

I certify that this application is a true and accurate representation of the proposed project work and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department funding award and are prepared to implement the project if awarded.

Applicant Signature: Ken Diebel Date: 1/18/2016

Print Name: Ken Diebel Title/Organization: Coordinator, Malheur Watershed Council

### III. Project Summary

Please provide a description of the need, purpose and nature of the project. Include what the applicant intends to complete and how the applicant intends to proceed.

#### **Purpose:**

We are proposing to **pipe about 22,000 feet of lateral irrigation canals** in the Willow Creek Area within the Vale Oregon Irrigation District (VOID). The purpose is to prevent water loss from seepage and evaporation. We expect this to **save roughly 1,950 acre-feet per-year**. Additionally, piping creates gravity pressure, which enables farmers to convert from traditional furrow irrigation to sprinkler systems. Once farmers served by the pipeline convert to sprinklers, this will create **additional water savings of approximately 0.7 acre feet per-acre per-year**. The project

will address significant water quality and bull trout habitat problems and be an investment in an economically troubled county.

**Needs:**

**Short water supply:** Water shortages have been an increasing problem for the District, especially since 2000. Because of a lack of water in the reservoirs, the irrigation season has ended early for 7 of the past 12 years. (Our projects have enabled producers to **convert about 12,000 acres** to sprinklers.) We expect shortages will continue and may become worse with a changing climate. We are faced with increased demands for existing water for environmental concerns and a federally listed fish species.

**Water quality:** There are concerns in Willow Creek about poor water quality due to irrigation tail water runoff. Monitoring conducted by the Malheur Watershed Council in the late 1990s and early 2000s identified the Willow Creek watershed as a priority for assistance. The Oregon DEQ ranks Willow Creek and the Malheur River in the top 3 rivers having the worst water quality in Oregon.

**Bull trout habitat:** There are Bull Trout in one of the reservoirs that supplies Willow Creek with irrigation water, and there is a need to maintain water levels in the reservoir to protect Bull Trout. Bull Trout in Beulah Reservoir are federally ESA-listed as a “threatened” species. To protect bull trout, minimum reservoir depths have been established during the irrigation season. Since 2010 the District has leased water to the Bureau of Reclamation to **maintain 2,000 acre-feet carry over pool**. Strategies that reduce water withdrawals from the reservoir and maximize water use efficiency on irrigated lands in the watershed are critical to sustain bull trout and irrigated agriculture in the watershed.

**Economic challenges in a rural area:** Malheur County ranks near the bottom of all economic measures. Improving irrigation infrastructure helps create jobs, and improves many other aspects of the economy.

The Willow Creek Working Group, Malheur Watershed Council, irrigators, Vale Oregon, Warm Springs, Owyhee, and Orchard Irrigation Districts, and many other partners have been working on water quality and quantity improvement projects in the Willow Creek watershed for over a decade. It is considered a Demonstration Area for several state and federal programs.

As cost share, VOID will incur all expenses to install the pipe. This proposal is requesting only materials, engineering, and project management. The District has an excellent record of conducting projects similar to this one. They have previously installed almost 100 miles of pipe on time, within budget, and with very little administrative costs. If funded, this project will **complete the piping effort in Willow Creek**, a significant achievement.

## IV. Project Specifics

**Instructions:** Answer all questions in this section by typing the answer below the question, using additional space as needed.

**1. Describe how the project will provide public benefits in each of the three public benefit categories.**

Project applications will be scored and ranked based on the economic, environmental and social/cultural public benefits identified below. Describe the conditions prior to and after project implementation to demonstrate changes resulting from the project. Descriptions should be quantitative when possible. Information provided must be sufficient to allow evaluation of the public benefits of the project. **Please see the Public Benefit and Evaluation Guidance document for a description of how public benefits will be evaluated.** Applications that do not demonstrate public benefit in each of the three categories (economic, environmental, social/cultural) will be deemed incomplete. Leave blank any categories that are not applicable to project.

***Economic Benefits ORS 541.673(2)***

(a) Job creation or retention:

We estimate the conservation work we have engaged in has directly or indirectly contributed to **18 or more jobs** in the area. We suspect it is far more than 18 but it is difficult to quantify. When contacted, the owner of Roman's Irrigation Supply indicated that he has grown from a staff of 4 employees in 2000 to 17 employees currently. He attributes this growth to the activities by VOID and the private landowners to improve irrigation infrastructure, particularly in the Willow Creek area. Other local irrigation companies report similar growth and activity.

The irrigation district itself has been able to keep **5 or more laborers** employed during the non-irrigation season installing the miles of pipeline. Normally these employees would have reduced hours or be laid off for the winter. They are now employed in installing pipeline during the winter months.

*Funding this proposal will continue the positive economic activity in a depressed rural area.*

(b) Increases in economic activity:

Piping laterals has shown to be a local driver for the farm economy in Malheur County. **Grants totaling more than \$15 million have been contributed to the Willow Creek project since 2000.** It is only common sense to believe this has added greatly to the local economy because most of the money has been spent locally. This \$15 million does not include the cost share, most of it cash, provided by the landowners spending money to convert to sprinklers.

This spending has a multiplying effect on local economies. Research on spending on infrastructure projects such on highway projects indicates that for every dollar spent on the highway project 1.5 to 3 times that is re-spent in the local economy. Workers buy food, pay rent, buy gas and so forth (*Highway Grants: Roads to prosperity? (Sylvain Leduc and Daniel Wilson, Federal Reserve Bank of San Francisco Economic Letter)*).

More specific to spending in the Oregon natural resources' sector, *Ecotrust (2011)* published a short paper about Oregon's restoration economy. They estimate that **90% of the money spent on restoration stays local**; for every \$1 million spent on restoration 19 jobs are created; and specific to Malheur County, they estimate that **restoration spending from 2001 to 2010 created 212 jobs and generated \$35 million in economic output.** Applying these figures to our proposed project the \$500,000 requested should generate \$750,000 to \$1.5 million in economic output and create or maintain 8 jobs.

Right now most of the information is anecdotal, but Bill Burhig, OSU Extension, is developing a project to fully quantify the economic effects of all the improvements being made to the irrigation infrastructure. Extension has found that irrigation supply companies all report increased activity in recent years. As stated before, Roman's Irrigation Company reports they needed to hire 13 more employees to keep up with the

demand for new pivots. Extension has interviewed a few producers with new pivots, and they report that they are pleasantly surprised that pivots are paying for themselves faster than they expected.

(c) Increases in efficiency or innovation:

Piping canals increases efficiency by saving water, delivers water to the farm more precisely, and in a timelier fashion. **VOID's average annual water supply is 87,000 acre-feet per year and it is estimated they lose about 37% or 32,000 acre-feet. Most of the lost water is seeping into the ground and a smaller percentage is lost to evaporation.** The irrigation district estimate yearly losses in the dirt lateral canals to be about 470 acre-feet per mile per year. Yearly losses in the dirt lateral canals are estimated to be about 470 acre-feet per mile per year. Installing the 22,000 feet of pipe requested in this proposal will save about 1,950 acre-feet per-year. Enabling farmers to convert to sprinkler will **save an estimated 0.7 acre-feet per-acre annually** for each acre converted.

(d) Enhancement of infrastructure, farmland, public resource lands, industrial lands, commercial lands or lands having other key uses:

The purpose of this proposed project is to modernize the infrastructure of the irrigation system in the Willow Creek area. Improving the delivery of irrigation water is a direct result of piping laterals. This results in improved water management, and enables farmers to cost-effectively convert to sprinkler or drip irrigation. About 12,000 acres have been converted since the year 2000.

When farmers convert they upgrade their farming system with new buried mainline pipes, doing away with outdated dirt or cement ditches. Booster pumps and electrical systems are installed to run the pivots. Many farmers are installing drip irrigation systems to take advantage of the gravity pressure supplied by the pipelines. Without the pipelines most of these upgrades would not occur, or at least not as quickly as we have seen.

**We estimate about \$30 million has been spent on upgrading irrigation infrastructure in Willow Creek.**

(e) Enhanced economic value associated with tourism or recreational or commercial fishing, with fisheries involving native fish of cultural significance to Indian tribes or with other economic values resulting from restoring or protecting water instream:

The Vale Oregon Irrigation District (VOID) obtains much of its irrigation water from Beulah Reservoir. The federally listed bull trout resides in the reservoir during the winter months and our project will help the District maintain a carryover pool. The bull trout is a species of significance to the Burns-Paiute Tribe and to the fisheries community in general. Although we don't have data yet, USGS is studying the effects of the 2,000 acre-feet the District has left in Beulah as a carryover pool since 2010, it is safe to assume that the health of all the fisheries in the reservoir will improve. We can assume if this is helping fish habitat all species will benefit, even stocked fish. This will lead to better recreational fishing at Beulah. The carry over pool will enable the reservoir to fill quicker and with our increased water efficiency will empty slower. Logically, this will lead to increased tourism through more boating and swimming at the reservoir.

(f) Increases in irrigated land for agriculture:

In recent years, farmers have let many fields lie fallow because of the shortage in irrigation water. Estimates are that about 20% of the land (7,000 acres) within the area was left fallow in 2015 (Bill Burhig, OSU Extension). Cropping patterns have changed as well. Crops that don't require irrigation or late-season irrigation have increased. Extension estimates the conversion to these kinds of crops accounted for about 30% of the acres in 2015 (Bill Burhig, OSU Extension). With our continued improvements in water conservation that this proposal represents, we will help minimize the number of fallow acres and help farmers raise more productive crops.

***Environmental Benefits ORS 541.673(3)***

- (a) A measurable improvement in protected streamflow's that accomplishes one or more of the following:
- (A) Supports the natural hydrograph;
  - (B) Improves floodplain function;

- (C) Supports state- or federally-listed sensitive, threatened or endangered fish species;
- (D) Supports native fish species of cultural importance to Indian tribes; or
- (E) Supports riparian habitat important for wildlife:

**C & D)** Our project will benefit the federally listed bull trout, which is also a species of significance to the Burns-Paiute Tribe. A 2005 Biological Opinion written by the USFWS directed the Bureau of Reclamation (BOR) to implement measures to minimize the effect Agency Valley Dam on the habitat of the federally listed bull trout. Carryover pool volume recommendations are needed to support a forage base for bull trout in Beulah Reservoir. A reservoir carryover pool can sustain a prey base for returning fish.

In the past, dam operations did not take into account the importance of a carryover pool. Water levels fluctuated widely, and depended only on water users needs during the late summer and fall. In low water years' drawdown was 100%. Effects of drawdowns are difficult to evaluate because data is sparse. USGS studied the reservoir twice, during the winters of 2002-03 and 2007-09. The first was a moderate draw down and the second an extreme drawdown. There is not yet enough information to make scientifically based recommendations. The Bureau of Reclamation continues to study the problem.

**Vale Oregon Irrigation District has agreed to maintain a minimum pool of 2,000 acre feet per-year, every year from 2010 to 2014.** This gives researchers more time to determine if this size of carryover pool will benefit bull trout. The Districts' water conservation efforts made this carryover pool possible.

The Bureau of Reclamation and VOID have studied several alternatives to help maintain a sufficient carry over pool and meet the needs of the irrigators. Some options discussed included raising dam height, dredging sediment out of the reservoir and continuing water conservation efforts. While BOR has not made a definitive conclusion, it appears that preliminary analysis shows that conservation is the most practical, cost effective and beneficial way to address bull trout habitat needs in Beulah.

- (b) A measurable improvement in groundwater levels that enhances environmental conditions in groundwater restricted areas or other areas:

Malheur County groundwater has been studied for many years, mostly because of concerns about contamination from nitrogen and pesticides. DEQ declared northern Malheur County to be a "Groundwater Management Area" in the late 1980s.

At the same time, Gannett (1990. *Groundwater Report #34. WRD*) studied groundwater levels and contaminant transport times. He found that it would take considerable time for the contaminants to flush through the system, and that water levels appeared to be stable at that time (Gannett, 1990). The Water Resources Department monitors wells in the basin and current information shows that water levels remain about the same (WRD, presentation at the Malheur Watershed Council, September 2015).

However, under continuous dry years, interest in drilling wells has increased. Most of these wells are or will be supplemental to surface water irrigation. We have shown that water conservation leads to a 2-3 week longer irrigation. Thus, with our continued water conservation efforts **we can delay the use of supplemental wells by 2-3 weeks in dry years** and in moderate years we may be able to defer their use all together. Thus, while there may be some recharge loss to the shallow aquifer, withdrawals from the deeper aquifer will be reduced by our piping efforts.

- (c) A measurable improvement in the quality of surface water or groundwater:

Oregon DEQ ranks the Malheur River and Willow Creek to be in the top three most polluted rivers in Oregon (DEQ, 2014, *OWQI Report*). DEQ set Total Maximum Daily Load targets for the Malheur Basin in 2010. They identified sediment, nutrients, (*Total Phosphorus in particular*) and bacteria as the main water quality concerns. They also concluded that flood irrigation is the primary human activity that leads to these problems.

Flood and furrow irrigation systems present water quality and water quantity concerns because as irrigation water moves over the surface of cropland or pasture, it picks up bacteria and nutrients from manure, and sediment and nutrients from cropland soils. This is especially evident the first time irrigation is turned on in the spring. The drainage water moves to downstream water users and eventually into Willow Creek and the Malheur River. This kind of irrigation also requires more water so that the water reaches the bottom of the field in a timely manner to allow for infiltration in the lower part of the field.

The Malheur Watershed Council has been intensively monitoring Willow Creek since 1997. We have measured the creek itself, drains entering the creek and individual fields. Our conclusions are that tail-water from irrigated pastures and row crop fields have a significant detrimental effect on water quality. Willow Creek meets most of the state's water quality standards in the reaches above the irrigated portion of the basin, however, it is among the most polluted rivers in the state at the mouth of Willow Creek. Note Attachment G.

When compared to the applied irrigation water:

- *Bacteria levels increase 23 fold in tail-water from irrigated pastures. Bacteria loads are highest for the first irrigation of the season. Livestock have been feed all winter on pastures and the first irrigation flows through built up waste.*
- *Total phosphorus levels increase 3.7 times in tail-water from furrow irrigated row-crop fields. Phosphorus amounts average about 10.4 pound per acre per year lost with furrow irrigation.*

Thus conversion to sprinkler or drip systems eliminates field runoff and erosion, greatly reducing pollutant loads going into Willow Creek. Conversion of earth irrigation water laterals to pipe facilitates the conversion to efficient irrigation systems because growers receive pressurized water.

We estimate that approximately 12,000 acres have been converted to sprinklers in Willow Creek since 2000. **Applying the results of our monitoring, we estimate that we are preventing billions of colonies of bacteria, 240,000 tons of sediment, and almost 125,000 pounds of phosphorus from entering Willow Creek each year.** This is significant but there is still a long way to go.

As stated earlier, DEQ designated northern Malheur County as a groundwater management area in the late 1980s. A quote from Gannett's report summarizes the situation with groundwater very well.

*“Reducing the level of ground water contamination will require reducing the amount of irrigation water lost to deep percolation, reducing the amount of nitrogen in the water that is lost to deep percolation, and reducing the amount of nitrogen in tail water from the fields discharging to ditches. Irrigation and nitrogen application should be managed to ensure that nitrogen in the soil profile is not flushed below the rooting depth of the crop during irrigation.” (Gannett 1990)*

OSU Extension, the Malheur Experiment Station, the Council, the SWCD, NRCS, DEQ and ODA have worked with growers to cut their application of fertilizers and pesticides with great success. “Multiple lines of evidence suggesting improving water quality (including the statistically significant decreasing area-wide trend) provide sufficient evidence to conclude there has been an overall improvement in groundwater nitrate concentrations from 1991 through 2012” (DEQ, 2015, *Groundwater Trend Analysis Report*). DEQ concludes that while progress has been made there is still much more work to be done.

The piping of canals and converting to sprinklers is the second component in protecting groundwater. With the requested additional piping, we take yet another step in this long process.

(d) Water conservation:

VOID's average annual water supply is 87,000 acre-feet per year and they estimate they lose about 37% or 32,000 acre- feet. Most of the lost water is seeping into the ground and a smaller percentage is lost to evaporation. They estimate yearly losses in the dirt lateral canals to be about 470 acre-feet per mile per year. **If**

**we install the 22,000 feet of pipe are asking for in this proposal, we will save about 1,950 acre-feet per year.**

These estimates are calculated by measuring how much water is diverted from the main canal into the lateral canal. The VOID then measures the amount applied to each field served by that canal. The difference between what is diverted and what is applied is the loss to seepage and evaporation. The District has upgraded its ability to measure water significantly in the past few years. The pipelines allow for more sophisticated measuring devices to be installed for each field. See the figure in Attachment F. The headwalls installed for the pipelines will allow for more precise measurement of the water diverted from the main canal. The VOID is in the process of installing real-time measuring devices within the main canal to get even more precise data on water losses and improve water management.

Another aspect of water conservation addressed by this project is improved on-farm efficiency. The pipelines make converting to sprinklers feasible. The District estimates, based on NRCS data and VOID observations, that furrow irrigation is only 30-40% efficient. Properly managed center pivot sprinklers are about 75 to 85% efficient and drip approaches 100% efficiency. It follows that about **0.7 acre-feet per-acre per-year could be saved** when the fields served by these pipelines are converted to sprinkler.

We fully expect that with more piping there will be more sprinklers. Landowners have spent a great deal of their own money in converting and we have been successful in obtaining OWEB, NRCS' EQIP, and AWEP grants to install improved on-farm irrigation systems. Our estimates are that about 12,000 acres have been converted so far and more are being planned.

(e) Increased ecosystem resiliency to climate change impacts:

Improving infrastructure and becoming more efficient with water is one of the best ways farmers can adapt to climate change (John Stevenson, OSU Regional Climate Specialist). Most estimates are that eastern Oregon will experience longer and dryer summers, and there will be less snow during the winter. This means more short water years, as we have experienced in the last 10 to 12 years.

(f) Improvements that address one or more limiting ecological factors in the project watershed:

The Oregon Watershed Enhancement Board has developed a list of limiting ecological factors in each watershed in Oregon. For the Lower Willow Creek Watershed these factors are:

*-Water quality*

*Bacteria*

*Nutrients*

*Sediment*

*-Degraded aquatic habitat*

*-Degraded riparian habitat*

DEQs' 2010 TMDL verifies these are the leading ecological problems in the Lower Willow Creek Basin. Our proposed project directly addresses the first and perhaps most critical ecological limiting factor, water quality. Flood irrigation of pastures is the primary source of bacteria and furrow irrigation of row crops is leading cause of sediment and nutrients entering Willow Creek. As we have stated previously, installation of pipelines leads to sprinklers and sprinklers eliminate irrigation induced erosion and tail water from entering Willow Creek. With less sediment and nutrients in the system aquatic habitat will improve. We are not addressing riparian habitat in this proposal although the Council is working on this issue in Willow Creek and other areas of the watershed.

#### ***Social/Cultural Benefits ORS 541.673(4)***

(a) The promotion of public health and safety and of local food systems:

With improvements to irrigation system infrastructure, local food systems will be improved. Fewer acres will be left fallow and a greater variety of crops will be grown. Crop yields will improve as well.

NRCS studies show a **25% to 35% increase in crop yield under sprinklers**. This is attributed to more uniform application of water and better timing of application. Producers can tailor their irrigation to meet crop water demands. Many have installed soil moisture sensors to help them apply in an even more precise manner.

Increased yields are expected for alfalfa and irrigated pasture as well. According to the **Montana Water Bureau** *"one would expect yields to be slightly higher in properly designed center pivot systems since these systems can uniformly apply small amounts at frequent intervals and thus avoid the larger swings in soil moisture associated with flood systems that apply water every 10-14 days"*

(b) A measurable improvement in conditions for members of minority or low-income communities, economically distressed rural communities, tribal communities or other communities traditionally underrepresented in public processes:

According to the Oregon State Employment Bureau *"Poverty is a serious issue in Malheur County. Based on U.S. Census Bureau statistics, Malheur County's 2012 poverty rate was 25.8 percent, which was Oregon's highest. According to Oregon Employment Department data, the average job in Malheur County paid \$31,145 in 2012. That was only 70 percent of the statewide average. According to U.S. Census Bureau data, Malheur County's median household income was \$33,994 in 2012. That was only 69 percent of the statewide median."*

As we discussed earlier, spending on natural resources benefits the local economy. Most of the money stays in the local economy and there is a 1.5 to 3.0 multiplier effect. We expect our proposal will maintain jobs and help stimulate a struggling rural economy.

(c) The promotion of recreation and scenic values:

Cleaning up Willow Creek and the Malheur River so they don't look like chocolate pudding in the summer months will go a long way to improving scenic values in the area. As one farmer described conditions along the river in the summer months, *"You don't have to be religious to believe someone could walk on water if you look the river in the summer."* The State's bacteria standard is designed to protect swimmers and boaters from water borne illnesses. Any reductions in bacteria levels will help encourage more water based recreation in the Malheur area.

Having a minimum pool in Beulah Reservoir will enhance scenery. A pool of water is much better looking than an empty mud flat behind the dam all winter. We have already discussed that we believe fishing opportunities in the reservoir will be improved because of the carry over pool. We also think swimming and boating will improve as well. The reservoir is more likely to fill and stay fuller longer because of our water conservation efforts.

(d) Contribution to the body of scientific data publicly available in this state:

With OWEB and DEQ 319 funding the Watershed Council has and continues to conduct a rigorous water quality monitoring program in Willow Creek. The Council wrote a comprehensive report in 2008 and updated it in 2013. See the summary in Attachment G. OWEB, DEQ, NRCS, and EPA have designated Willow Creek as one of the Conservation Effectiveness Areas for Oregon. The purpose of this designation is to contribute to scientific data throughout the state and to encourage other areas to adopt the practices adopted in Willow Creek.

(e) The promotion of state or local priorities, including but not limited to the restoration and protection of native fish species of cultural significance to Indian tribes:

*Restoration of bull trout populations is a priority for Oregon. It is one of the key species listed in ODFW's Conservation Strategy (2006).* As stated before, recovering cold water fisheries in the Malheur Basin, which includes the federally listed bull trout, is a priority for the Burns-Paiute Tribe. Most of the natural resource agencies have designated Willow Creek to be a priority area for their work.

NRCS, EPA, DEQ, OWEB and ODA have identified Willow Creek as a priority area both as a spot to conduct restoration work, and as an area to demonstrate the effectiveness of conservation so that the kinds of work we have accomplished. These agencies are working on a Conservation Effectiveness Program (CEP) that will promote these kinds of restoration projects in other parts of the west.

Willow Creek is part of the EPA/NRCS National Water Quality Initiative (NWQI) program, which selects a few small watersheds to focus conservation and monitoring efforts. In the past, Willow Creek has received Agricultural Water Quality Effectiveness Program (AWEP) grants. This older program is similar to the NWQI in that it picked only a few small watersheds to focus restoration efforts.

(f) The promotion of collaborative basin planning efforts, including but not limited to efforts under Oregon's Integrated Water Resources Strategy:

The Lower Willow Creek Working Group, a subset of the Malheur Watershed Council, is the entity that has planned and organized most of the work in Willow Creek. The Working Group and Irrigation District developed a plan in 2008 titled "The Willow Creek Piping Project." This proposal is an outgrowth of that plan. Our proposal furthers the goals of each of the following collaborative basin planning efforts:

*Malheur River Watershed Action Plan. 2015. Malheur Watershed Council*

*Malheur River TMDL. 2010.*

*Malheur River Agricultural Water Quality Management Plan. 2011. ODA*

*Bull Trout Recovery Plan. 2015. USFWS. Upper Snake River Recovery Unit. Pg. E-40.*

*Oregon Conservation Strategy. 2006. ODFW*

*Bull Trout Biological Opinion. 2005. USFWS*

*Snake River-Hells Canyon TMDL. 2004. Idaho and Oregon DEQ*

## 2. Identify Project Location.

(a) Attach map of project implementation area if appropriate. List map(s) in this space and attach to application.  
*Attachment A*

*Township Range Section Quarter-Quarter Section*  
*16 S 43 E several*

(b) Tax Lot Number(s)  
*Several*

(c) Latitude/Longitude  
*44.083293/ -117.331729*

(d) County  
*Malheur*

(e) Watershed  
*Willow*

(f) River/Stream Mile (where applicable)  
*NA*

3. (a) Will the project result in a physical change on private land?  Yes  No

If yes, attach evidence that landowners are aware of and agree to the proposal. List attachments below.

(b) Will the project result in monitoring on private land?  Yes  No

If yes, attach evidence that landowners agree to the proposal and are aware that monitoring information is public record. List attachments below.

4. Provide a project schedule, including beginning and completion dates. Use the following table as a guide. Attach a separate sheet to application if needed.

**Estimated Project Duration: July 1, 2016 to June 1, 2017**

Place an "X" in the appropriate column to indicate when <b>Project Key Tasks</b>	2016				2017				2018 & Beyond
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	
<i>Grant Agreement signed</i>			X						
<i>Final pipeline design</i>			X						
<i>Pipeline installation (Year I)</i>			X	X	X	X			
<i>Break for Irrigation Season</i>						X	X		
<i>Pipeline Installation (Year II)</i>								X	
<i>Maintenance</i>									X

5. Describe any conditions that may affect the completion of the project.

*Severe winter weather can put a halt to construction work. Unfortunately, the past few winters have been mild. This has allowed the District to install many miles of pipe, but also means a shorter irrigation season.*

6. Attach a completed feasibility analysis if one has been completed.

*NA*

7. Provide suggestions for interim and long-term project performance benchmarks.

*Performance should be based on the amount of water we estimate the project saves. Measuring the amount of water the District uses is difficult because of the large amount of water and the distances between withdrawal and on-farm delivery. The VOID has bought and continues to buy and install sophisticated measuring devices. They should be able to provide a reasonably accurate measurement of water savings.*

8. Provide letters of support for the proposed project (list in this space and attach to application).

*DEQ  
Burns Paiute Tribe  
OWEB  
OSU Extension  
John Stevenson, OSU Regional Climate Specialist  
ODFW*

Malheur SWCD  
Owyhee Watershed Council  
NRCS

**9. Describe partnerships and collaborative efforts associated with the project.**

The Lower Willow Creek Working Group formed in the early 2000's. Its purpose was to coordinate conservation work taking place in the area. The Group developed an action plan, coordinated efforts to obtain funding, ensured that Willow Creek was designated a priority area for DEQ, ODA, NRCS, EPA and others, conducted outreach efforts to pass on lessons learned to other basins with similar problems. and managed a water quality monitoring program to test for the effectiveness of conservation efforts.

Entities that have participated in this effort include:

*Private landowners*

*OWEB*

*BOR*

*Western Watersheds*

*OSU Extension/Experiment Station*

*BLM*

*Pheasants Forever*

*Malheur County*

*ODFW*

*ODA*

*Malheur Watershed Council*

*Malheur County SWCD*

*NRCS*

*FSA*

*Burns Paiute Tribe*

*Confederated Tribes of the Umatilla Indian Reservation*

*DEQ*

*EPA*

*Vale Oregon Irrigation District*

*Orchard Irrigation District*

**10. Consultations/communications with affected Indian tribes and with the Legislative Commission on Indian Services regarding the project.**

**Has the Legislative Commission on Indian Services been contacted to identify tribes affected by the project?**

**Yes**     **No**

**Please provide correspondence as an attachment to this application.**

*Attachment C*

**Has there been consultation/communications with affected Indian tribes?**

Yes     No

**Please provide a description of consultation/communication that occurred and attach documents to this application if applicable.**

We have contacted the Burn Paiute Tribe about this specific proposal. They have been a partner in our conservation efforts for a long time and have written a letter of support. See Attachment E The tribal cultural resource directors identified by LCIS have been notified by email. See Attachment C. And because of all our previous work in the area with federal grant money, we have already conducted a complete cultural resource survey for the entire irrigation district. See Attachment D.

**11. Provide a description of:**

**(a) Required local, state and/or federal permits and/or authorizations for project implementation that have been secured to date. Please attach secured permits/authorizations to the application.**

Our proposed project consists of laying pipe in existing dirt lateral irrigation canals. We will not disturb any existing wetlands or impact creeks or rivers. Thus, we are confident that we will not require any permits to conduct this project. There are some seepage areas along the laterals and piping them will prevent the seepage. We believe these wet areas along the laterals are not classified as jurisdictional wetlands requiring permitting under the Clean Water Act or the state's fill and removal statutes. However, if funded we will conduct further investigation and permitting will be coordinated with DSL and the Army Corps of Engineers.

**(b) Required local, state and/or federal permits and/or authorizations that will be secured in the future to implement the project. Describe efforts to date in securing these permits and/or authorizations.**

*See answer to 11(a)*

**12. Provide any additional supplemental materials to demonstrate ability to implement the project. Examples include project plans and specifications, engineering details and water availability analysis. List documents in this space and attach to application.**

Don Curtis, retired BLM engineer with more than 35 years of experience, will complete preliminary designs. Each pipeline will be designed to accommodate maximum flows and pressures. The District, with Mr. Curtis and Reclamation's help, has successfully installed miles of pipe with little trouble. Each piped lateral will have to meet BOR and the Irrigation Districts' specifications. With BOR funding Mr. Curtis has developed the engineering specifications for all the laterals in Willow Creek including these last ones we are requesting funding from the Water Resources Department.

His specifications are as follows:

Surge valves	Tees and Reducers	Z-pipe assemblies
86	49	20

Pipe Size (inches)		Feet
6		900
8		12500
10		1100
12		600
15		300
18		6000

Total            21400



## 18. Seasonally Varying Flow Prescription

**For all storage projects:** If you answered “yes” to any of the questions posed in a-c above the project will need a **Seasonally Varying Flow (SVF) Prescription**, determining the duration, timing, frequency and volume of flows (including ecological baseflow), necessary for protection and maintenance of biological, ecological, and physical functions outside of the official irrigation season. The initial step in defining the SVF for the project is to schedule an SVF meeting with OWRD. For assistance and more information please contact Water Resources Grant Administrator Jon Unger at (503) 986-0869.

Identify whether the storage project will need a Seasonally Varying Flow Prescription.

Yes     No     Uncertain

## VI. Environmental Public Benefit for Conservation Projects Dedicating Water Instream (if not a conservation project continue to Section VII)

Identify percentage of conserved water to be dedicated to instream use.     N/A

%

*Note: Any project that conserves water and dedicates at least 25% of the conserved water quantity to instream use will automatically receive a median score in the environmental public benefit category with the opportunity to demonstrate additional environmental benefit to increase the score. Water dedicated to instream use must be permanently placed instream and protected by the Oregon Water Resources Department.*

## VII. Financial Information

**For Loan Applicants** – Since loan applications do not require cost match, loan applicants who do not offer a cost match need not complete Section A and can disregard the match funding columns in Sections B and C. Budget and costs of key tasks must be identified in sections B & C. Loan applicants will be required to provide additional financial information related to their ability to repay the loan. This request for information will take place after the scoring and ranking process for those projects that are recommended for funding.

**For Grant Applicants** – Complete Sections A, B and C.

**Section A – Cost Match Information**

Applicants must demonstrate a minimum 25% funding match based on the total project cost. The match may include: a) applicant funds or secured funding commitment from other sources; b) pending funding commitment from other sources; and/or c) the value of in-kind labor, equipment rental, and materials essential to the project. For secured funding, the applicant must attach a funding award letter from the match funding source that specifically mentions the dollar amount shown in the “Amount/Dollar Value” column. For pending resources, documentation showing a request for the matching funds must accompany the application. Funds expended prior to grant agreement are not reimbursable nor do they qualify for cost match without prior authorization by the Department.

<p><b>In the Type column below matching funds may include:</b></p>	<p><b>In the Status column below matching funds may have the following status:</b></p>
<ul style="list-style-type: none"> <li>• <b>Cash</b> - Cash is direct expenditures made in support of the feasibility study by the applicant or partner*.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Secured</b> - Funding commitments already secured from other sources.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>In-Kind</b> - The value of in-kind labor, equipment rental and materials essential to the feasibility study provided by the applicant or partner.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Pending</b> - Pending commitments of funding from other sources. In such instances, Department funding will not be released prior to securing a commitment of the funds from other sources. Pending commitments of the funding must be secured within 12 months from the date of the award.</li> </ul>

\* “Partner” means a non-governmental or governmental person or entity that has committed funding, expertise, materials, labor, or other assistance to a proposed project planning study. OAR 690-600-0010.

<p><b>Match Funding Source</b> (if in-kind, briefly describe the nature of the contribution)</p>	<p><b>Type</b> (✓ One)</p>	<p><b>Status</b> (✓ One)</p>	<p><b>Amount/ Dollar Value</b></p>	<p><b>Date Match Funds Available</b> (Month/Year)</p>
<p><i>Vale Oregon Irrigation District -- providing labor and equipment for installing pipelines</i></p>	<input type="checkbox"/> cash <input checked="" type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	<p>\$284,788</p>	<p>September 16</p>
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		

## Section B – Project Budget

Please provide a line item budget for the project; see example below. If significant additional detail is needed please complete separately and attach to completed application.

Line Items	Number of Units* (e.g. # of Hours)	Unit Cost (e.g. hourly rate)	In-Kind Match	Cash Match Funds	OWRD Funds	Total Cost
Materials	Attachment B				\$485,555	\$485,555
Contractual/Services	Attachment B		\$284,788		\$5,000	\$289,788
Staff Salary/Benefits						
Equipment (must be approved)						
Supplies						
Other: Project management and administration @2%					\$9,800	\$9,800
<b>Total for Section B</b>			\$284,788		\$500,355	\$785,143
<b>Percentage for Section B</b>			36%		64%	100%

\* Note: "Unit" should be per "hour" or "day" not per "project" or "contract." Number of Units x Unit Costs = Total Cost

## Section C – Key Task Cost

Complete Section C below. Key Tasks identified in Section C should be the same as the Key Tasks in Section IV(4) above.

Project Key Tasks	In-Kind Match	Cash Match Funds	OWRD Funds	Total Cost
Pipeline Materials				
Solar units to power debris screens (13 units)			\$26,000	\$26,000
Debris screens (13 units)			\$52,000	\$52,000
Cement headwalls (12)			\$60,000	\$60,000
pipe (21,400 feet)			\$169,377	\$169,377
Fittings			\$24,500	\$24,500
valves			\$132,000	\$132,000
Project management and administration < 2 % (280 hrs @ \$35/hr)			\$9,800	\$9,800
Final engineering (100 hrs @ \$50/hr)			\$5,000	\$5,000
Installing pipeline				
VOID salaries and wages	\$176,844			\$176,844
Equipment				
Excavator	\$50,550			\$50,550
Backhoe	\$11,246			\$11,246
Cat	\$33,712			\$33,712
Trucks, low boy and Hyster, truck and trailer	\$12,438			\$12,438
see attachment B for more detail				
<b>Total for Section C</b>		\$284,788	\$500,355	\$785,143