

OROVILLE-TONASKET IRRIGATION DISTRICT

Water and Energy Efficiency Grant

Water Valve Modernization Project

Technical Proposal



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1	May 2024 OTID Board Meeting Minutes and Summary of Emergency and Ongoing Irrigation Infrastructure Project Status
2	Specification Sheets for Selected Water Valve Equipment
3	2024 OTID Irrigated Lands Mapbook Evaluation
4	Letters of Support

1 Technical Proposal and Evaluation Criteria

1.1 Water Valve Modernization Project Executive Summary

Date: Nov 13, 2024

Category A Applicant: Oroville-Tonasket Irrigation District (OTID); Within US Bureau of Reclamation's (Reclamation) WaterSMART criteria, OTID is a Category A applicant as it is a water district with water delivery authority.

Location: Okanogan County, Washington

Project Summary:

Oroville Tonasket Irrigation District (OTID or the District) seeks funding to upgrade up to 254 outdated water flow plates in its Cordell and Crater Lake water Service Areas (Service Areas) with more modern flow valves. OTID is located in Okanogan County in north central Washington just miles south of the Canadian border and serves water to 1,500 irrigation customers across 10,000 acres. The Cordell and Crater Lake Service Areas are 1,063 acres and 707, respectively – for a combined acreage of 1,770. OTID is a former Reclamation district, transitioning in the 1990s with a title transfer to the quasi-municipal special purpose district it is today.

The current flow control orifice plates at these turnouts, installed in the 1980s, are only approximately 50% efficient – equating to significant water loss to seepage and leaks at every turnout. Modernizing these to state-of-the-science water valves would improve efficiency throughout the system, equating to an **estimated total annual water savings of 2,671 acre-feet (including 1,978.48 acre-feet consumptive use (CU)) and an associated energy savings of 1.8 million KWh, which is equivalent to 1,257 metric tons of CO₂.**

OTID established the state's first regional water bank during the 2019 Statewide drought. Now, with back-to-back years of drought emergencies in 2023 and 2024, OTID is proactively implementing additional water conservation planning across its infrastructure. OTID sources its irrigation supply from the Okanogan River, which holds Endangered Species Act (ESA)-listed fish habitat already threatened by low flows and warmer temperatures in the region. With this current water valve modernization project, combined with associated planned infrastructure modernization and deferred maintenance projects (e.g., upgrading its surface water pump stations to increase flow control and to decrease wear and tear from high silt loads in the Okanogan River), an estimated total of 10,000 acre-feet of water could be left instream to benefit fish and flows and out-of-stream uses to support the local economy.

Estimated Time to Complete: 2 years

Estimated Completion Date: October 2027

The proposed OTID water valve modernization project is not located on a Federal facility.

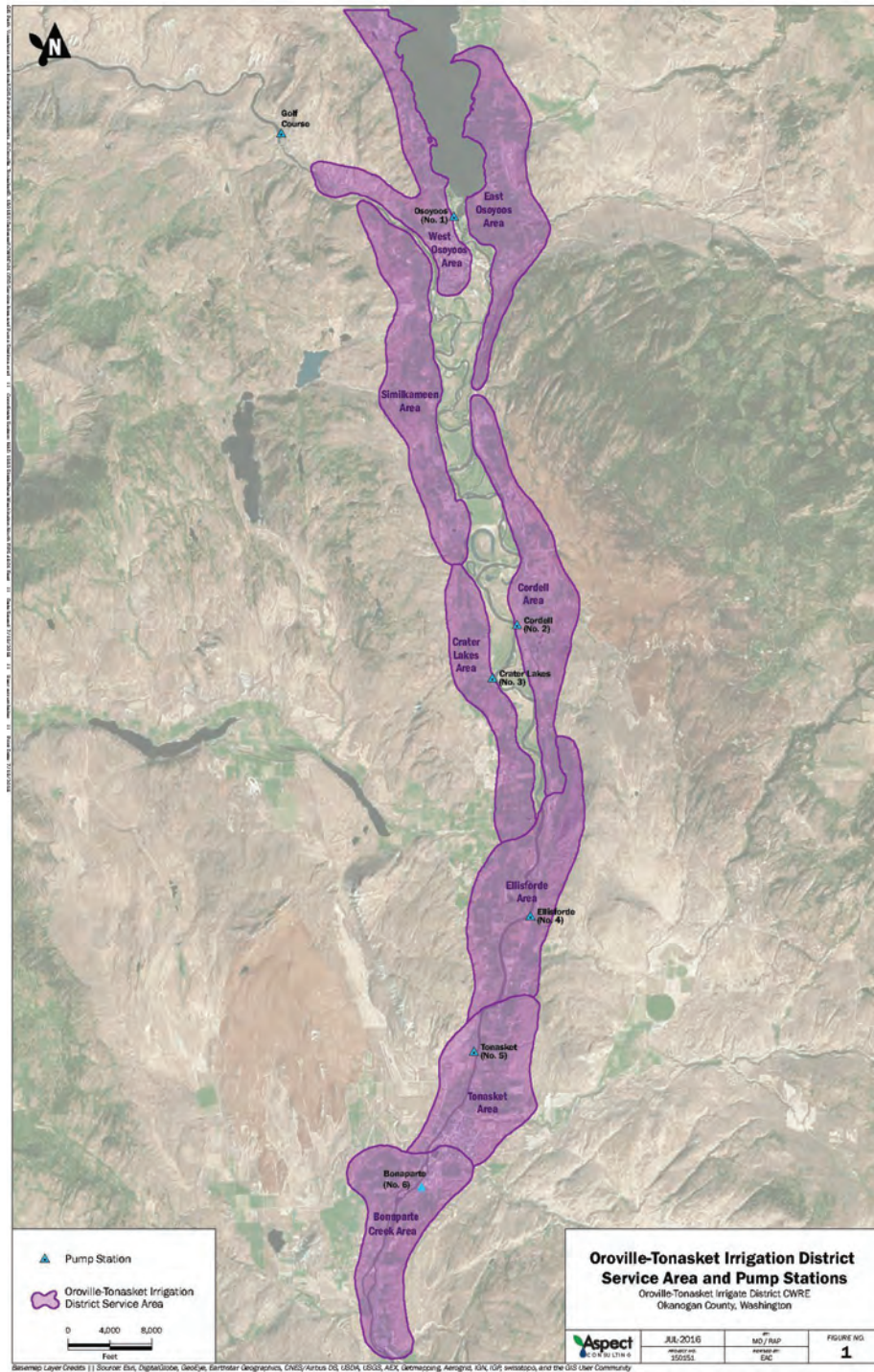
1.2 Project Location

Oroville-Tonasket Irrigation District (OTID) provides irrigation water to approximately 10,000 acres in northern Okanogan County, Washington. The irrigation district extends from the Canadian border south about 25 miles on both sides of Osoyoos Lake and the Okanogan River. In addition to delivering water to its members, OTID operates the Zosel Dam, which controls lake Osoyoos levels and downstream flows on the Okanogan River, which is owned by the Washington State Department of Ecology and co-managed by US and Canadian agencies as part of the International Joint Commission (IJC).

OTID's existing irrigation infrastructure consists of two diversion points from Lake Osoyoos, five diversion points from the Okanogan River below its confluence with the Similkameen River, and a diversion point from the Similkameen River in northeastern Washington (Figure 1). The eight pump stations deliver water under pressure to a golf course and seven Service Areas, including regulating tanks, reservoirs, and pressurized transmission and lateral pipelines. The pump stations feed into several co-managed sub-Service Areas including East Osoyoos, West Osoyoos, Similkameen, Cordell, Crater Lakes, Ellisforde, Tonasket, and Bonaparte. Water is delivered to customer turnouts via a piped and pressurized system. There are numerous application methods within the District, including hand and wheel line, with under tree and over tree sprinklers being the primary method of irrigation.

The OTID grant proposal is focused on the Cordell and Crater Lakes pump station Service Areas located along the mainstem of the Okanogan River

Figure 1. Area Map



1.3 Project Background and Description



Project Background

OTID provides irrigation water to approximately 10,000 acres in northern Okanogan County, Washington. The irrigation district extends from the Canadian border south about 25 miles on both sides of Osoyoos Lake and the Okanogan River.

Primary crops in the District's total Service Area are apples, cherries, pears, and alfalfa hay. The economic impact from OTID agricultural operations is estimated to be \$50,000,000 annually, accounting both for the value of crops help make possible approximately 5,000 full-time and seasonal agricultural workers in the community. The Oroville Tonasket area is an economically depressed region of Washington State and OTID's water service drives the regional agricultural economy.

OTID and its associated conveyance system was initially established and constructed in 1916 as a U.S. Bureau of Reclamation irrigation district and consisted of a principal gravity diversion from the Similkameen River at a point two miles downstream from Nighthawk; eight pump stations to divert water from the Okanogan River; 14.5 miles of unlined canal; 18.5 miles of concrete-lined canal; almost 17 miles of wood flume; and approximately 100 miles of wood, concrete, steel, and plastic pipe.¹

Over time the infrastructure deteriorated and was repeatedly damaged by slides and flooding. As a result, Reclamation subsequently designed and built a pressurized water delivery system to supply irrigated land within the District. In the late 1990s, Reclamation transferred ownership and management via a title transfer to OTID and the District is now managed as a quasi-municipal special purpose district (as defined by Washington state) with water delivery authority to approximately 1,500 members.

The District's present irrigation system consists of two diversion points from Lake Osoyoos, five diversion points from the Okanogan River below its confluence with the Similkameen River, and retention of the Similkameen River diversion. Currently, seven pump stations deliver water under pressure to eight Service Areas (see Figure 1; summarized below) including regulating tanks, reservoirs, and pressurized transmission and lateral pipelines:

¹ <https://irrigationleadermagazine.com/oroville-tonaskets-drought-year-water-bank/>

- Osoyoos (East Osoyoos, West Osoyoos, and Dairy Point)
- Similkameen
- Cordell
- Crater Lakes
- Ellisforde
- Tonasket
- Bonaparte
- Golf Course

Construction of the current system was completed in three phases between 1979 and 1987 and, as a result, the entire OTID conveyance system is fully pressurized. All OTID pump stations are metered, in adherence with Washington Administrative Code (WAC)², with Badger Venturi flow meters with Partlow VersaChart recorders and ModuLogger data. The flow meters record both instantaneous and cumulative water-use data.



Photo A. Cordell Pump Station



Photo B. Crater Lake Pump Station



Photo C. Cordell Meter and Data Logger



Photo D. Crater Lake Meter and Data Logger

² <https://apps.leg.wa.gov/wac/default.aspx?cite=173-173>

Planned Irrigation Infrastructure Upgrades

The water valve modernization project proposed in this application is one of several significant infrastructure upgrades OTID is pursuing to modernize the 40-year-old irrigation system as a whole. The current and planned upgrades and associated cost estimates include:

In Progress

- **2024 Emergency Repair of Ellisforde Pipe Break - \$600,000.** In April 2024, the District discovered a pipe failure at its Ellisforde pumping station 24 feet below river level in the Okanogan River. The Ellisforde pipe is the mainline for 600+ acres (estimated annual Tree Fruit revenue from this Service Area is over \$8M). The cost estimate for repair is approximately \$600,000, which the District is funding solely with District funds so it can be repaired and back online for the 2025 irrigation season. Attachment 1 shows a preliminary evaluation by a local engineering firm with preliminary cost estimates.
- **Cordell and Crater Lake Pump Station Upgrades - \$16,000,000.** The Crater and Cordell pump stations are both over 40-years-old and need to be upgraded. They suffer frequent shutdowns in recent years (from silting issues in the Okanogan River, which is their source) and limit water service and impact agricultural delivery. The proposed upgrade would add desilting basins and convert the existing high-head pumps to low-head pumps that pump into basin as well as add new high-head pumps that, with the new desilting basin filtering process, would pump cleaner water providing long term stability for our growers and infrastructure. The two pumping plants are through 30% Design with a preliminary cost estimate of \$8 M to upgrade each plant, \$16M for both.
- **Cordell and Crater Lake Service Areas Water Valve Modernization Project - \$985,600.** The subject of this grant application.

Future Projects

- **Remaining OTID Service Area Water Valve Modernization Project - \$TBD.** Following Cordell and Crater Lake water valve modernizations, the District plans to modernize all of its water valves (currently operating with the same old and extremely inefficient water flow controls like the Cordell and Crater Lake valves). OTID plans to pursue WaterSMART funding for those future water savings projects through the Water Energy and Efficiency Grant (WEEG) program.

Given the variety of emergency and significant infrastructure upgrade needs and associated costs, the District seeks assistance from WaterSMART funding to meet its water service goals while providing more sustainable, long-term water service to its members

Project Description

The project will install 254 modern water valves on existing turnouts throughout OTID's Cordell and Crater Lake Service Areas. The two water valve types selected for installation are:

- **American Granby-made Dole model flow control valves.** These valves are rated to prevent over-pumping of low yield wells; are self-cleaning and designed to deliver constant volume of water over wide pressure drop range; flow rated maintained within +/- 15% up to a pressure drop of 125 psi; have a maximum system pressure 200 psi.



- **Griswold Controls-made Wafer model flow control valves.** These stainless-steel flow limiting cartridge has a spring loaded cup that dynamically absorbs pressure fluctuations. These fluctuations in pressure, within a given pressure differential control range, do not change the flow through the valve, therefore the flow is controlled to within +/- 5% of the designed flow.



These were selected based on OTID infrastructure needs and OTID staff's professional experience with irrigation flow controls. Specification sheets for each (as well as for associated Fresno "Butterfly Valves"³ that will be fitted with each of the two water valves) are included as Attachment 2.

The project is expected to be completed over the two-year period of performance from October 2025 – October 2027 with the following four main phases shown in Table 1:

³ <https://www.fresnovalves.com/prod/sub/6/19/>

Table 1. Valve Replacement/Modernization Project Phases

Phase	Actions and Deliverables
1. Project Planning, Equipment Purchase, and Staging	Purchasing Water Valves and Completing Project Work Plan
2. Crater Lakes Water Valve Installation	Installing 100 Modern Water Valves + Progress Report
3. Cordell Water Valve Installation	Installing 154 Modern Water Valves + Progress Report
4 – Final Reporting and Performance Monitoring	Performance monitoring follow valve installation at beginning and end of irrigation season, with comparison to October 2024 baseline measurements. Produce summary report

Phase 1. Project Planning, Equipment Purchase, and Staging. Following award and notice to proceed, OTID will prepare a detailed Project Work Plan that will list each task and associated deliverables, materials, and equipment needed to complete within each of the two construction windows. Task 1 will also include final selection and procurement of materials and supplies, including potential long lead time flow control valves.

Phases 2 and 3. Valve Installation at the Crater Lakes and Cordell Service Areas. Because the project involves replacing existing flow controls at each of the active turnouts, much of the work will need to be completed during OTID’s seasonal downtime (November to March) to avoid service interruption to its growers. The Crater Lake Service Area (Phase 2) will proceed first because of the lower number of turnouts, allowing time for lessons learned before Phase 3 begins. Valve installation will be performed by OTID staff and, for each turnout, assumes up to two full days (16 hours) to evaluate existing vault, replace(if needed), mobilize and operate machinery, fabricate and weld new valves and associated flanges and piping and generally follow the following valve modernization process for each turnout:

- Installing Butterfly valves and digging up existing vault to 4- to 5-foot depth and, following visual assessment of existing vault, replace as needed in parallel with installing the new Dole- or Grisold-style valves.
 - Butterfly valves are quarter-turn valves that use a circular disc to rotate through 90° to control flow.



- Cut original welded pipe and weld new flanges and flow valves.
- Reconnect new piping and miscellaneous fittings.
- Fix leaks (as needed).

Both Dole and two sizes of Griswold style flow controls values are anticipated to be used depending on size of each individual turnout (see Table 2. for anticipated valve diameter sizes needed bases on OTID staff assessment of current water control dimensions throughout Cordell and Crater Lake Service Areas).

Table 2 – Phased Project Implementation

Project Phase	Service Area	Style and Number of Flow Controls		
		Dole (1-inch)	Griswold (3-inch)	Griswold (6-inch)
1	Crater Lakes	34	21	45
2	Cordell	79	53	22
Total (254 New Valves)		113	74	67

For each Crater Lake and Cordell Service Area Installation phases, OTID will prepare a summary report to confirm installation progress and identify any installation issues.

Phase 4. Final Reporting and Performance Monitoring. Phase 4 includes post-construction confirmation testing of the upgraded flow control valves at a statistically significant number of turnouts and final project reporting. See Criterion A for more details on the baseline data OTID is using to confirm water savings.

1.4 Evaluation Criteria

Criterion A – Quantifiable Water Savings (25 points)

Up to 25 points may be awarded for this criterion. This criterion prioritizes projects that will conserve water and improve water use efficiency, supporting the goals of E.O. 14008. Points will be allocated based on the quantifiable water savings expected as a result of the project. Points will be allocated to give greater consideration to projects that are expected to result in more significant water savings.

All applicants should be sure to:

1) Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.

Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.

OTID’s current, fully pressurized delivery system was designed to provide an average instantaneous quantity to each farm turn-out of approximately 7.5 gallons per minute (gpm) per acre (or about 0.022 cfs).⁴

Since its inception, the primary crop within OTID has been tree fruit, with some minor pasture and hay. Of the tree fruit crops, apples have been the most widely grown crop. Historical crop reports indicate that over 77 percent of the OTID Service Area was planted in apple orchards, with approximately 9 percent being planted in cherries and stone fruit, with the balance being primarily hay pasture. The application methods for irrigation water within the District are varied depending on tree or pasture; however, the primary application methods are solid set undertree (and overtree) sprinklers.

Since construction was completed and peak water use was documented in about 1994, local economic conditions have resulted in a constriction of the local agricultural economy resulting in fallowed ground. To quantify impacts, OTID maintains an aerial photo assessment of the entire district (performed in 2017 and again in 2024), including delineation of all irrigated lands performed (Aspect 2024; see Attachment 3). A current summary of this analysis is provided on Table 3 below. Results of the aerial mapping indicate that about 7,693 acres are currently irrigated by the District. This implies that up to about 2,130 acres have been fallowed throughout the District.

Table 3. 2017 vs. 2024 Irrigated Acres Aerial Imagery Delineation

Service Area	Total Authorized	Irrigated (2017)	Irrigated (2024)
East Osoyoos	3,800.00	2,786.21	3,038.02
West Osoyoos			
Similkameen	1,519.00	955.15	1,063.55
Cordell			
Crater Lakes	899.00	703.15	707.59
Ellisforde	1,402.00	1,464.18	1,339.92
Tonasket	1,137.00	771.77	760.70
Bonaparte	1,066.00	786.76	782.78
Total	9,823.00	7,467.22	7,692.56

Formation of the OTID Water Bank

The OTID water bank was permitted in 2019⁵ to help support instream flows and provide emergency mitigation to interruptible water rights in the Okanogan River Basin (WRIA 49)

⁴ Nine gpm is assumed as the instantaneous quantity at the river intake, which accounts for conveyance loss to seepage and the actual on-farm delivery is authorized to be 7.5 gpm.

⁵ <https://www.aspectconsulting.com/otidwaterbank>

during a State-declared drought, where as little as 58 percent of normal water supplies were predicted to be available. The water bank was also designed to serve several important long-term functions. Agriculture is a strong value in the community and is a significant pillar of the local economy. The water bank not only protects OTID's water rights from relinquishment due to nonuse, but will provide supplemental revenue to OTID through long-term leases and/or water service contracts of mitigated water right permits. The additional revenue allows OTID to keep its annual assessments low, which will in turn help local growers remain viable in the highly competitive regional fruit industry. In the future, when increased agricultural water demand returns, OTID will retain long-term water right authority to support the rebuilding of agriculture and other closely-related purposes of use in the region. The water bank also provides for instream flow benefits, including to Endangered Species Act (ESA)-listed Upper Columbia steelhead and summer/fall run Chinook salmon.

OTID Current Water Demands

This proposal is specific to the Cordell and Crater Lakes Service Areas. Within these areas, nearly 647 acres have been fallowed.

The Washington State Department of Ecology uses various estimation methods such as the Washington Irrigation Guide (WIG) to estimate the crop irrigation requirement (CIR). The WIG data show the estimated average amount of water required by a crop above the portion of the requirement that might be met by antecedent moisture in the root zone under average climatic conditions (i.e., the amount of water a crop needs in excess of rainfall). Based on information provided in the WIG, the CIR for the primary indicator fruit grown in the District, apples with cover near Omak (the closest WIG station to OTID), is 2.64 feet per acre. For reference, the CIR for other crops grown in the District include cherries with cover (2.74 feet/acre), pears with cover (2.46 feet/acre), apricots with cover (2.54 feet/acre), and pasture (2.24 feet/acre).

As instructed in Washington State Department of Ecology Guidance 1210, to determine the application efficiency (Ea) of irrigation within OTID the CIR (2.64 feet per acre) was divided by the measured and certified water duty (4.13 feet per acre).⁶ This method found a 63.9 percent Ea. This project-specific Ea is within the range of 60 to 85 percent presented in Guidance 1210. The water duty, or total irrigation requirement (TIR), for the District was calculated to be 4.13 feet/acre (CIR/Ea) during establishment of the water bank. Similarly, the total authorized instantaneous quantity is specified at about 0.022 cfs per acre.

Based on these calculations, the cumulative annual quantity (Qa) necessary for the continued irrigation of land within the Cordell and Crater Lake Service Areas is determined by multiplying the total acreage (1,771 acres) by the TIR (4.13 feet/acre), equaling 7,314.81 acre-feet. Similarly, the instantaneous rate (Qi) is calculated by multiplying the acreage by the calculated water duty of 0.022 cfs/acre, equaling 38.97 cfs.

For comparison, OTID's water right authorization for the two subject Service Areas is 9,986.34 acre-feet and about 53.20 cfs. That implies that at least 2,671.53 (9,986.34 – 7,314.81) acre-feet

⁶ <https://apps.wa.gov/ecology/docs/WaterRights/wrwebpdf/guid1210.pdf>

is available to be conserved with the proposed project. This does not account for additional on-farm irrigation efficiencies.

In determining percent of consumptive use (%CU), 10 percent was added to the calculated Ea to account for evaporative losses (%Evap), which is the average evaporative loss of undertree sprinklers per Guidance 1210 Table 1 (Ecology, 2005). This method resulted in a consumptive use of 73.9 %CU. However, in April where no CIR is assigned, the consumptive use was calculated using only the 10% Evap to the total water use (water in April is applied for start-up, spraying, and frost protection). Monthly consumptive use for irrigation was then calculated by multiplying the monthly TIR by the %CU and the area irrigated under the subject Service Areas as shown in Table 4 below. In total, it is estimated that 1,978.48 acre-feet (CU) will be conserved with the proposed project.

Table 4 – Consumptive Use Water Savings

	Unit	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Average Qi	cfs	0.08	2.80	7.87	9.83	7.14	4.61	0.29	
Qa	afy	4.97	172.10	467.66	603.59	438.35	273.74	18.08	1,978.48

Individual Turnout Flow Control

With the passage of time, individual 40+-year-old orifice plates used as flow controls on each of the farm-specific turnouts have deteriorated making control of water difficult and conservation of water nearly impossible. Within the two Service Areas, an estimated 254 individual turnouts are present.

Photo F. Example of 1980s-era Orifice/Restrictor Plate from Cordell and Crater Lake Service Areas



During the 2024 irrigation season, OTID flow tested a number of turnouts.⁷ Results of the flow testing was compared to district’s assessments and the amount of acreage served. Testing indicates that the nearly 40-yearold orifice plates have significantly deteriorated resulting in up to nearly two times the amount of water being delivered to the property. From the nine orifice plates tested in the Cordell (“CO” Turnout ID) and Crate Lake (“CL” Turnout ID) Service Area, the average water waste was 53%; at one turnout, the amount of flow was over 170 gpm. Table 5 below presents the testing information.

Table 5. October 2024 Orifice Plate Flow Test

Turnout ID	Acreage	Flowrate (gpm)		Water Savings in gpm	Percent Increase
		Assessed Flow	Measured Flow (2024)		
CO2-2466L	23.42	210.75	257.5	46.7	22%
CO2B-1067L	6.17	55.5	95	39.5	71%
CO2C-1184L	18.83	169.5	251	81.5	48%
CO2I-1374R	56.09	504.83	675	170.1	34%
CL1-4615R-01	16.45	148.05	247	98.9	67%
CL1-3236R	32.83	295.5	447	151.5	51%

⁷ As detailed in the Project Background section previously, All OTID pump stations are metered with Badger Venturi flow meters with Partlow VersaChart recorders and ModuLogger data. The flow meters record both instantaneous and cumulative water-use data.

CL1-2868R	12.75	114.75	228	113.2	99%
CL2-2831L	8.79	79.13	140	60.8	77%
CL2-3984L-02	18.83	169.5	195	25.5	15%
Average % Water Waste					53%

Total water delivery to each Service Area is also supported by the direct river diversion records for the Cordell and Crater Lakes pumping plants from the Okanogan River, which indicated diversions of 5,774 and 3,068 acre-feet for the Cordell and Carter Lake diversion, respectively. Note that 2024 was the second State-declared drought year in a row⁸ and considered to be a below average diversion year. Without proper flow control and back pressure in the conveyance system, OTID is unable to leave water instream while still delivering the pressure required at each individual turnout to meet grower irrigation demands.

Quantifying Water Savings from Current Orifice Plates to Modern Flow Valves

Comparing the October 2024 baseline measurement, averaging 53% in water waste to the Dole and Griswold specifications – ranging from 5% (Griswold)– 15% (Dole valves) of the design flow – it’s anticipated that modernizing the 254 flow valves will decrease water waste per turnout significantly – by as much as 45%.

Upgrades from the individual orifice plates to modern automatic flow limiting valve will allow the District to regain flow control across the two Service Areas to the originally designed rates and right-size to current irrigation demand, resulting in over 2,671 acre-feet of reliable water savings each irrigation season.

2) Describe current losses. Please explain where the water that will be conserved is currently going and how it is being used. Consider the following:

- *Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?*
- *If known, please explain how current losses are being used. For example, are current losses returning to the system for use by others? Are current losses entering an impaired groundwater table becoming unsuitable for future use?*
- *Are there any known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?*

The proposed project will result in better flow control and delivery across the Cordell and Crater Lake Service Areas. Replacement and upgrade of the antiquated orifice plates will allow for precise delivery of water to each of the 254 individual turnouts.

The current orifice plates result in over delivery of irrigation water at each farm – ranging from over delivery by on average of 54% based on recent baseline monitoring (see Table 5 above) and as high as 99%. Losses resulting in over delivery lead to increased infiltration and subsurface return flow and potential for direct farm runoff with associated pesticides impacting local surface

⁸ <https://ecology.wa.gov/about-us/who-we-are/news/2024-news-stories/april-16-drought-declaration>

water quality. Water that is not intercepted by native and non-native vegetation is expected to return back to the Okanogan River. Due to the complex local hydrogeology, the timing and location of return flow is uncertain. However, a significant delay in return flow is expected, often outside a location downstream. This can often result in significant impacts on river flows during late summer periods of critical low flows and fish mitigation window(s), especially during drought conditions. Return flow is not expected to be a significant contributor of local groundwater in the alluvial aquifer.

Excess irrigation deliveries result in increased consumptive losses through irrigation (often solid set sprinklers) and can lead to numerous agronomic issues, including leaching and excessive fertilizer and pesticide use, reduced crop yield, nutrient leaching from the soil profile, increase in weeds, root rot and an increase in disease susceptibility.

No economic or environmental benefits associated with the current losses have been identified.

3) Describe the support/documentation of estimated water savings. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Note: Projects that do not provide sufficient supporting detail/calculations may not receive credit under this section. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal.

In addition, note: The use of visual observations alone to calculate water savings, without additional documentation/data, are not sufficient to receive credit under this section. Further, the water savings must be the result of reducing or eliminating a current, ongoing loss, not the result of an expected future loss.

Methodology and summary of estimated water savings is provided in the previous section.

4) Please address the following questions according to the type of infrastructure improvement you are proposing for funding. See Appendix A: Benefit Quantification and Performance Measure Guidance for additional guidance on quantifying water savings.

Irrigation Flow Measurement: *Irrigation flow measurement improvements can provide water savings when improved measurement accuracy results in reduced spills and over-deliveries to irrigators. Applicants proposing municipal metering projects should address:*

- a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.*
- b. Have current operational losses been determined? If water savings are based on a reduction of spills, please provide support for the amount of water currently being lost to spills.*
- c. Are flows currently measured at proposed sites and if so, what is the accuracy of existing devices? How has the existing measurement accuracy been established?*
- d. Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.*
- e. Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?*

f. How will actual water savings be verified upon completion of the project?

Methodology and summary of proposed irrigation flow measurement benefits is provided in the previous section. Performance measuring plan is provided in Section 1.5

Criterion B – Renewable Energy (20 or 6 points)

Up to 20 points may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency and reduced greenhouse gas emissions.

For projects that include constructing or installing renewable energy components, please respond to Subcriterion B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery. If the project does not implement a renewable energy project but will increase energy efficiency, please respond to Subcriterion B.2. Increasing Energy Efficiency in Water Management. If the project has separate components that will result in both implementing a renewable energy project and increasing energy efficiency, an applicant may respond to both.

E.1.2.2 Subcriterion B.2—Increasing Energy Efficiency in Water Management

Up to 6 points may be awarded for projects that address energy demands and reduce greenhouse gas emissions by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversions.

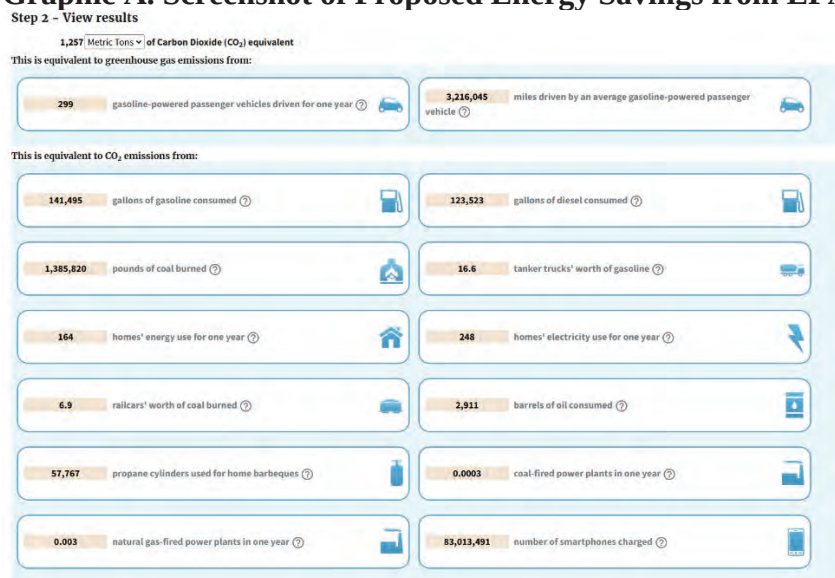
Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

- If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.*
- How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions?*
- If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?*
- Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.*
- Does the calculation include any energy required to treat the water, if applicable?*
- Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.*
- Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).*

In 2024, OTID diverted a total of 8,842 acre-feet from the Cordell and Crader Lake pumping stations, using a total annual electrical demand of over 4.0 and 2.1 million KWh's for the Cordell and Crater Lake diversions, respectively. These data were obtained from Bonneville Power Administration's monthly usage reports provided to the District. This implies an average power demand of 701 and 671 KWh per acre-foot for the Cordell and Crater Lake diversions, respectively, and a total weighted average of about 691 KWh per acre-foot. Considering an expected water savings of 2,671 acre-feet, a total of 1.8 million KWh will be conserved.

Using the on-line United States Environmental Protection Agency greenhouse gas equivalencies calculator (<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>), **the savings of 1.8 million KWh is equivalent to 1,257 metric tons of CO₂.**

Graphic A. Screenshot of Proposed Energy Savings from EPA Greenhouse Gas Calculator



Criterion C – Other Project Benefits (15 points)

Up to **15 points** may be awarded under this criterion. This criterion prioritizes projects that address a specific water and/or energy concern(s), including enhancing drought resilience and sustainability, addressing the current and future impacts of climate change, and providing ecological benefits.

Resilience and Sustainability Benefits. Will the project address a specific water and/or energy sustainability concern? Please address the following:

- Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:

o Describe recent, existing, or potential drought or water scarcity conditions in the project area.

o Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?

o Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).

- Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.*

- Please describe how the project will directly address the concern(s) stated above.*

- Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?*

- Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

o Indicate the quantity of conserved water that will be used for the intended purpose(s).

o Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.

Will the project assist States and water users in complying with interstate compacts?

- Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

Resilience and Sustainability Benefits

In 2019, a drought emergency was declared by the state in the Methow, Okanogan, and upper Yakima River watersheds, which was later expanded to include a total of 27 watersheds. As a result, with the Okanogan receiving an estimated 58 percent of normal water allotment, curtailment went into effect for a variety of agricultural – both small and large – in the watershed. As a result, OTID worked with the state Department of Ecology to form the state’s largest (at the time) water bank to help regional water users impacted by the drought. Since 2019, the Okanogan has seen three more state drought declarations⁹ – in 2021, 2023, and 2024.

OTID’s water bank can be used for mitigation throughout the mainstem Okanogan River Basin, with points of diversion on Lake Osoyoos (near the Canadian Border), Similkameen, and mainstem Okanogan River. Additionally, OTID operates existing infrastructure (Ecology-owned

⁹ A drought declaration means water supply is below 75% of average at some point. <https://ecology.wa.gov/water-shorelines/water-supply/water-availability/statewide-conditions/what-is-drought>

Zosel Dam) to retime irrigation water to mitigate for year-round consumptive use impacts. Therefore, the water right will mitigate in-time, in-place, and in-kind for impacts in the Okanogan River valley.

A key piece of Washington state's water banking framework is that the water rights are protected instream, while the consumptive use portion may be used for to mitigate a variety of out-of-stream uses including agricultural supply and domestic water use. The anticipated water savings connected to the water valve modernization project will help ensure vital surface water flows will be added to via water savings.

Ecological Benefits. *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that that result in ecological benefits, through this section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will provide ecosystem benefits, including the following:*

- Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).*
- Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels, recreational benefits, etc.).*
- Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?*
- Please describe any other ecosystem benefits as a direct result of the project.*

Climate Change: *E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.*

- Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?*

Ecological and Climate Change Benefits

The Okanogan River and OTID's proposed project area supports one of the last two remaining viable sockeye salmon populations in the Columbia River system. OTID's Service Area lies within Watershed Resource Inventory Area (WRIA) 49, which provides aquatic habitat for a diversity of anadromous and resident fish species, including ESA-listed Upper Columbia steelhead (*Oncorhynchus mykiss*) and summer/fall run Chinook salmon (*O. tshawytscha*). A large run of sockeye salmon (*O. nerka*) migrates through WRIA 49 to access spawning and rearing habitats in the Canadian portion of the Okanogan subbasin. Spring Chinook salmon were historically present in the

Okanogan system but have been extirpated since the 1930s by the combined effects of hydropower development, overfishing, and habitat degradation.

Fish species in the Okanogan basin, like salmon, are increasingly challenged by warming rivers from climate change and recurring drought conditions. In the 2019 drought year, U.S. Geological Survey staff measured water temperatures in the Okanogan River near Oroville above 22 degrees Celsius (71.6F). Salmon won't move up into the river when it gets too hot, referred to as a "thermal block."

Furthermore, fisheries biologist for the Colville Tribe said during the 2019 drought that steelhead eggs die if the river experiences five consecutive days of water temps greater than 20 degrees Celsius.¹⁰ Water savings from the proposed project and associated additional water left instream will benefit thermal refugia conditions critical to native fish species.



Okanogan River near Oroville, WA. [Source: US Forest Service](#)

A 2020 Watershed Management Plan¹¹ assessed and prioritized aquatic habitats in the WRIA 49 based on current habitat function and restoration potential for steelhead and Chinook salmon. The prioritization is based on modeling results for habitat and biological data collected from 2014-2017, the most recently completed 4-year monitoring cycle, and documented core production areas for steelhead and Chinook salmon. One of the highest priority subwatersheds for steelhead habitat restoration in WRIA 49 is the Similkameen River, which flows directly through the project area.

Project Area Instream Flow Rule

WRIA 49 has an instream flow rule in place governed by WAC 173-549, enacted on June 9, 1988, that established year-round minimum instream flows in four stream management units (three on the Okanogan River and one on the Similkameen River) and results in new water right appropriations provisioned to curtailment when instream flows are not met.

The instream flow rule established seasonal closures from May 1 to October 1 to water right appropriations on all perennial streams in WRIA 49, except those with established minimum instream flows (limited to the mainstem Okanogan and Similkameen Rivers). Instream flow rule restrictions apply to lakes and groundwater in continuity with the rivers and streams that are

¹⁰ <https://ecology.wa.gov/blog/june-2019/some-yakima-basin-irrigators-water-rationed-some>

¹¹ <https://apps.ecology.wa.gov/publications/documents/2411009.pdf>

subject to the rule. The rule also seasonally closes the Upper Okanogan stream management unit from June 15 through August 31 with the exception of single-domestic use and stockwater use.

The 2,5170 acre-feet of estimated water savings will enhance instream flows in the mainstem Okanogan River as well as the Similkameen River tributary, thus increasing resiliency to climate change and drought (as sought by Executive Order 14008) and adding significant ecological benefits to the region.

Criterion D—Disadvantaged Communities, Insular Areas, and Tribal Benefits (15 points)

Up to 15 points may be awarded based on the extent that the project demonstrates support for the Biden-Harris Administration’s priorities, including E.O. 14008: Tackling the Climate Crisis at Home and Abroad and the President’s memorandum, Tribal Consultation and Strengthening Nation-to-Nation Relationships.

Please address only those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the priorities listed, and whether the connection to the priority(ies) is well supported in the application.

E.1.4.1 Subcriterion D.1. Disadvantaged Communities

E.O. 14008 affirms the advancement of environmental justice for all through the development and funding of programs to invest in disadvantaged communities. This criterion, which is used to identify projects that advance the Justice 40 Initiative, includes all Federally recognized Tribes and Tribal entities, and any disadvantaged communities in insular areas (American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands) identified pursuant to the following criteria.

*• Please use the White House Council on Environmental Quality’s interactive Climate and Economic Justice Screening Tool (CEJST), available online at [Explore the map - Climate & Economic Justice Screening Tool \(screeningtool.geoplatform.gov/en/#17.59/36.63278/-105.181329\)](https://www.ejscreeningtool.gov/en/#17.59/36.63278/-105.181329) to identify any disadvantaged communities that will benefit from your project. The CEJST developed by the White House Council on Environmental Quality is a geospatial mapping tool that utilizes publicly available, nationally consistent data sets related to climate change, the environment, health, and economic opportunity to identify disadvantaged communities. In addition to identifying specific census tracts that are disadvantaged, the CEJST includes the lands of Federally **Notice of Funding Opportunity No. R24AS00052** recognized Tribes as disadvantaged communities. In addition, regardless of whether a Federally recognized Tribe has land, all Federally recognized Tribal entities are considered disadvantaged communities for the purposes of the Justice40 Initiative.²*

According to the White House Council on Environmental Quality’s interactive Climate and Economic Justice Screening Tool (CEJST) and the EPA EJScreen mapping tool, communities within Okanogan County can be considered disadvantaged based on several factors, including low income (portions of the county are within the 80th – 94th percentile), less than a high school education (90th percentile in the highest population centers), limited English speaking (87th percentile) and over the age of 65 (95th percentile). Additionally, several census tracts (scored on

a scale from 1 to 10; with 10 being the highest risk) score between 7 and 10 on Washington State Department of Health's Environmental Health Disparity's (DOH EHD) mapping tool¹². The Washington State Employment Security Department ranks Okanogan County as an economically distressed area as it has a three-year average unemployment rate of 7.4% (anything over 7% is considered "distressed").¹³

Further, the Federally Recognized Colville Confederated Tribes reservation is located nearby, south of the project area in southeastern Okanogan County.

•If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?

The disadvantaged communities within Okanogan County are affected to a greater extent by climate change and drought. This is particularly important when considering forecasted increase in the regional drought conditions over the next several decades, and that 52% percent of people within Okanogan County are affected by drought, according to the Nation Integrated Drought Information System (NIDIS). The improvements to OTID infrastructure will result in improved water conservation planning, water delivery and energy efficiency which can help to combat the adverse effects of climate change.

E.1.4.2 Subcriterion D.2. Tribal Benefits

The Department is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum, Tribal Consultation and Strengthening Nation-to-Nation Relationships, asserts the importance of honoring the Federal Government's commitments to Tribal nations. Address the following, if applicable:

•Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?

The replacement of old water control valves will improve the integrity of the OTID system to prevent or otherwise minimize issues such as seepage, leakage, and overflows. Such water conservation will result in additional instream water in the Okanogan River. The Colville Confederated Tribal Reservation is located in southeast Okanogan County, downstream of the

¹² The DOH EHD map assesses state census tracts against a variety of risk measures including pollution (diesel emissions and ozone), proximity to hazardous waste sites, poverty levels, and prevalence of cardiovascular disease. Washington Environmental Health Disparities Map | Washington State Department of Health

¹³

<https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fmedia.esd.wa.gov%2Fesdwa%2FDefault%2FESDWAGOV%2Flabor-market-info%2FLibraries%2FRegional-reports%2FDistressed-Areas%2F2021-distressed-areas-list.xlsx&wdOrigin=BROWSELINK>

Okanogan River. The Colville Tribes consist of twelve individual tribes. These tribes have used the water from the Okanogan and Columbia Rivers since time immemorial for traditional water uses, including irrigation, stockwater, domestic, commercial, industrial, municipal, fish and wildlife, cultural uses, and other uses as necessary to provide for the Tribes and its members.

•Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?

No indigenous practices will directly be incorporated into this project. However, water savings from the project are expected to improve water quality and quantity and are expected to benefit downstream interests for ecological stewardship and improved management of water.

•Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, increased renewable energy, or economic growth opportunities? Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?

Water savings through state-of-the-science water valves will allow for a small buffer against resiliency against possible mandated water quantity restrictions due to climate change and drought. Efficient delivery systems will lead to additional water in the river and in the groundwater for Tribes downstream.

Criterion E—Complementing On-Farm Irrigation Improvements (8 points)

Up to 8 points may be awarded for projects that describe in detail how they will complement on-farm irrigation improvements eligible for NRCS financial or technical assistance.

Note: Scoring under this criterion is based on an overall assessment of the extent to which the WaterSMART Grant project will complement ongoing or future on-farm improvements.

Applicants should describe any proposal made to NRCS, or any plans to seek assistance from NRCS in the future, and how an NRCS-assisted activity would complement the WaterSMART Grant project. Financial assistance through EQIP is the most commonly used program by which NRCS helps producers implement improvements to irrigation systems, but NRCS does have additional technical or financial assistance

²OMB, CEQ, & CPO, M-23-09, Addendum to the Interim Implementation Guidance for the Justice40 Initiative, M-21-28, on using the Climate and Economic Justice Screening Tool (CEJST) (Jan. 27, 2023), www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf.

Since its inception, the primary crop within OTID has been tree fruit, with some minor pasture and hay. The application methods for irrigation water within the District are varied depending on tree or pasture; however, the primary application methods are solid set undertree (and overtree)

sprinklers for trees and wheel and handlines for pasture and hay. Less efficient irrigation methods, such as flood or rill irrigation, does not typically occur within the District.

However, water savings under the proposed project will facilitate the District to further educate its growers about efficient water use, encourage replacement of aging sprinklers, and create incentivization programs for additional on-farm water savings, including conversion to micro spray¹⁴ and use of shade cloth¹⁵ to further reduce total and consumptive water demands, especially during spring frost protection and peak summer cooling.

Criterion F—Readiness to Proceed (8 points)

Up to 8 points may be awarded for this criterion.

Points may be awarded based upon the extent to which the proposed project is capable of commencing upon entering into a financial assistance agreement. Note: If your project is selected, responses provided in this section will be used to develop the scope of work that will be included in the financial assistance agreement.

Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- *Identify and provide a summary description of the major tasks necessary to complete the project. **Note: Do not repeat the more detailed technical project description provided in Section D.2.2.2 Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.***

- *Describe any permits that will be required, along with the process for obtaining such permits.*

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

- *Describe any new policies or administrative actions required to implement the project.*

- *Describe the current design status of the project. If additional design work is required prior to construction, describe the planned process and timeline for completing the design work.*

- *Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete). Was the expected timeline for environmental and cultural compliance discussed with the local Reclamation regional or area office?*

¹⁴ <https://library.ndsu.edu/ir/bitstream/handle/10365/5108/ae1243.pdf?sequence=1>

¹⁵ <https://ecology.wa.gov/blog/august-2023/%E2%80%8B%E2%80%8B%E2%80%8Binnovative-conservation-efforts-save-50-more-water-at-auvil-fruit-company%E2%80%8B>

The proposed project is ready to immediately proceed. No additional permits, policies, or formal engineering or design work is required. All work will be completed within OTID’s existing easements. OTID has the readiness, internally expertise, and equipment to replace each of the existing orifice plates with new flow control valves at the 254 turnouts within the Cordell and Crater Lakes Service Areas. The project is relatively simple, yet very effective and will produce quantifiable water savings for two of OTID’s Service Areas.

OTID staff will be used for the specific tasks during the approximate two-year project. Assuming notice to proceed in October 2025, preparatory work, planning, and material procurement will immediately begin during Q4 2025/Q1 2026, with Phase 1 (Crater Lakes) implementation to proceed Q1 2026 and Phase 2 (Cordell) during Fall 2026/Q1 2027. Table 6 presents element of each of the two project phases. OTID staff is expected to work regular workhours, with no overtime anticipated on the project.

Table 6. Implementation Schedule

Task	Deliverable	Schedule
1 - Project Planning	Project Work Plan	Notice to Proceed – assumed October 2025
2 - Phase I – Crater Lakes	Phase 1 – Progress Report	October 2025 to April 2026
3 - Phase 2 – Cordell	Phase 2 – Progress Report	October 2026 to April 2027
4 - Project Close Out, Testing, and Reporting	Final Report	April through June 2027

Criterion G—Collaboration (5 points)

Up to 5 points may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.

Please describe how the project promotes and encourages collaboration. Consider the following:

- Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?*
- What is the significance of the collaboration/support?*
- Will this project increase the possibility/likelihood of future water conservation improvements by other water users?*
- Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*
- Please attach any relevant supporting documents (e.g., letters of support memorandum of understanding).*

This project has significant support from OTID service members and community partners in the area. See the letters of support attached (Attachment 4). Water savings under the proposed project will facilitate the District to further educate its growers about efficient water use, encourage replacement of aging sprinklers, and create incentivization programs for additional on-farm water savings to further reduce total and consumptive water demands, especially during spring frost protection and peak summer cooling.

Criterion H—Nexus to Reclamation (4 points)

Up to 4 points may be awarded if the proposed project is connected to a Reclamation project or Reclamation activity. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider:

- Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?*
- If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?*

- Will the proposed work benefit a Reclamation project area or activity?
- Is the applicant a Tribe?

OTID is a former Reclamation district, with Reclamation transferring the title to OTID in the late 1990s following OTID settling an existing Reclamation loan. As the Okanogan River is a tributary to the Columbia River, which has significant Reclamation project interest, the water savings proposed in this application will benefit Reclamation activities in the Columbia mainstem.

1.5 Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.

*All Water and Energy Efficiency Grants applicants are **required** to propose a “performance measure” (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with Water and Energy Efficiency Grants recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy Efficiency Grants.*

Note: Program funding may be used to install necessary equipment to monitor progress. However, program funding may not be used to measure performance after project construction is complete (these costs are considered normal operation and maintenance costs and are the responsibility of the applicant).

As previously described in Criterion A, OTID flow tested nine turnouts in the Cordell and Crater Lake Service Area during the 2024 irrigation season (see Table 5) to establish pre-project flow rates. Results of the flow testing was compared to district’s assessments and the amount of acreage severed. Following project implementation, the same turnouts, including a statistically significant sampling of additional turnouts, will be retested to confirm water saving at each turnout.

In addition, at the Service Area scale, confirmation of water saving will be clearly demonstrated by both the Cordell and Cater Lakes diversion meters on the Okanogan River. These diversions are required to be metered and annual water usage reported to the Washington State Department of Ecology. These meters and associated SCADA system are maintained by OTID staff. These meters will clearly demonstrate the total water quantity left instream to benefit river flows, ESA-listed species, and availability for reappropriation downstream to benefit the local agricultural economy.

1.6 Environmental and Cultural Resources Compliance

Will the proposed Project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?

Work proposed under this WaterSmart grant will have no significant impact on the surrounding environment. All earth disturbing work will occur within the existing canal, sidewalls, and existing easements.

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 area? If so, would they be affected by any activities associated with the proposed Project?

ESA-listed Chinook Salmon and Steelhead Trout habitat includes the Upper Okanogan River as well as Lake Osoyoos. The water valve modernization project will have only positively affect threatened and endangered species as it is leaving an estimated 2,671 afy in the Okanogan river.

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?” If so, please describe and estimate any impacts the proposed project may have.

There are three major surface water bodies that fall under the Clean Water Act jurisdiction within the project area - Osoyoos Lake, Similkameen River, and Okanogan River. However, there are no negative impacts to any of these water bodies from this project.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)?

Yes, the intention of the work proposed under this WaterSmart Grant is to replace 254 outdated water flow plates with more modern flow valves. Modern water flow valves will improve water efficiency throughout the system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

There is one building in the irrigation district listed in the Washington Heritage Register and National Register of Historic Places, Hiram F. Smith Orchard¹⁶ located two miles north of Oroville on the east bank of Osoyoos lake. However, there are no anticipated impacts to any of these historic buildings or structures from this project as the work will occur on existing canals, sidewalls, and easements.

Archeological Sites

There are no archeological sites located in the irrigation district.

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

There are no anticipated disproportionally high or adverse effects on low income or minority populations. It is anticipated that this project will positively affect these populations.

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

¹⁶ Accessed through Department of Archaeology and Historic Preservation’s WISAARD search tool.

The project area is not on tribal lands and therefore will not have any impacts or limit access to Indian sacred sites.

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?

This project will not contribute to the introduction or spread of noxious weeds or other non-native invasive species to the area.

1.7 Overlap or Duplication of Effort Statement

The activities proposed under this WaterSmart grant do not duplicate or overlap existing water metering efforts by OTID

1.8 Conflict of Interest Disclosure Statement

There are no known conflicts of interest for OTID's proposed project. As required in the NOFO, OTID will submit a conflict-of-interest disclosure or certification statement prior to issue of an award.

1.9 Required Permits or Approvals

There are no required permits or approvals for the proposed project.

11-4-2024



RE: Support for Oroville-Tonasket Irrigation District (OTID) WaterSMART Water and Energy Efficiency Grant Funding for Irrigation System Modernization

Dear U.S. Bureau of Reclamation WaterSMART Selection Committee,

Okanagan County Commissioners express our support of Oroville-Tonasket Irrigation District's (OTID) Water and Energy Efficiency Grant (WEEG) application, which seeks to fund a systematic water valve modernization across 175 of OTID's 30+-year-old irrigation turnouts. The current flow control water plates at these turnouts, installed in the 1980s, are only 50% efficient – equating to significant water loss to seepage and leaks at every turnout. Modernizing these to state-of-the-science water valves would improve efficiency throughout the system.

OTID, based in Okanagan County in North Central Washington, just miles south of the Canadian border, serves water through a completely pressurized system (e.g., no open canals or ditches) to 1,500 irrigation customers across 10,000 acres. OTID is a former Reclamation district, transitioning in the 1980s to the quasi-municipal special purpose district it is today. As the major agricultural water provider in the region, the district currently supports the agricultural economy for over 1,000 growers growing apples, cherries, pears, and alfalfa hay. OTID's water is a key job generator in the community, which is economically depressed and overburdened region (as defined by federal Climate and Economic Justice (CEJST) and EJ Screen criteria).

OTID established the first regional water bank during the 2019 State-wide drought. Now, with back-to-back years of drought emergencies in 2023 and 2024 in the region, OTID is proactively implementing additional water conservation planning across its infrastructure. OTID sources its irrigation supply from the Okanagan river, which holds ESA-listed fish habitat already threatened by low flows and warmer temperatures in the region. In combination with other District initiatives (including modernizing pump stations and fallowing fields), the water valve upgrade project proposed to be funded in this grant, is anticipated to result in an estimated 10,000 acre-feet of water savings that could be left instream to benefit fish and flows and out-of-stream to support the local economy.

Upgrading to more efficient water flow controls, OTID will better manage irrigation supply, increase water savings, and add more water instream for key habitat species. This is a water savings and drought resiliency project that we encourage Reclamation's support of.

Sincerely,

A handwritten signature in black ink that reads "Jon Meal".

Jon Meal

BOCC Chairman

11-4-2024

RE: Support for Oroville-Tonasket Irrigation District (OTID) WaterSMART Water and Energy Efficiency Grant Funding for Irrigation System Modernization

Dear U.S. Bureau of Reclamation WaterSMART Selection Committee,

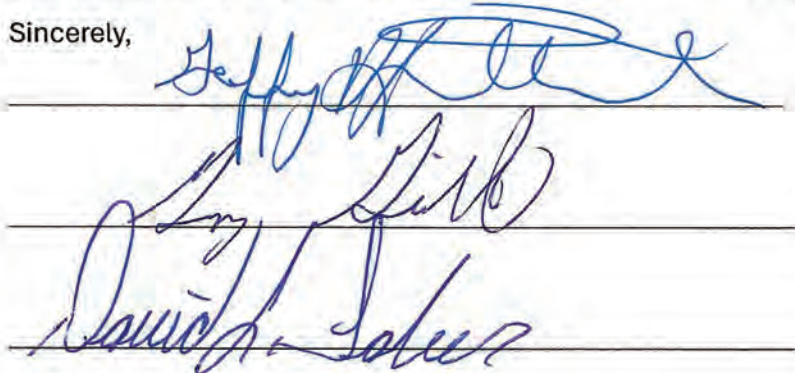
OTID Growers writes to express our support of Oroville-Tonasket Irrigation District's (OTID) Water and Energy Efficiency Grant (WEEG) application, which seeks to fund a systematic water valve modernization across 175 of OTID's 30+-year-old irrigation turnouts. The current flow control water plates at these turnouts, installed in the 1980s, are only 50% efficient – equating to significant water loss to seepage and leaks at every turnout. Modernizing these to state-of-the-science water valves would improve efficiency throughout the system.

OTID, based in Okanogan County in North Central Washington, just miles south of the Canadian border, serves water through a completely pressurized system (e.g., no open canals or ditches) to 1,500 irrigation customers across 10,000 acres. OTID is a former Reclamation district, transitioning in the 1980s to the quasi-municipal special purpose district it is today. As the major agricultural water provider in the region, the district currently supports the agricultural economy for over 1,000 growers growing apples, cherries, pears, and alfalfa hay. OTID's water is a key job generator in the community, which is economically depressed and overburdened region (as defined by Federal Climate and Economic Justice (CEJST) and EJ Screen criteria).

OTID established the first regional water bank during the 2019 State-wide drought. Now, with back-to-back years of drought emergencies in 2023 and 2024 in the region, OTID is proactively implementing additional water conservation planning across its infrastructure. OTID sources its irrigation supply from the Okanogan River, which holds ESA-listed fish habitat already threatened by low flows and warmer temperatures in the region. In combination with other District initiatives (including modernizing pump stations and fallowing fields), the water valve upgrade project proposed to be funded in this grant, is anticipated to result in an estimated 10,000 acre-feet of water savings that could be left instream to benefit fish and flows and out-of-stream to support the local economy.

Upgrading to more efficient water flow controls, OTID will better manage irrigation supply, increase water savings, and add more water instream for key habitat species. This is a water savings and drought resiliency project that we encourage Reclamation's support of.

Sincerely,



The block contains three handwritten signatures in blue ink, each written over a horizontal line. The top signature is the most legible, appearing to read 'Jeffrey'. The middle signature is more stylized and less legible. The bottom signature is also stylized and less legible.

November 5, 2024



RE: Support for Oroville-Tonasket Irrigation District (OTID) WaterSMART Water and Energy Efficiency Grant Funding for Irrigation System Modernization

Dear U.S. Bureau of Reclamation WaterSMART Selection Committee,

The Okanogan County Economic Alliance writes to express our support of Oroville-Tonasket Irrigation District's (OTID) Water and Energy Efficiency Grant (WEEG) application, which seeks to fund a systematic water valve modernization across 175 of OTID's 30+-year-old irrigation turnouts. The current flow control water plates at these turnouts, installed in the 1980s, are only 50% efficient – equating to significant water loss to seepage and leaks at every turnout. Modernizing these to state-of-the-science water valves would improve efficiency throughout the system.

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Sincerely,

Roni Holder-Diefenbach, Executive Director



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