D.2.2.1. Title Page

Hillside Ditch Phase 2 Pipeline Conversion Project

Project Location: Blaine County, Montana

BUREAU OF RECLAMATION
WaterSMART GRANT APPLICATION
Water and Energy Efficiency Grants for Fiscal Year 2024
Funding Opportunity Announcement No. R24AS00052

Applicant:

Paradise Valley Irrigation District
12610 Paradise Valley Road
Chinook, MT 59523
Email: paradisedistrict@hotmail.com
Phone: (406) 357-2253

Project Manager:

Denny Overcast
518 1st Street
Havre, MT 59501
Phone: 406-799-6605
Email: paradisedistrict@hotmail.com

Congressional District of Applicant: Montana At-Large
Congressional Districts of Project Area: Montana At-Large

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D.2.2.2 TECHNICAL PROPOSAL CONTENT

D.2.2.2.3 EXECUTIVE SUMMARY

The executive summary should include:

- The date, applicant name, city, county, and state

Date: January 22, 2024

Applicant Name: Paradise Valley Irrigation District

Address: 12610 Paradise Valley Road, Chinook, MT 59523, Blaine County, MT

- Please indicate whether you are a Category A applicant or a Category B applicant. If you are a Category B applicant, please briefly explain how you are acting in partnership with a Category A partner. Note: If you are a Category B applicant, you must include a letter from the Category A partner confirming that they are partnering with you and agree to the submittal and content of the proposal. See Section C.1. Eligible Applicants.

The Paradise Valley Irrigation District is a Category A Applicant

- A one-paragraph project summary that provides the location of the project, a brief description of the work that will be carried out, any partners involved, expected benefits, and how those benefits relate to the water management issues you plan to address. Note: This information will be used to create a summary of your project for our website if the project is selected for funding. For example, see the following description of a project selected for funding in FY 2023:

  Example: The East Columbia Basin Irrigation District, near Othello, will convert 24,483 feet of earthen canals to polyvinyl chloride pipelines to address seepage and evapotranspiration losses. The project is expected to result in annual water savings of 290 acre-feet, which will be used to offset existing groundwater pumping in an area with significant aquifer depletion and to enhance flows in the Columbia River.

The Paradise Valley Irrigation District is proposing to convert one mile of the existing open irrigation canal called the Hillside Ditch to a buried pipeline system. The Hillside Ditch is a 3.2-mile canal lateral that supports nearly 900 acres of prime agricultural land within the District. The last two miles of the canal are underlain by very pervious soils that lose a significant amount of water. Approximately 1 mile of the canal has been converted to a pipeline but the remaining mile within the pervious soils is in need of piping as well. Replacing the open lateral with a buried pipeline will eliminate seepage and evapotranspiration through the reach; improve irrigation delivery efficiency and effectiveness; eliminate safety hazards; increase crop yield; and conserve water diverted from the Milk River. The existing drought conditions in north central Montana are considered severe to extreme by the U.S. Drought Monitor. Project partners include members of the Paradise Valley Irrigation District.

- State the length of time and estimated completion date for the proposed project (month/year).

  Proposed Construction Start Date: 10/2024
  Proposed Construction End Date: 12/2026
  Project Duration: 24 months

- Whether or not the proposed project is located on a Federal facility.

The Paradise Irrigation District is part of the Bureau of Reclamation Milk River Project and is located on a Federal Facility.

D.2.2.2.4 PROJECT LOCATION

Provide detailed information on the proposed project location or project area including a map showing the specific geographic location. For example, {project name} is located in {state and county} approximately {distance} miles {direction, e.g., northeast} of {nearest town}. The project latitude is {##°##'N} and longitude is {###°##'W}.

The Hillside Ditch is a 2-mile canal lateral located approximately 5.5 miles southeast of Chinook, Montana within the PVID. The ditch provides irrigation water to nearly 900 acres of prime agricultural land within the district and is situated within the Middle Milk River Basin (Hydrologic Unit Code (HUC) 10050004). The project has a latitude and longitude of 48.557027° North and 109.100856° West, respectively. The open lateral extends through Sections 2, 3 and 11 of Township 32 North, Range 20 East in Blaine County, MT. A project area map is included as Exhibit 1 and a Location Map is shown in Figure 1.

D.2.2.2.5 Project Description

Provide a more comprehensive description of the technical aspects of your project, including the work to be accomplished and the approach to complete the work. This description should provide detailed information about the project including materials and equipment and the work to be conducted to complete the project. This section provides an opportunity for the applicant to provide a clear description of the technical nature of the project and to address any aspect of the project that reviewers may need additional information to understand.

Please do not include your project schedule and milestones here; that information is requested in response to the Readiness to Proceed criterion described in Section E.1.5.2. In addition, please avoid discussion of the benefits of the project, which are also requested in response to evaluation criteria described in Section E.1. This section is solely intended to provide an understanding of the technical aspects of the project.

Note, if the work you are requesting funding for is a phase of a larger project, please only describe the work that is reflected in the budget and exclude description of other activities or components of the overall project.

The purpose of the Hillside Ditch Rehabilitation project is to convert 1 mile of an existing open irrigation canal to a closed pipeline system. Approximately 1 mile of the Hillside Ditch has been converted from an open canal to a pipeline previously through a RRGL construction grant. However, more piping is necessary to prevent water shortages resulting from canal seepage and evapotranspiration losses that has resulted in a lack of sufficient water to irrigate downstream crops. These fields are producing at low rates due to water shortages. The PVID proposes to replace the last mile of the open canal with a 21-inch diameter closed system pipeline as originally planned by the NRCS. This upgrade will eliminate all seepage concerns and increase water supply for downstream irrigators. The lateral can support nearly 900 acres of cropland, but due to extensive seepage from the remaining portion of the lateral that is not piped it is not performing optimally and cannot supply the full allotment of water to users at the downstream end of the system.

The extensive loss of water is the primary problem affecting the 1-mile-long section of the Hillside Ditch Lateral identified as an area of concern. Conveyance inefficiencies and evapotranspiration losses originating from vegetative growth within the lateral have compounded these water losses. Over the 153-day irrigation season the canal loses an average of 2,275 acre-feet of water each year. Flow measurements in the canal were performed by the NRCS is 2010 and Oxbow Engineering in 2004. These field flow measurements showed that the last mile of the Hillside Ditch was losing 7.5 cfs to seepage (verbal conversations with the local NRCS, documented flow measurements from Oxbow Engineering as shown in Appendix A). Measurements of the Hillside Ditch were performed by Oxbow Engineering in July 2004 to verify the NRCS field measurements. Oxbow Engineering utilized existing culvert crossings to measure the flow in the Hillside Ditch at three locations where culverts were not submerged using a velocity meter to calculate the velocity and measurement of the flow height in the culvert to determine the cross-sectional area (Q=VA). The results of these field measurements show a loss of over 27.4 cfs from the inlet to near the end of the lateral. The starting flowrate was 41 cfs, and only one person was using water at the end of the lateral, thus there were no intervening irrigators taking water out between field measurements. Field flow measurements have been substantiated using water loss calculations for the remaining mile of the Hillside Ditch proposed for piping. The water loss calculations used to quantify water volumes were principals derived from Darcy's Law (Q = kia). The silty clay loam and loam soil identified

through the Web Soil Survey along the existing lateral alignment produces a saturated hydraulic conductivity (Ksat) of 1.98 to over 5 inches/hour (4 to 10 feet/day), as determined by the NRCS Web Soil Survey. Using these values, the seepage loss (Q) through the 1-mile section was calculated to be 7.5 cfs using a modest hydraulic conductivity of the ditch section on average of 6 ft/day, as shown in the seepage calculations provided in Appendix A. Thus, based on actual flow measurements and calculations, it appears that the use of 7.5 cfs is a conservative value in this analysis. Over the course of the 153-day irrigation season, the canal loses an average of 2,275 acre-feet of water each year.

The proposed lateral to pipeline conversion will significantly increase the PVID's ability to manage the water resource. The proposed pipeline system will provide the PVID the ability to control and monitor water being delivered through the Hillside Ditch. Currently, a significant amount of water is released into the Hillside Ditch because all the water will not reach the end due to seepage, resulting in a significant amount of water that is wasted unnecessarily. The proposed pipeline system will allow PVID staff to adjust flows at the headgate and be able to deliver water to downstream users on a consistent basis and to deliver the amount of water required for optimal crop production.

The project involves converting the 1-mile-long section of the Hillside Ditch Lateral to a closed pipeline system using a 16GA A2000 Corrugated Plastic Drainage pipe. The canal cross-section would be cleared of any debris and organic material, and the existing canal bottom would be graded to a consistent channel slope and compacted to provide adequate pipe bedding. After pipeline and appurtenances installation, the canal would be backfilled, compacted, revegetated. The project steps will include completing regulatory requirements, survey, design, construction of the pipeline; and project management and closeout items such as grant reporting, site inspection, and development of as-built drawings. A schematic drawing of the proposed pipeline is provided on Exhibit 2. The NRCS sized the pipe for permissible flows and to match the first mile of converted pipe, thus, a 21-inch pipe size was chosen.

Problems and Needs

The Hillside Ditch is a 3.2-mile lateral within the PVID. The first 1.2 miles of the lateral from the headgate on the PVID main canal is underlain by a silty clay material that does not experience much seepage. However, the last two miles of the lateral are underlain by much more pervious soils that lose a significant amount of water. In its current condition, the lateral is underperforming. Heavy seepage losses and evapotranspiration have caused cropland at the end of the canal to be left water short. These croplands are considered prime cropland, but only if irrigated. The cause of the seepage issue is due to well drained soils throughout the Hillside Ditch project area. The soils of the canal banks and the canal bottom through the reach of concern are characterized as well drained loams to silty clay loams with moderate to high hydraulic conductivity. These soil types cause water to seep through the canal prism at a rapid rate.

On several site visits and conversations with the PVID Manager, conditions were observed and discussed including overgrown vegetation on the canal banks and granular well drained soils within the canal flow area. The PVID manager noted in its current condition, water volumes are not sufficient to adequately supply water to all users along the Hillside Ditch. Seepage and evapotranspiration losses were measured by the NRCS at 7.5 cfs within this portion of the ditch. These measurements were substantiated by additional measurements performed by Oxbow Engineering as well as seepage calculations performed by WWC Engineering. These losses equate to unproductive cropland downstream as the lateral does not have the capacity to carry both the water that is lost as well as the water that is needed downstream.

Additionally, PVID personnel spend a significant amount of time monitoring the Hillside Ditch in the proposed project area to ensure they are pushing as much water as possible down ditch to supply the downstream users. According to the PVID Manager, maintenance on this section of the lateral is one of the most demanding areas in the delivery system due to the significant losses. The Hillside Ditch provides irrigation water to approximately 900 acres of agricultural land. However, approximately 500 acres of cropland at the downstream end of the lateral are currently being under-served due to seepage and evapotranspiration due to well drained soils and overgrown vegetation. These downstream croplands are not able to provide optimal crop production due to the water shortage issues. Eliminating the seepage and evapotranspiration issues will provide irrigation to the downstream reaches of the lateral and provide substantial economic benefits for the PVID and its water users. Implementing a canal to pipeline conversion throughout the 1-mile reach of concern within the Hillside Ditch will eliminate seepage through the reach. Therefore, the canal to pipeline conversion project will improve the PVID's ability to deliver the conserved irrigation water to downstream water users and benefit the croplands to increase yields and revenues.

Specific Activities that will be Accomplished

Design/Permitting/Construction Oversight: The PVID will contract with a licensed Professional Engineer to complete the design of the Hillside Ditch Pipeline Conversion Project. The Engineer will be responsible for the design of the proposed project, which will include, but is not limited to, surveying, geotechnical analysis, environmental considerations, hydrology and hydraulics, structural analysis, permitting, and construction administration duties. The Engineer will work with regulatory agencies to complete environmental compliance. The Engineer will provide a final plan set and specifications for the proposed project to facilitate construction. The Engineer will also provide advisory services during construction of the project to assure proper installation.

Construction: The PVID will contract with a licensed General Contractor to complete the construction of the Hillside Ditch Pipeline Conversion Project. The Contractor will be responsible for the purchase of all materials and supplies, providing equipment, material testing, coordinating with subcontractors as necessary, and providing the workforce to complete the project according to the plans and specifications. The Contractor will work with the selected Engineer throughout the project. The Contractor will mark up the drawings during construction and provide a set of as-built drawings to the Engineer at the completion of the construction.

The project will consist of the installation of 5,280 feet of 21-inch diameter A2000 drainage pipe, one concrete outlet structure, 10 clean out structures, topsoil salvaging and replacement, revegetation, and grading and compaction. These would be the general bid items that would be publicly bid on to select the lowest qualified bid from a Contractor.

D.2.2.2.6 Evaluation Criteria

E.1 Evaluation Criteria

E.1.1 Evaluation 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.*

The proposed project will result in water conservation, drought resiliency, enhanced staff safety, improved water supply and management, water users conflict resolution, power savings, and increased irrigation efficiency that will improve future on-farm improvements. The proposed pipeline conversion project will result in the conversation of up to 2,275 acre-feet of water that is currently lost within the Hillside Ditch Lateral each year primarily from seepage and evapotranspiration losses. Converting the open canal to a closed pipe system will mitigate these seepage losses by removing the water's contact with the existing well-drained soils and excess vegetation within the canal.

Additional benefits from the project include pump energy conservation by reducing the pump demand at downstream turnouts, improved management and maintenance of water within the Hillside Ditch Lateral, reduced time and labor through improved management, improved water quality in the Milk River by controlling flows with the Hillside Ditch to limit high nutrient concentrations and water temperatures that discharge to the Milk River, the preservation of 500 acres of currently underserved irrigated lands, and improved crop development through the reliable supply of water to the downstream users.

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.

The proposed pipeline conversion project will provide a significant water savings of an average of 7.5 cfs or 2,275 acre-feet of water per year. These water losses are attributed to seepage caused by the presence of well-drained soils along with undesirable evapotranspiration resulting from vegetative overgrowth. The flow measurements have been substantiated by measurements performed by the NRCS and Oxbow Engineering on water loss due to seepage and evapotranspiration.

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:

a. Explain where current losses are going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?

The Hillside Ditch is an open channel water delivery system with a manual, hand operated headgate at the turnout. The soils beneath the canal are extremely porous along with vegetive growth that allow for large quantities of water to be lost each year to seepage. The water volume

of 2,275 acre-feet year is lost by seeping into the ground and is not returned to a surface water source.

b. 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?

Current water losses from the open irrigation canal are being lost to seepage to the underlaying groundwater aquifer. The aquifer is classified as an Alluvium (Holocene). From the Montana Groundwater Information Center (GWIC) there are a few groundwater wells in the project area. However, the Town of Chinook has a public water supply and most of the irrigation water in the project area is supplied by the PVID.

c. 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?

Seepage losses from the canal that are being conveyed to the groundwater aquifer may be providing some aquifer recharge. There have not been any documented concerns related to the groundwater level in this area so the aquifer recharge benefit from the seepage losses is likely minimal.

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 that 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.*

In 2010, the NRCS performed field flow measurements on the remaining portion of the Hillside Ditch that was left un-piped. These field flow measurements showed that the last mile of the Hillside Ditch was losing 7.5 cfs to seepage (verbal conversations with the local NRCS). Measurements of the Hillside Ditch were also performed by Oxbow Engineering in July 2004 to verify the NRCS field measurements. Oxbow Engineering utilized existing culvert crossings to measure the flow in the Hillside Ditch at three locations where culverts were not submerged using a velocity meter to calculate the velocity and measurement of the flow height in the culvert to determine the cross-sectional area (Q=VA). The results of these field measurements show a loss of over 27.4 cfs from the inlet to near the end of the lateral. The starting flowrate was 41 cfs, and only one person was using water at the end of the lateral, thus there were no intervening irrigators taking water out between field measurements. Field flow measurements have been substantiated using water loss calculations for the remaining mile of the Hillside Ditch proposed for piping. Based on actual flow measurements and calculations, it appears that the use of 7.5 cfs is a conservative value in this analysis. Over the course of the 153-day irrigation season, the canal loses an average of 2,275 acre-feet (741 million gallons) of water each year.

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.

(1) **Canal Lining/Piping:** Canal lining/piping projects can provide water savings when irrigation delivery systems experience significant losses due to canal seepage. Applicants proposing lining/piping projects should address:

a. How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.

In 2010, the NRCS performed field flow measurements on the remaining portion of the Hillside Ditch that was left un-piped. These field flow measurements showed that the last mile of the Hillside Ditch was losing 7.5 cfs to seepage (verbal conversations with the local NRCS). Measurements of the Hillside Ditch were also performed by Oxbow Engineering in July 2004 to verify the NRCS field measurements. Oxbow Engineering utilized existing culvert crossings to measure the flow in the Hillside Ditch at three locations where culverts were not submerged using a velocity meter to calculate the velocity and measurement of the flow height in the culvert to determine the cross-sectional area (Q=VA). The results of these field measurements show a loss of over 27.4 cfs from the inlet to near the end of the lateral. The starting flowrate was 41 cfs, and only one person was using water at the end of the lateral, thus there were no intervening irrigators taking water out between field measurements. The measurements by Oxbow Engineering are provided in Appendix A.

The existing Hillside Ditch loses a significant amount of water due to the porous underlying soils through a portion of the irrigation canal. The water loss calculations used to substantiate the previous water measurements were principals derived from Darcy's Law (Q = kia). The silty clay loam and loam soil identified through the Web Soil Survey along the existing lateral alignment produces a saturated hydraulic conductivity (Ksat) of 1.98 to over 5 inches/hour (4 to 10 feet/day), as determined by the NRCS Web Soil Survey. Using these values, the seepage loss (Q) through the 1-mile section was calculated to be 7.5 cfs using a modest hydraulic conductivity of the ditch section on average of 6 ft/day, as shown in the seepage calculations provided in Appendix A.

b. How have average annual canal seepage losses been determined? Have ponding and/or inflow/outflow tests been conducted to determine seepage rates under varying conditions? If so, please provide detailed descriptions of testing methods and all results. If not, please provide an explanation of the method(s) used to calculate seepage losses. All estimates should be supported with multiple sets of data/measurements from representative sections of canals.

In 2010, the NRCS performed field flow measurements on the remaining portion of the Hillside Ditch that was left un-piped. These field flow measurements showed that the last mile of the Hillside Ditch was losing 7.5 cfs to seepage (verbal conversations with the local NRCS). Measurements of the Hillside Ditch were also performed by Oxbow Engineering in July 2004 to verify the NRCS field measurements. Oxbow Engineering utilized existing culvert crossings to measure the flow in the Hillside Ditch at three locations where culverts were not submerged using a velocity meter to calculate the velocity and measurement of the flow height in the culvert to determine the cross-sectional area (Q=VA). The results of these field measurements show a loss of over 27.4 cfs from the inlet to near the end of the lateral. The starting flowrate was 41 cfs, and

only one person was using water at the end of the lateral, thus there were no intervening irrigators taking water out between field measurements. Field flow measurements have been substantiated using water loss calculations for the remaining mile of the Hillside Ditch proposed for piping.

c. What are the expected post-project seepage/leakage losses and how were these estimates determined (e.g., can data specific to the type of material being used in the project be provided)?

Implementation of the pipeline conversion project would eliminate all seepage and evapotranspiration losses through existing open canal section. The A2000 corrugated plastic drainage pipe that would be installed will have watertight joints and will be buried and properly compacted. The impermeable pipe installation would result in the conservation of 7.5 cfs or 2,275 acre-feet each year.

d. What are the anticipated annual transit loss reductions in terms of acre-feet per mile for the overall project and for each section of canal included in the project?

The proposed project involves replacing a 1-mile-long section of the Hillside Ditch Lateral to a closed pipeline system. Applying the proposed water conservation value of 2,275 acre-feet to the 1-mile section of the canal would results in an anticipated annual transit loss reduction of 2,275 acre-feet per mile for the overall project.

e. How will actual canal loss seepage reductions be verified?

Flow measurements of the Hillside Ditch will be taken at the same three locations where culverts that were used for the initial water loss calculations. The measurements will be taken where the culverts are not submerged using a velocity meter to calculate the velocity and measurement of the flow height in the culvert to determine the cross-sectional area (Q=VA). Flow measurements at the diversion into the lateral and at the end of the newly installed pipe section will show the actual canal losses and can be used to verify the water savings as a result of the pipeline conversion.

f. Include a detailed description of the materials being used.

The project involves converting the 1-mile-long section of the Hillside Ditch Lateral to a closed pipeline system using a 16GA A2000 Corrugated Plastic Drainage pipe. The canal cross-section would be cleared of any debris and organic material, and the existing canal bottom would be graded to a consistent channel slope and compacted to provide adequate pipe bedding. After pipeline and appurtenances installation, the canal would be backfilled and compacted. The NRCS sized the pipe for permissible flows and to match the first mile of converted pipe, thus, a 21-inch pipe size was chosen.

(2) **Municipal Metering:** Municipal metering projects can provide water savings when individual user meters are installed where none exist to allow for unit or tiered pricing and when existing individual user meters are replaced with advanced metering infrastructure (AMI) meters. To receive credit for water savings for a municipal metering project, an applicant must provide a detailed description of the method used to estimate savings, including references to documented savings from similar previously implemented projects. Applicants proposing municipal metering projects should address the following:

a. How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.

N/A

b. How have current system losses and/or the potential for reductions in water use by individual users been determined?

N/A

c. For installing end-user water service meters, e.g., for a residential or commercial building unit., refer to studies in the region or in the applicant's service area that are relevant to water use patterns and the potential for reducing such use. In the absence of such studies, please explain in detail how expected water use reductions have been estimated and the basis for the estimations.

N/A

d. What types (manufacturer and model) of devices will be installed and what quantity of each?

N/A

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

N/A

(3) **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.

The estimated quantity of additional supply the project will provide is 2,275 acre-feet of water per year as an average annual benefit over the next 30 years. Based on field flow measurements from the NRCS and Oxbow Engineering, the calculated seepage loss is 7.5 cfs through the existing open irrigation canal. Over the 153-day irrigation season, this results in a total leakage of 2,275 acre-feet. Flow loss calculations are provided in Appendix A.

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.

Please see the explanation above in 3a.

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?

There are not currently any permanently established flow measurement devices at the proposed site. The PVID uses a velocity meter device at existing culverts to calculate flows through the canal.

d. Provide detailed descriptions of all proposed flow measurement devices, including accuracy and the basis for the accuracy.

No proposed flow measurement devices will be installed as part of this project.

e. Will annual farm delivery volumes be reduced by more efficient and timely deliveries? If so, how has this reduction been estimated?

Yes, the annual farm delivery volumes will be reduced as the current practice is to convey more water into the lateral and divert more water than is necessary into the turnouts. The proposed pipeline conversion project will eliminate the water losses through the 1-mile section of the Hillside Ditch. The reduction of the 7.5 cfs lost through the open canal will be eliminated. The PVID ditch riders account for this water loss by diverting additional flows into the lateral, usually above the 7.5 cfs loss to ensure users are not left short of water, and subsequently the turnouts along the lateral tend to divert additional water to spread the excess water out so that it does not overwhelm the wasteway and drain system and the end of the lateral.

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

Flow measurements of the Hillside Ditch will be taken at the same three locations where culverts that were used for the initial water loss calculations. The measurements will be taken where the culverts are not submerged using a velocity meter to calculate the velocity and measurement of the flow height in the culvert to determine the cross-sectional area (Q=VA). Flow measurements at the diversion into the lateral and at the end of the newly installed pipe section will show the actual canal losses and can be used to verify the water savings as a result of the pipeline conversion.

(4)**Turf Removal:** Applicants proposing turf removal projects should address:

a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

N/A

b. What is the total surface area of turf to be removed and what is the estimated average annual turf consumptive use rate per unit area?

N/A

c. Was historical water consumption data evaluated to estimate average annual turf consumptive use per unit area? If so, did the evaluation include a weather adjustment component?

N/A

d. Will site audits be performed before applicants are accepted into the program?

N/A

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

N/A

(5) **Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles**: Applicants proposing smart irrigation controllers, controllers with rain sensor shutoff, drip irrigation, or high-efficiency nozzle projects should address:

a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

N/A

b. Was historical water consumption data evaluated to estimate the percent reduction in water demand per unit area of irrigated landscape? If so, did the evaluation include a weather adjustment component?

N/A

c. What types (manufacturer and model) of devices will be installed and what quantity of each?

N/A

d. Will the devices be installed through a rebate or direct-install program?

N/A

e. Will site audits be performed before and after installation?

N/A

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

N/A

(6) **High-Efficiency Indoor Appliances and Fixtures**: Installing high- efficiency indoor appliances and fixtures can provide water savings for municipal water entities where there is significant potential for replacing existing non-efficient indoor appliances and fixtures. Applicants proposing high-efficiency indoor appliance and fixtures projects should address:

a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

N/A

b. What types (clothes washers, shower heads, etc.) of appliances and fixtures will be installed and what quantity of each?

N/A

c. Have studies been conducted to verify the existence of non-efficient appliances and fixtures? Provide published water savings rates for each of these devices and reference the source for each of the device savings rates.

N/A

d. Will the devices be installed through rebate or direct-install programs?

N/A

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

N/A

(7) **Commercial Cooling Systems:** Cooling towers are components of many refrigeration systems with many applications. They dissipate heat to the atmosphere through the evaporative process and are common in manufacturing processes where cooling is required. They are also used for cooling large commercial buildings. Cooling tower structures vary in size, design, and efficiency. Regardless, all cooling towers consume large volumes of water and energy.

Open-circuit or direct contact are the most common types of cooling towers. Water is supplied to the tower after gathering heat and then released in the upper tower levels.

A fan near the base of the tower creates upward airflow. Closed-circuit towers are more efficient and closed-circuit towers with adiabatic cooling are more efficient yet.

Water and energy savings can be achieved by replacing or retrofitting older low efficiency cooling towers. Applicants proposing cooling system projects should address:

a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

   N/A

b. Was historical water consumption data evaluated to estimate the percent reduction in water demand?

   N/A

c. Specify type (manufacturer and model) of cooling tower system to be installed and/or provide a detailed description of the system retrofit plan.

   N/A

Note that an agreement will not be awarded for an improvement to conserve irrigation water unless the applicant agrees to the terms of Public Law 111-11 § 9504(a)(3)(B) (see Section F.2.7. *Requirements for Agricultural Operations under P.L. 111-11 §9504(a)(3)(B).*

The PVID understands and will agree to the terms of Section 9504(a)(3)(B) of Public Law 111-11.

E.1.2 Evaluation Criterion B—Renewable Energy (20 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 No. 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 No. 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.

Note: an applicant may receive points under both Subcriteria No.B.1 and B.2 if the project consists of an energy efficiency component separate from the renewable energy component of the project. However, an applicant may receive no more than 20 points total under both Subcriteria No. B.1 and B.2.

E.1.2.1 Subcriterion No. B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery

Up to 20 points may be awarded for projects that include constructing or installing renewable energy components (e.g., hydroelectric units, solar-electric facilities, wind energy systems, or facilities that otherwise enable the use of renewable energy). Projects such as small-scale

solar resulting in minimal energy savings or production will be considered under Subcriterion No. B.2.

Describe the amount of energy capacity. For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

N/A

Describe the amount of energy generated. For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate. Please explain how the power generated as a result of this project will be used, including any existing or planned agreements and infrastructure.

N/A

Describe the status of a mothballed hydropower plant. For projects that are brining mothballed hydropower capacity back online, please describe the following:

- Clearly describe the work that will be accomplished through the WaterSMART Grant. Note: normal OM&R activities are not eligible for funding. The work being proposed must be an investment.

  N/A

- Provide information about the capacity (in kilowatts) of the existing hydro system and the expected capacity once it is brough back on-line.

  N/A

- Provide information about the duration that the hydro system has been offline and the reasons why it has been mothballed. Please include any regulatory reporting or filings (e.g., FERC filings) or other documentation regarding the system.

  N/A

Describe any other benefits of the renewable energy project. Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:

- How the system will combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions

  See answer to E.1.2.2 below.

- Expected environmental benefits of the renewable energy system

Implementing the proposed pipeline project would allow the PVID to control flows within the Hillside Ditch and convey only the necessary flows in the lateral system to eliminate or significantly reduce the amount of water discharged back into the Milk River. As a result, excess discharges from the PVID irrigation system to the Milk River would be minimized and would reduce the amounts of sediment, nitrogen, phosphorous and chemicals discharged to the Milk River to effectively facilitate better spawning habitat, aquatic life, fish populations and water quality.

- Any expected reduction in the use of energy currently supplied through a Reclamation project.

  See answer to E.1.2.2 below.

- Anticipated benefits to other sectors/entities.

  The proposed project will have a beneficial impact on the local economy by furnishing short-term work during construction of the project and long-term allotments for sustainable agricultural production. Sustaining agricultural production and increasing ag-driven revenue generation are crucial to maintaining rural communities in Montana. All the PVID users rely heavily on ag-based commerce. The proposed project will protect the source of water supply to the PVID system to preserve the agricultural crops and revenue. The protection of this revenue generated by the project will tie back into the local economy by way of commercial trucking, local implement dealers, and local businesses. The project will also prevent significant revenue losses to PVID Hillside Ditch users in typical annual revenue by providing a consistent flow of water for irrigation and providing the necessary amount of water to 500 acres that is currently underserved. Consistent flows from the proposed project will facilitate improved crop production, increase revenues to producers, and stimulate the local and regional economies. The PVID Hillside Ditch users primarily grow alfalfa hay. Discussions with local growers within the area indicate that the locally grown hay will be distributed throughout the State of Montana. Increases in crop production will have a direct impact on a statewide basis, as the crops produced are used throughout the State and contribute to the local and state tax bases from increased revenues.

  The proposed rehabilitation project will provide significant financial, safety, and operational improvements to the PVID users. The conversion of the open canal to a closed pipeline system will ensure that the agricultural revenues from irrigated crops and pasture lands will continue to support over $7 million in annual revenues that result directly from alfalfa on the 8,300 acres within the PVID delivery system. The proposed pipeline conversion project will reduce the number of trips that ditch riders must make to operate the headgate and visually inspect the canal for debris/blockage. The proposed project will significantly reduce the amount of time that the PVID spends on operation and maintenance, allowing them to focus on other improvements and operations within the PVID system that need their attention. Additional local benefits include boosting the local economy through workers, material suppliers, truckers, and other temporary workers contributing to local stores, restaurants, and gas stations during construction of the proposed project.

- Expected water needs, if any, of the system.

  N/A

AND/OR

E.1.2.2 Subcriterion No. 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.

The significant water losses occurring within the 1-mile section of the Hillside Ditch reduces available water levels and the corresponding pressure head within the lateral delivery system. As a result, irrigation pumps along the lateral are required to operate at a higher demand to overcome this pressure head deficiency, thus utilizing an unnecessary amount of electricity. Based on preliminary calculations, increased pressure head created by the pipeline at downstream turnouts and pumps will subsequently reduce pumping power consumption by up to 25%. Converting the existing lateral to a pipeline and providing enough flow to pressurize the pipeline will increase pressure head to approximately 20 psi, which will significantly improve pump performance downstream. Pumping demand will decrease because of reduced suction head at the pump. The current condition requires pumps to use suction pressure to lift water out of the lateral and into a pipeline to feed sprinkler irrigation systems. If the suction lift is eliminated and the pressure head is increased to 20 psi, then the pump needs less pressure to force water out to the sprinkler lines. For example, a typical center pivot needs to run at approximately 45 psi. The relative head differential for the existing pump requirement is to deliver 45 psi + 2 psi (the elevation of the suction lift) = 47 psi. After the pipeline is installed, the pump requirement will be reduced to 25 psi (45 psi – 20 psi). Therefore, the proposed improvements will provide an **electricity conservation** of up to 25% of the current usage as downstream irrigation pumps can operate at improved efficiencies.

Additionally, all water conveyed to the Hillside Ditch Lateral is pumped from the PVID main canal via a 100-horsepower centrifugal pump. Implementation of the proposed project would result in less water being pumped to the Hillside Ditch Lateral through the elimination of the 7.5 cfs of seepage that is currently occurring in the open canal section. Assuming a pump and motor efficiency of 75% and using the pump power calculation equation of:

$$kw - hr = \frac{0.746 * Flow\ (gpm) * TDH\ (feet)}{3960 * Pump\ Efficiency * Motor\ Efficiency}$$

The total dynamic head of the pump was assumed to be 10 feet as the elevation lift is not significant to convey flows from the PVID main canal to the Hillside Ditch Lateral. The calculated kw-hrs saved over a 153-day irrigation season as a result of reducing the pumping flow rate by 7.5 cfs equates to 31,065 kw-hrs. The existing pump has a

manually operated Variable Frequency Drive (VFD) and therefore reducing the pumping rate by the 7.5 cfs is feasible and would result in significant energy savings.

- How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions.

  The proposed project will provide a pressurized pipeline that will reduce the energy consumption of pumps along the 1-mile Hillside Ditch lateral along with reducing the pumping requirement of the main pump that conveys water from the PVID main canal to the Hillside Ditch Lateral. In addition, the more efficient use of the water within the PVID system will reduce the amount of waste from the system that will also reduce the amount of sediment and nutrients that are transported back to the Milk River.

  The proposed project reduces greenhouse gas emissions in three ways. First the additional water that is saved can be utilized by downstream water users with the PVID system to increase crop production which will create more vegetation to sequester carbon. Second, the pressurized pipeline will increase pumping efficiency and along with the reduction in the pump flow rate of the pump that conveys water from the PVID main canal to the Hillside Ditch Lateral will reduce the electricity use which has a direct correlation to less carbon dioxide production. Third, the PVID will not have to make as many trips to the Hillside Ditch headgate to make adjustments and the check the canal for debris and blockages, saving vehicle miles that will burn less overall fuel and lower carbon dioxide emissions from PVID vehicles.

- 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?

  The proposed project will result in reduced pumping. The Hillside Ditch Lateral pump consists of a suction pump that is powered by a 100 hp motor with a manually operated VFD. The conversion of the 1-mile section of the Hillside Ditch Lateral from an open canal to a closed pipeline will result in the eliminate of 7.5 cfs of seepage. Currently, the pump must convey the additional volume of water to try to meet the water demands of the downstream users and even with this additional volume of water being pumped the users are left underserved. The reduction in seepage will directly correlate to a reduction in the required pumping volume and result in the conservation of 31,065 kWh each year.

- 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.

  The energy savings would be realized at the point of diversion pump that conveys flows from the PVID main canal to the Hillside Ditch Lateral along with any proposed pumps located along the 1-mile section of the Hillside Ditch lateral.

- Does the calculation include any energy required to treat the water, if applicable?

  N/A

- Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.

  Implementation of the proposed improvements will significantly benefit the PVID's management of the irrigation water delivery network. The existing open canal is experiencing operational difficulties, unsafe conditions and is in a remote location. By converting the open canal to a closed pipeline, the PVID's management issues would be greatly reduced. It is anticipated that PVID personnel would still be required to make trips to Hillside Ditch lateral headgate for general operation and maintenance; however, the PVID conservatively estimates that the number of trips would be reduced by 20% based on experience with the prior replacement of the upstream pipeline section. PVID personnel typical make 2 trips per day to the headgate and canal to make gate adjustments and to inspect for debris collection and blockage issues. After the canal is converted to a closed pipeline system, the 14 trips per week could be reduced to only 11 trips per week. From PVID's main office in Chinook to the project location is about 18 miles round-trip. The new pipeline would reduce vehicle mileage by up to 54 miles per week and 7 hours per week of labor. At an average operation of 153 days during the irrigation season, that equates to over 396 miles traveled that will not be necessary and in turn reducing greenhouse gas emissions.

- 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).

  N/A

E.1.3 Evaluation 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:

  The proposed conversion of the 1-mile section of the Hillside Ditch from an open canal to a closed pipeline will provide a significant water savings of an average of 7.5 cfs or 2,275 acre-feet per year. By saving this water, the PVID will have an additional 2,275 acre-feet that will be available for crops during peak irrigation demand and periods of drought and will restore flows to the downstream end of the lateral. The lateral water provide water to 900 acres of which 500 acres are severely underserved. Converting the existing lateral to a pipeline will increase water volumes and pressure head within the lateral, which in turn, will elevate irrigation efficiency for downstream users. This increased efficiency will provide the necessary amount of irrigation water to 500 acres of prime agricultural farmland that currently cannot be fully served by the lateral.

  The PVID irrigation system is comprised of 8,300 acres of irrigable lands with an allowable water use of 200 cfs (Water Rights 40J 40834-00, 40J 40835-00, 40J 40836-00, 40J 40837-00, 40J 40838-00, 40J 40845-00, 40J 40848-00 and 40J 30146967). The

proposed project will allow the PVID to maximize water delivery efficiency, leading to increased crop production and on-farm irrigation efficiency. An assessment on crop returns was performed for the district. With the implementation of the proposed Hillside Ditch Lateral to Pipeline Conversion Project, it is estimated that an increase in crop production will occur because of increased delivery efficiency due to the ability to provide adequate flows to these fields as well as conserved water that will be used for on-farm irrigation. During drought years with below average snowpack and precipitation or other water challenging years, the available water may not be adequate to provide the full allotment of water to the irrigators. During these drought years the water users would be left short of water and not be able fully develop their crops. The additional water saved from this project would help facilitate water delivery to other areas within the PVID during drought years.

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

  One of the prominent features of climate change that we have noticed and that has been scientifically proven is that as climate change continues to occur, winter months are shortened, and runoff tends to occur earlier than it did in the previous decade (documented in the 2017 Montana Climate Assessment located https://montanaclimate.org/chapter/water). When this happens, river flows fall off earlier than previously and water rationing within irrigation districts becomes more prevalent as river flows drop off going into the hotter summer months of July, August, and September. The PVID has focused on irrigation efficiency as their primary defense against drought and climate change. As the PVID system becomes more efficient, more water is available to the PVID users to reduce the impacts of water rationing due to drought. Although water rationing will not be completely avoided, the more water that is saved will result in less water rationing that has to occur.

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

  Yes, see response immediately above.

- 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).

  One of the prominent features of climate change that we have noticed and that has been scientifically proven is that as climate change continues to occur, winter months are shortened, and runoff tends to occur earlier than it did in the previous decade (documented in the 2017 Montana Climate Assessment https://montanaclimate.org/chapter/water). When this happens, river flows fall off earlier than previously and water rationing within irrigation districts becomes more prevalent as river flows drop off going into the hotter summer months of July, August, and September.

  The impacts to water supply availability due to climate change has been documented in the 2017 Montana Climate Assessment, which is located https://montanaclimate.org/chapter/water. Based on this report, there are several major findings that include:

- Montana's snowpack has declined over the observational record, since the 1930s.
- Continued warming temperatures will reduce snowpack at mid and low elevations.
- Historical observations show a shift toward earlier snowmelt and an earlier peak in spring runoff.
- Earlier onset of snowmelt and spring runoff will reduce late-summer water availability.
- Multi-year and decadal-scale droughts have been and will continue to be a natural feature of Montana's climate.

Changes in snowpack and runoff timing will likely increase the frequency and duration of drought during late summer and early fall.

- 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.

The proposed project includes both green and sustainable infrastructure to improve community climate resilience. This project will save precious water that can be used to mitigate the magnitude of downstream water rationing and underserved acres during periods of peak demand in the late summer when water levels in the river are lower. The PVID delivery system will need to be as efficient as possible to combat the ongoing water rationing and reduced crop production issues to reduce the interruption of water delivery to the producers served by the system.

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

The PVID has focused on irrigation efficiency as their primary defense against drought and climate change. As the PVID system becomes more efficient, more water is available to the PVID users to reduce the impacts of water rationing due to drought and the inability to efficiently deliver water to the downstream users. Although water rationing will not be completely avoided, the more water that is saved will result in less water rationing that has to occur. This project will save water consistently that will leave more water available to downstream PVID users to protect against rationing due to drought and/or climate change.

- 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?

In recent years, drought conditions and climate change have had a significant impact on the users within the PVID system. Water rationing and the underserving of the acres at the downstream end of the Hillside Ditch lateral has become an annual occurrence within the PVID, as water demands continue to increase due to increased heat index and warmer weather conditions while the water availability continues to decrease due to climate change which continues to result in earlier runoff and longer periods of low-flow conditions in the river. The PVID has turned its focus to making its system more efficient to be able to reduce the impact of water rationing and make more water available to downstream users by not wasting or losing water in the system.

The proposed pipeline conversion project for the 1-mile length of the Hillside Ditch lateral would conserve water through the elimination of seepage losses or irrigation

water flowing through the open canal with underlying porous soils. The PVID has historically had to divert extra water from the PVID main canal as the water loss due to seepage through the canal had to be accounted for. The PVID operators would release additional flows at the headgate into the Hillside Ditch lateral to make sure the users had adequate water, even though it resulted in the wasting of additional water at the end of the system. The proposed improvements will provide the PVID with the infrastructure to properly manage the water resource and be able to make decisions on where the 2,275 acre-feet of conserved water will go (left in Fresno Reservoir, the Milk River, or put to beneficial use).

The proposed project will significantly benefit the PVID's management of the irrigation water delivery network through decreased operation and maintenance tasks, debris removal, and trying to offset for the seepage losses. The additional management demands require unnecessary trips to the headgate and open canal system and the experienced PVID ditch riders spend approximately 7 additional hours per week on the operation of the ditch. The time that ditch riders would save through the implementation of the project would allow the PVID to put these resources to use on other areas of PVID's delivery system to improve the water delivery efficiency of the entire system.

- 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.

The proposed project will provide water conservation benefits that can be left in the upstream Fresno Reservoir for storage outside of peak irrigation demand periods and released to the Milk River later in the summer months. Due to the severe seepage losses that occur through the 1-mile section of the Hillside Ditch lateral, the downstream acres are left underserved. The installation of a closed pipeline system through this section of the existing canal will eliminate the seepage losses and allow for these 500 acres downstream to receive adequate irrigation water to achieve full crop production.

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

  The estimated quantity of additional supply the project will provide is 2,275 acre-feet of water per year as an average annual benefit to the PVID over the next 30 years. Based on flow measurements performed by the NRCS and Oxbow Engineering, the seepage rate through the porous soils of the 1-mile portion of the Hillside Ditch lateral is 7.5 cfs. The total leakage amounts to approximately 2,275 acre-feet of water wasted annually based on a 153-day irrigation season. The installation of a closed pipeline system will allow the PVID to more efficiently deliver water to the downstream users of the Hillside Lateral. The volume of conserved water will be stored in Fresno Reservoir and can be utilized by the PVID later in the irrigation season to satisfy water demands of the users or released back to the Milk River.

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

The installation of a closed pipeline system is the key mechanism that the PVID will utilize to leave the conserved water in the upstream storage reservoir or utilize the conserved water to alleviate water demands further downstream in the PVID delivery system. The pipeline also allows for the currently underserved acres at the downstream end of the Hillside Ditch lateral to receive the necessary amount of water achieve full crop production.

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

The proposed project will provide water conservation that can be used to assist in complying with the Milk River Project. The Milk River Project irrigates about 140,000 acres that includes the land irrigated by eight irrigation districts, the Fort Belknap Indian Community, Bowdoin Wildlife Refuge, municipalities, and individual state and private pump contracts. There are also additional tribal authorized purposes identified in the 2017 Blackfeet Compact that are being established.

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

The water users at the end of the Hillside Ditch Lateral are currently not being served their water allotment due to the inability lateral to convey it due to the severe seepage losses. While there is currently no litigation over these underserved acres, as drought conditions continue to worsen litigation could be used against the PVID as a means to mitigate these adverse effects. The proposed project will eliminate the seepage losses and allow the PVID to provide the full water allotment to these 500 acres and help prevent any future water-related conflicts.

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).

The proposed project will provide water conservation benefits that can be left in the Milk River and Fresno Reservoir outside of peak irrigation demand periods. The additional water will benefit the Milk River ecology by providing higher water levels in the river system to support fish and wildlife habitats. The Pallid Sturgeon is an endangered species and is one of the rarest fishes in North America and was federally listed as endangered in 1990. The Pallid Sturgeon is known to only occur in the Missouri River, the Mississippi River downstream of the Missouri River, and the lower Yellowstone River. The Milk River is ecologically important to the Missouri River downstream of Fort Peck Dam as it contributes flows, sediment, and warmer water temperatures necessary for the recovery of the Pallid Sturgeon. Water conservation efforts by PVID will leave additional flows in the Milk River outside of the peak irrigation

demand periods to facilitate the flows into the Missouri River downstream of Fort Peck Dam to enhance the ecology for Pallid Sturgeon.

- 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.).

  The proposed project will involve water conservation and a management improvement component that will promote healthy lands and soils that will also protect the PVID's water supply. The proposed pipeline conversion improvements will allow the PVID to eliminate the significant water losses flowing through the Hillside Ditch and providing an adequate water supply to the downstream users, promoting healthy agricultural crop production, and minimizing the amount of waste flows from the system which will minimize the amount of erosion that occurs from discharges into drains and wasteways. The PVID system relies on water stored in Fresno Reservoir and released to the Milk River for diversion into their system. Fresno Reservoir is located 14 miles west of Havre and has a storage volume of 127,200 acre-feet. The conservation of 2,275 acre-feet as a result of this project will allow this volume of water (2% of the reservoir's storage capacity) to be stored in the reservoir for a longer period of time and released later in the irrigation season. The delayed release of water from Fresno Reservoir to the Milk River later in the summer will also increase flows in the river.

  The proposed project provides a unique opportunity to save water seepage losses through the canal due to the porous underlying soils. The PVID is required to supply more water to the Hillside Ditch lateral because they do not have the ability to supply the exact amount of water that is needed along with having to account for the seepage losses. Thus, during certain periods of the year that are outside of the peak irrigation demand, more water is diverted from the Milk River than is necessary to fulfill the demand. When this happens, much of this water is spilled from the system and is lost to evaporation and seepage. The remaining water is discharged back to the Milk River in the form of higher temperature water that contains significant amounts of nutrients and sediment. The proposed project will minimize discharges back to the river by being able to supply the exact amount of water to downstream users more efficiently without having to account for seepage losses.

- Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?

  N/A

- Please describe any other ecosystem benefits as a direct result of the project.

  This project will improve water quality in the Milk River. Nutrient standards for many of Montana's rivers and streams are documented by MDEQ and expressed as total ammonia nitrogen in DEQ-7 that is dependent on river pH. Phosphorous is identified under ARM 17-30.637(1)(e) as to "create condition which produce undesirable aquatic life". Irrigation water draining into the Milk River from the PVID irrigation system waste flows may be higher in temperature and contain sediment, nitrogen, phosphorous and spray chemicals. Fertilizer containing nitrogen and phosphorous is a common practice on agricultural fields. Nutrients such as nitrogen and phosphorous are introduced by farmers who are fertilizing their fields and chemicals are introduced by both the farmers and the PVID as necessary tools to manage weeds and moss. The irrigation of these fields may lead to high concentrations of these nutrients to return to the canal

system, which discharges directly into the Milk River. Temperature is also important, as warmer temperatures create toxic conditions for fish and wildlife and facilitate toxic algal blooms. Water temperatures in irrigation canals tend to be warmer than the natural stream channels due to slower moving water and shallow depths that contributes to warming water temperatures. Concentrations of these pollutants may increase within the PVID system and may be significant contributors at the PVID irrigation system discharge locations. Implementing the proposed pipeline project would allow the PVID to control flows within the Hillside Ditch and convey only the necessary flows in the lateral system to eliminate or significantly reduce the amount of water discharged back into the Milk River. As a result, excess discharges from the PVID irrigation system to the Milk River would be minimized and would reduce the amounts of sediment, nitrogen, phosphorous and chemicals discharged to the Milk River to effectively facilitate better spawning habitat, aquatic life, fish populations and water quality.

Note: Projects that are intended to improve streamflows or aquatic habit, and that are requesting $500,000 or more in Federal funding, must include information about plans to monitor the benefits of the project. Please describe the plan to monitor improved streamflows or aquatic habit benefits over a five-year period once the project has been completed. Provide detail on the steps to be taken to carry out the plan.

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?

The proposed conversion of the 1-mile section of the Hillside Ditch from an open canal to a closed pipeline will provide a significant water savings of an average of 7.5 cfs or 2,275 acre-feet per year. By saving this water, the PVID will have an additional 2,275 acre-feet that will be available for crops during peak irrigation demand and periods of drought and will restore flows to the downstream end of the lateral. The lateral water provide water to 900 acres of which 500 acres are severely underserved. Converting the existing lateral to a pipeline will increase water volumes and pressure head within the lateral, which in turn, will elevate irrigation efficiency for downstream users. This increased efficiency will provide the necessary amount of irrigation water to 500 acres of prime agricultural farmland that currently cannot be fully served by the lateral.

The PVID irrigation system is comprised of 8,300 acres of irrigable lands with an allowable water use of 200 cfs (Water Rights 40J 40834-00, 40J 40835-00, 40J 40836-00, 40J 40837-00, 40J 40838-00, 40J 40845-00, 40J 40848-00 and 40J 30146967). The proposed project will allow the PVID to maximize water delivery efficiency, leading to increased crop production and on-farm irrigation efficiency. An assessment on crop returns was performed for the district. With the implementation of the proposed Hillside Ditch Lateral to Pipeline Conversion Project, it is estimated that an increase in crop production will occur because of increased delivery efficiency due to the ability to provide adequate flows to these fields as well as conserved water that will be used for on-farm irrigation. During drought years with below average snowpack and precipitation or other water challenging years, the available water may not be adequate to provide the full allotment of water to the irrigators. During these drought years the water users would be left short of water and not be able fully develop their

crops. The additional water saved from this project would help facilitate water delivery to other areas within the PVID during drought years.

- Does the project seek to improve ecological resiliency to climate change?

Yes, the proposed project will reduce diversions from the Milk River during non-peak irrigation demand and allow the conserved water volume to remain stored in the upstream Fresno Reservoir. The installation of a pipeline within the existing open canal section will eliminate the significant seepages losses of 7.5 cfs or 2,275 acre-feet each year that is occurring as water is conveyed through the canal. This conserved volume of water will be stored in Fresno Reservoir. Recent drought impacts of reduced snowpack, earlier spring runoff, and warmer temperatures have caused the PVID to deplete their allotment of stored water in Fresno Reservoir earlier which often leads to water rationing or earlier water shutoff of the system than what is desirable to get a third cutting of alfalfa hay. The additional volume of stored water in Fresno Reservoir can be released later in the summer months help combat these adverse impacts of climate change that is affecting agricultural production for the PVID water users.

- Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?

The proposed project reduces greenhouse gas emissions in three ways. First the additional water that is saved can be utilized by downstream water users with the PVID system to increase crop production which will create more vegetation to sequester carbon. Second, the pressurized pipeline will increase pumping efficiency that will reduce the electricity use which has a direct correlation to less carbon dioxide production. Third, the PVID will not have to make as many trips to the Hillside Ditch headgate to adjust and check the canal for debris and blockages, saving vehicle miles that will burn less overall fuel and lower carbon dioxide emissions from PVID vehicles.

- Does the proposed project include green or sustainable infrastructure to improve community climate resilience?

The proposed project includes both green and sustainable infrastructure to improve community climate resilience. This project will save precious water that can be used to mitigate the magnitude of downstream water rationing and mitigating negative effects of the underserved acres. In addition, the more efficient use of the water within the PVID delivery system will reduce the amount of waste from the system that will also reduce the amount of sediment and nutrients that are transported back to the Milk River via wasteways and drains.

- Does the proposed project contribute to climate change resiliency in other ways not described above?

The proposed project is part of a larger planned project by the PVID to modernize their irrigation system and make it more efficient to address the sustainability of the water supply. The more water that can be saved within the system will allow the PVID to reduce and minimize the overall impact of drought conditions throughout the Milk River Basin.

The proposed project will provide water via conservation that can be used for agriculture, downstream industrial use, environmental uses such as the preservation

of fish and wildlife habitat, and to facilitate recreation and navigation in the Milk River.

E.1.4 Evaluation 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) 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 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]

  Identified Disadvantaged Community: Fort Belknap Indian Reservation

- 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 proposed project will conserve water upstream of the Fort Belknap Indian Reservation and as such, will make more water available to the Fort Belknap Indian Community. The Milk River Basin is a highly regulated, and often water-short basin. The proposed project will conserve up to 7.5 cfs which at times will be left in the Milk River, providing an opportunity for the downstream Fort Belknap Indian Community to benefit from the increased water availability in the Milk River.

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 proposed project is located upstream from the Fort Belknap Indian Reservation. The Fort Belknap Indian Community utilizes the Milk River for drinking water and or irrigation. The proposed project will provide an increase in water supply sustainability as the conserved 7.5 cfs from this project will at times be left in the Milk River, providing an opportunity for the downstream Fort Belknap Indian Community to benefit from the increased water availability in the Milk River.

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

  N/A

- 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?

  N/A

E.1.5 Evaluation 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 programs that may be available. Applicants may receive maximum points under this criterion by providing the information described in the bullet points below. *Applicants are not required to have assurances of NRCS assistance by the application deadline to be awarded the maximum number of points under this sub- criterion.* Reclamation may contact applicants during the review process to gather additional information about pending applications for NRCS assistance if necessary.

Note: On-farm improvements themselves are not eligible activities for funding under this NOFO. This criterion is intended to focus on how the WaterSMART Grant project will complement ongoing or future on-farm improvements. NRCS will have a separate application process for the on-farm components of selected projects that may be undertaken in the future, separate of the WaterSMART Grant project.

If the proposed project will complement an on-farm improvement eligible for NRCS assistance, please address the following:

- Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies.
    - Provide a detailed description of the on-farm efficiency improvements.

      The Hillside Ditch Lateral that is part of PVID's delivery system provide water to approximately 900 acres for irrigation, of which 500 acres are currently underserved. The PVID currently has no farmers who are working with the local NRCS to put in on-farm improvements. However, several farmers have taken advantage of the NRCS EQIP program in the past to install center pivots on lands served by the PVID and many of the farmers within the PVID are open to the potential support through NRCS programs. The installation of a closed pipeline will provide pressured flows through the pipeline which are more conducive to the installation of a center pivot with the water being pumped from the pipeline. The pressured flows flow allow for more efficient pumping and reduced energy consumption.

      The first mile of the Hillside Ditch Lateral was piped using NRCS EQIP funding assistance in 2010. The NRCS designed the first mile length of the lateral system. Funding was only available to complete the first mile of the lateral. This project will utilize the original NRCS design parameters (flow, size, pipe type, etc.) to complete the second mile of piping of the lateral.

    - Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?

      The farmers typically request technical and financial assistance from the NRCS for their on-farm efficiency projects. The local NRCS either performs the technical assistance with in-house staff or utilizes Technical Service Providers. We are not aware of any request for technical or financial assistance from the NRCS at the present time, but the PVID users remain open to potential support through NRCS programs.

    - If available, provide documentation that the on-farm projects are eligible for NRCS assistance, that such assistance has or will be requested, and the number or percentage of farms that plan to participate in available NRCS programs.

      After speaking with Russell Snedigar (July 22, 2022), the local NRCS District Conservationist in Chinook, past projects involving the construction of pressurized pipelines, land leveling, and center pivots have been completed through assistance from the NRCS to implement these on-farm conservation and efficiency projects through the EQIP program. The local NRCS has provided additional services within the PVID that includes the installation of the first 1-mile section of pipeline in the Hillside Ditch Lateral in 2010. The proposed pipeline conversion of the remaining mile of the Hillside Ditch Lateral would allow for additional pressurized flow that on-farm projects could utilize to make improvements.

    - Applicants should provide letters of intent from farmers/ranchers in the affected project areas.

None available at this time.

- Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.
    - Will the proposed WaterSMART project directly facilitate the on-farm improvement? If so, how? For example, installing a pressurized pipe through WaterSMART can help support efficient on-farm irrigation practices, such as drip-irrigation.

      The conversion of the open canal to a closed pipeline system will provide pressurized flows for the 1-mile section of the project and could directly facilitate on-farm improvements such as center pivots. The pressurized flow in the pipeline would allow for more efficient pumping operations from reduced pressure head requirements and result in less energy being required to run the pump.

      OR

    - Will the proposed WaterSMART project complement the on-farm project by maximizing efficiency in the area? If so, how?

      The pipeline conversion project will maximize efficiency in this area by providing mitigation to conserve 2,275 acre-feet per year, provide an increase to water delivery efficiency, and provide pressured water delivery to facilitate on-farm efficiency.

- Describe the on-farm water conservation or water use efficiency benefits that are expected to result from any on-farm work.
    - Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.

      A conservative estimate of energy conservation indicates the proposed improvements will reduce pump electricity demand by 25% for on-farm systems. Converting the existing lateral to a pipeline and providing enough flow to pressurize the pipeline will increase pressure head to approximately 20 psi, which will significantly improve pump performance along the pipeline. Pumping demand will decrease because of reduced suction head at the pump. The current condition requires pumps to use suction pressure to lift water out of the lateral and into a pipeline to feed sprinkler irrigation systems. If the suction lift is eliminated and the pressure head is increased to 20 psi, then the pump needs less suction pressure to force water out of the sprinkler lines. For example, a typical center pivot needs to run at approximately 45 psi. The relative head differential for the existing pump requirement is to deliver 45 psi + 2 psi (the elevation of the suction lift) = 47 psi. The future condition with the pipeline will only have a pump requirement of 45 psi – 20 psi = 25 psi.

- Please provide a map of your water service area boundaries. If your project is selected for funding under this NOFO, this information will help NRCS identify the irrigated lands that may be approved for NRCS funding and technical assistance to complement funded WaterSMART projects.

  A map of the proposed project area is included as Figure 1. The water service area boundary is not provided on the map.

Note: On-farm water conservation improvements that complement the water delivery improvement projects selected through this NOFO may be considered for NRCS funding and technical assistance to the extent that such assistance is available. For more information, including application deadlines and a description of available funding, please contact your local NRCS office. See the NRCS website for office contact information, http://www.nrcs.usda.gov/conservation-basics/conservation-by-state/state-offices.

E.1.6 Evaluation 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 proceeding upon entering into a financial assistance agreement. Please 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: please 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.

  The proposed Pipeline Conversion Project will consist of the following tasks:

  - Planning – The project will require a planning level effort to coordinate activities for the project up-front following award and contracting with Reclamation.
  - Site Survey – The proposed pipeline conversion project will need the existing irrigation canal and structure located along the canal to have a topographic survey performed. The proposed pipeline in some locations will deviate from the current location of the irrigation canal and require a new easement document to be created. The necessary public land survey corners will be surveyed to facilitate the development of the easement documents.
  - Design – The proposed pipeline conversion project will need to be designed to reflect the proper alignment and grade, hydraulic profile, and size requirements. A set of plans and specifications will be developed and submitted to PVID and Reclamation for approval.
  - Permitting – The necessary permits will need to be obtained to facilitate construction of the project. A copy of the permit documents will be submitted to PVID and Reclamation. Permitting will include environmental and cultural resource compliance.
  - Construction – The project will be publicly advertised, and a General Contractor will be hired to perform all construction work. The Contractor will be responsible for securing the materials, equipment, and labor necessary for completing the project according to the plans and specifications.
  - Construction Administration – An Engineer will be needed to provide construction administration, inspection of the work, and ensure compliance with the plans and specifications. Photos, submittal approvals, daily logs and

other construction information will be saved and compiled throughout the project.

- As-Built Documentation – An Engineer will be needed to perform an as-built verification of the new pipeline. A construction completion report will be submitted to PVID and Reclamation.
- Construction and Grant Close-Out – The PVID or consultant will be required to ensure that all the requirements of the construction and WaterSmart grant have been completed and submitted to Reclamation for approval.

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

For each of the permits listed below, the PVID or General Contractor will work with each permitting agency to determine whether a formal permit is needed for the construction of the proposed project. Although it is not anticipated that any permits will be needed except for the SWPPP, we have provided the following list of permits that the PVID will follow up on if the grant is awarded. If needed, the following permits may be obtained with assistance from the engineer during the design process:

SPA 124 Permit – The Montana Department of Fish, Wildlife & Parks requires a permit for any activity that physically alters or modifies the bed or banks of a perennially flowing stream for a legal public entity. Consultation will be performed, but the activities proposed herein are likely exempt from this rule as the construction will take place in existing manmade irrigation canals. A Montana joint application form will need to be filled out and submitted to FWP for review.

404 Permit – The Army Corps of Engineers (USACE) requires a permit for any activity that will result in the discharge or placement of dredged or fill material into waters of the United States, including wetlands. Consultation will be performed, but the activities proposed herein are likely exempt as stated in CRF 323.4(a)3. A Montana joint application form will need to be filled out and submitted to the USACE for a determination.

318 Authorization – The Short-Term Water Quality Standard for Turbidity requires a permit for any construction activities that will cause temporary violations of state surface water quality standards for turbidity. Since no water will be in the irrigation canals at the time of construction, no turbidity permit will be required.

Storm Water Discharge General Permit – State Storm Water Rules require a storm water discharge permit under the requirements of the 2018 General Permit for any construction project over one acre in total disturbance that discharges into State waters. A Notice of Intent form and Stormwater Pollution Prevention Plan Form along with all attachments and supplements will need to be submitted to the Montana Department of Environmental Quality.

Montana Sage Grouse Habitat Conservation Program - The program's role is to implement Montana's Sage Grouse Conservation Strategy including the conservation, restoration, and mitigation of changes to sage grouse habitat because of development. Montana has a website https://sagegrouse.mt.gov/ProgramMap that will need to be consulted prior to construction activities. The project is inside the Executive Order (EO) General Habitat, but it is not a core area. Thus, permitting is not necessary.

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

  The proposed project will require the assistance of an engineer for the design of the new pipeline system. A site visit/topographic survey to inspect and take measurements of the exiting irrigation canal and proposed pipeline route will need to be completed, followed by the design of the proposed pipeline (including hydraulics, geometric layout of the pipeline, connection details, earthwork grading, road crossings, structure details if necessary, and details, etc.), followed by the development of plans and specifications for the proposed pipeline project.

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

  N/A

- 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?

Activity	Date(s)
WaterSmart Grant Due Date	Feb 22, 2024
Evaluate Grant Applications -- BOR	Feb 22, 2024 - Sep 2024
Grant Award	Oct 2024
Contract Execution	Nov 2024 - Feb 2025
Project Initiation	Mar 2025
Project Kickoff Meeting	Apr 2025
Project Site Survey	May 2025
Project Design	May 2025 - Sep 2025
Environmental/Cultural Resource Compliance	Jul 2025 - Dec 2025
PVID and Reclamation Plans Review	Jan 2026 - Mar 2026
Final Plans & Specifications	Apr 2026 - May 2026
General Contractor Advertisement and Contracting	Jun 2026 - Jul 2026
Begin Construction	Sep 2026
Mid-Point Construction (50%)	Dec 2026
End Construction (100%)	Apr 2026
Construction Administration	Sep 2026 - Apr 2027
Construction Closeout	Apr 2027
As-Built Verification	May 2027
Construction Completion Report	May 2027
Grant Closeout	Jun 2027
Project Completion	Jun 2027

E.1.7 Evaluation 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:

  The PVID manager attends and actively participates in training seminars, courses, and conferences such as Montana Water Resources Association (MWRA), Montana Association of Dams and Canal Systems (MADCS), Milk River Joint Board of Control (MRJBOC), the US BOR Montana Area Office's Dam Operator Trainings, and watershed symposiums throughout Montana where they collaborate and share information. The PVID is committed to sharing the success and implementation of this project with other districts and water user associations throughout the region to assist them in their planning and water delivery efforts.

- 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?

  The PVID Board, its water users, the Blaine County Conservation District and the NRCS have all shown support for this project. The PVID Board will make financial, procurement, and contracting decisions as well as provide overall management of the project. The Blaine County CD and NRCS have been consulted on the project and will continue to be consulted throughout the project.

- What is the significance of the collaboration/support?

  The Blaine County Conservation District works with not only other water users in the area but also shares their success stories with the other conservation districts throughout the State through the Montana Association of Conservation Districts. This information will be shared with the other conservation districts who in turn will share this information with nearly all the remaining irrigation districts and water user associations throughout the State of Montana.

  The NRCS is watching this project closely to determine the actual benefits of the proposed pipeline conversion project will extend the benefits of the previously installed section of pipeline that the NRCS helped to design and fund construction of. The NRCS is a national organization that provides training and knowledge sharing throughout the US, and this information would be shared with the national program and neighboring states that could benefit a broad audience of water users.

- Will this project increase the possibility/likelihood of future water conservation improvements by other water users?

  The implementation of this project and the sharing of its benefits through the Montana Association of Dams and Canal Systems (MADCS), Montana Water Resources Association, the Montana Association of Conservation Districts, Milk River Joint Board of Control, and the NRCS provides a large audience to share this information with in order for them to learn from the project and evaluate pipeline conversion project designs for a number of irrigation districts and water users associations throughout the western US.

- Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).

Letters of support are attached as Appendix C.

E.1.8 Evaluation 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:

  The Paradise Irrigation District is part of the Bureau of Reclamation Milk River Project and is located on a Federal Facility. The District was created in 1922.

- Does the applicant have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation?

  The PVID has a current water service contract with Reclamation to obtain water from Fresno Reservoir via the Milk River.

- If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?

  N/A

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

  Yes, the proposed project will benefit the PVID which is part of the Milk River Project.

- Is the applicant a Tribe?

  No

D.2.2.2.7 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).

Flow measurements of the Hillside Ditch will be taken at the same three locations where culverts that were used for the initial water loss calculations. The measurements will be taken where the culverts are not submerged using a velocity meter to calculate the velocity and measurement of the flow height in the culvert to determine the cross-sectional area (Q=VA). Flow measurements at the diversion into the lateral and at the end of the newly installed pipe section will show the actual canal losses and can be used to verify the water savings as a result of the pipeline conversion.

The proposed project is estimated to result in the conservation of 2,275 acre-feet of water through the elimination of seepage losses through the existing porous soils in the 1-mile section of the Hillside Ditch Lateral. There are 500 acres that are currently underserved due to the inability of the PVID to convey enough water due to the severe seepage losses. Crop production on the current 500 acres that are underserved will provide a performance measure on how well the pipeline conversion project will provide adequate water for agriculture.

D.2.2.3 BUDGET NARRATIVE

In the budget detail and narrative section, applicants should describe and justify requested budget items and costs. Applicants should provide details to support the SF-424A, "Object Class" categories or the SF-424C, "Cost Classification" categories. The budget narrative must clearly identify all items of cost (total estimated project cost), including those contributed as non-Federal cost share by the applicant (required and voluntary), third-party in-kind contributions, and those covered using the funding requested from Reclamation, and any requested pre-award costs.

The total project cost is the sum of all allowable items of costs, including all required cost sharing and voluntary committed cost sharing, including third-party contributions necessary to complete the project. Applicants must include detailed descriptions of all cost justifications (see Reclamation's suggested format in Attachment B for more detail). Costs, including the valuation of third-party in- kind contributions, must comply with the applicable cost principles contained in 2 CFR, §200.

Note: The Budget Narrative Attachment Form in Grants.gov is to be used to upload the budget proposal.

BUDGET PROPOSAL AND FUNDING PLAN

Table 1. Summary of Non-Federal and Federal Funding Sources

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	$290,306.00
Costs to be paid by the applicant	$165,306.00
Value of third-party contributions (MT RRGL Grant)	$125,000.00
TOTAL PROJECT COST:	**$580,612.00**

Table 2. Total Project Cost Table

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Personnel				
Position Title	**pay rate**	**# hrs**	**Hour**	**Cost**
				$0.00
			Subtotal	**$0.00**
Fringe Benefits				
Position Title	**pay rate**	**# hrs**	**Hour**	**Cost**
				$0.00
			Subtotal	**$0.00**
Travel				
				$0.00
			Subtotal	**$0.00**
Equipment				
Name of Equipment	**Hourly Rate**	**#hrs**	**hour**	**Cost**
				$0.00
			Subtotal	**$0.00**
Supplies				

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Material or Supply Type	$cost per unit	#units	Unit Measurement	Cost
				$0.00
			Subtotal	$0.00
Contractual				
Services Contracted	Bid Price	Quantity	Type	Cost
				$0.00
			Subtotal	$0.00
Construction				
Equipment Use				
Services Contracted	Bid Price	Quantity	Type	Cost
				$0.00
			Subtotal	$0.00
Construction Materials & Installation				
Services Contracted	Bid Price	Quantity	Type	Cost
Topsoil Salvage & Replacement	$10.00	2542	CY	$25,420.00
21-inch A2000 Drainage Pipe	$78.00	5280	LF	$411,840.00
Outlet Structure	$2,500.00	1	Each	$2,500.00
Clean Out	$500.00	10	Each	$5,000.00
Grading and Compaction	$12.00	5476	CY	$65,712.00
Revegetation	$3,000.00	1.82	Acre	$5,460.00
			Subtotal	$515,932.00
Contractual Services				
Position Title	pay rate	# hrs	Type	Cost
Project Manager	$179.00	80	Hour	$14,320.00
Project QA/QC	$207.00	24	Hour	$4,968.00
Project Engineer III	$153.00	60	Hour	$9,180.00
Project Engineer II	$136.00	160	Hour	$21,760.00
Project Engineer I	$118.00	42	Hour	$4,956.00
Project Surveyor	$179.00	40	Hour	$7,160.00
Administrative Assistant	$73.00	32	Hour	$2,336.00
			Subtotal	$64,680.00
Other Construction Related Costs				
Services Contracted	Bid Price	Quantity	Type	Cost
				$0.00
			Subtotal	$0.00
Other				
Other Costs	Unit Price	Quantity	Type	Cost
				$0
			Subtotal	$0.00
			TOTAL DIRECT COSTS	$580,612.00
Indirect Costs				
N/A				$0
			TOTAL ESTIMATED PROJECT COSTS	$580,612.00

BUDGET NARRATIVE

A budget estimate and budget narrative for the project are required. The information in the budget narrative must correspond to **Section B of the SF-424A**. All budgeted costs, including any costs that will be paid by the applicant or contributed by third-parties, must comply with the cost principles of 2 CFR Part 200, Subpart E - Cost Principles and be:

- allowable (§200.403 Factors affecting allowability of costs),
- allocable to the agreement (§200.405 Allocable costs) and
- reasonable in amount (§200.404 Reasonable costs).

A thorough budget narrative is mandatory and will aid the administrative review and processing of a recommended award. Amounts included in a budget and budget narrative are estimates; in the event of an award, payments will be based on actual expenditures. The Budget Detail and Narrative template (**Attachment A**) is a suggested format to present the breakdown of estimated costs, by category, needed to accomplish project activities. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. The following is guidance for use in preparing a thorough budget narrative (**Attachment B**).

*Cost-share instructions (if applicable): The budget must include at least the minimum Federal to non-Federal required cost share. Cost share encompasses all contributions to the project incurred and paid for during the project. This includes payments for personnel, supplies, equipment, activities and items necessary for the project. In-kind cost share encompasses all third party contributions to the project that do not involve a payment or reimbursement and represent donated items or services that are necessary to the performance of the project. This includes volunteer personnel hours, donated existing equipment, donated existing supplies, etc.

The proposed project will be completed by soliciting and procuring a general contractor. The PVID Manager will provide project management and oversight of the project. Material prices for the project are based on actual quotes and/or rates for materials. The following table in conjunction with Table 2 outlines all item cots, including those that will be contributed as non-Federal cost share by the applicant (required and voluntary), third-party in-kind contributions, and those that will be covered using the funding requested from Reclamation, and any requested pre-awarded costs. The proposed project has a total budget of $580,612.00.

Administration and Grant Administration

Grant administration support will be contracted out to assist PVID with meeting the requirements of all funding sources. Grant administration includes progress reports, quarterly reporting assistance, assisting with contract requirements, assistance with pay request, and assistance in the preparation of the final report and project closeout documents.

Professional/Engineering Costs

The PVID will contract with an engineering firm to complete the pipeline project design for the proposed project. PVID's current engineer WWC Engineering developed estimates on the engineering costs affiliated with the proposed project based on previous experience with similar projects. The contracted engineering firm will be tasked with preparation of the final design, construction bidding and construction oversight.

Cost Summary

Budget Item	Applicant In-Kind Services	Applicant Reserve Funds	Reclamation WaterSMART Funds	MT RRGL Grant	Total
Personnel					
Fringe Benefits					
Travel					
Equipment					
Supplies					
Contractual					
Construction		$165,306.00	$290,306.00	$125,000.00	$580,612.00
Other					
Indirect Costs					
Totals:		**$165,306.00**	**$290,306.00**	**$125,000.00**	**$580,612.00**

Personnel

This category includes salaries and wages of employees of the applicant organization that will be working directly on the project. Recommend reviewing §200.430 Compensation - personal services for more information on the specific requirements regarding compensation costs, including the Standards for Documentation of Personnel Expenses at §200.430(i).

Generally, salaries of administrative and/or clerical personnel are included as a portion of the stated indirect costs. If these salaries can be adequately documented as direct costs, they can be included in this section; however, a justification should be included in the budget narrative.

Narrative: For key personnel such as the project manager or principal investigator, identify the name and position/title. Other personnel should be identified by position only. For all positions, identify the project tasks that will be performed. Compensation rates can be expressed as hourly rates and number of hours or annual salary and percentage effort that will be contributed to each task but must be consistent with the applicant organization's accounting and timekeeping policies. Include estimated hours for compliance with reporting requirements, including the final project report and evaluation. For multi-year projects, identify the level of effort anticipated for each budget year and any estimates increases in compensation rates. Within the budget narrative, provide a certification that the labor rates included in the budget proposal represent the actual labor rates of the identified personnel/positions and are consistently applied to Federal and non-Federal activities. Note: The annual/hourly labor rate must not include fringe benefits.

N/A

Fringe Benefits

Fringe benefits are allowances and services provided by employers to their employees as compensation in addition to regular salaries and wages. Fringe benefits include, but are not limited to, the costs of leave (vacation, family-related, sick or military), employee insurance, pensions, and unemployment benefit plans. Fringe costs should also include employer contributions required by law such as payroll taxes such as FICA, unemployment, and workers compensation. Fringe does **not** include federal income taxes, employee portion FICA, or other such costs. Recommend reviewing §200.431 *Compensation - fringe benefits* for more information on the allowability and allocability of fringe benefits. Note: *Car allowances and cars furnished to employees for personal and work use are unallowable as a fringe benefit,*

regardless of whether the costs is reported as taxable income, and must be excluded from fringe benefit rates.

Narrative: Fringe benefits can be expressed as an hourly rate or percentage of personnel costs. In the narrative, identify the fringe benefit rates/amounts for each position. If the fringe benefit rate is less than 35% of the estimated employee compensation, no additional information is necessary. If the fringe benefit rate is more than 35%, provide a description and breakdown of the benefits. If the rate is established within a negotiated indirect cost rate agreement (NICRA), provide a copy of the agreement with the application. Note: Do not combine the fringe benefit costs with direct salaries and wages in the personnel category.

N/A

Travel

Travel costs are expenses incurred by personnel in the performance of project activities. Costs can be charged on an actual cost basis, on a per diem or mileage basis in lieu of actual costs incurred, or on a combination of the two, provided that the method used is applied to the entire trip and not to selected days of the trip. All charges must be consistent with those normally allowed under similar circumstances for non-Federally funded activities and any established travel policies. Recommend reviewing §200.475 Travel costs for more information.

Narrative: Provide a narrative describing any travel employees are anticipated to perform. Include the purpose of the travel and how it relates to project tasks, the origin and destination of the trip, number of personnel traveling, length of stay, and all travel costs including airfare, per diem, lodging, transportation, and miscellaneous travel expenses. Identify the basis for rates used, (e.g., GSA Per Diem Rates, published prices) and the total of each planned trip. If travel details are unk nown, then the basis for proposed costs should be explained (i.e., historical information).

Travel costs are included in the proposed budget. Contracted travel is included in the lump sum amounts.

Equipment

Equipment is defined in §200.1 as tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the applicant organization for financial statement purposes, or $5,000. Recommend reviewing §200.439 Equipment and other capital expenditures for additional information on the allowability of equipment costs and §200.313 Equipment for information regarding the title, use, management and disposition requirements for equipment acquired under a Federal award.

Narrative: If equipment will be purchased, itemize all equipment valued at or greater than the applicant organization's capitalization threshold for financial statement purposes. If the organization's capitalization threshold is greater than $5,000, identify all equipment valued at or greater than $5,000. For each item, identify why it is needed for the completion of the project and how the equipment was priced (published price, quote, etc.). Include in the narrative a comparison of rental and/or lease costs over the purchase of the equipment item. Note: Do not include equipment that will be purchased and/or installed as part of a construction-related activity; this should be included under Construction costs.

N/A

Supplies

Supplies are defined in §200.1 as all tangible personal property other than those described in the definition of equipment. A computing device is a supply if the acquisition cost is less than the lesser of the capitalization level established by the applicant's organization for financial statement purposes or $5,000, regardless of the length of its useful life. Recommend reviewing §200.453 Materials and Supplies Costs, Including the Costs of Computing Devices, regarding the allowability of costs. Supply items must be direct costs to the project and not duplicative of supply costs in the indirect rate. For post-award requirements regarding supplies, recommend reviewing §200.314 Supplies. For financial management requirements related to supplies, recommend reviewing §200.302(b)(4).

Narrative: List all expendable supplies, noting their purpose in the project and the basis of cost (e.g., vendor quotes, catalogue prices, prior invoices, etc.). For each item, provide the estimated unit cost, quantity, and total cost. General categories may be used, but if a category is viewed as too general or the associated amount is too high, further itemization may be requested.

N/A

Contractual

Include all contracts and subawards. Per §200.1, a contract means, for the purpose of Federal financial assistance, a legal instrument by which a recipient or subrecipient purchases property or services needed to carry out the project or program under a Federal award. The term as used in this part does not include a legal instrument, even if the non-Federal entity considers it a contract when the substance of the transaction meets the definition of a subaward.

For additional information on subrecipient and contractor determinations, see §200.331 Subrecipient and contractor determinations. Recommend reviewing §200.459 Professional service costs for information regarding the allowability of contractual costs.

Note: Do not include equipment that will be purchased and/or installed as part of a construction-related activity; this should be included under Construction costs.

Contract Narrative: For each contract, regardless of dollar value, describe the services to be obtained and the applicability or necessity of each to the project. Identify the total estimated cost and the basis(es) used to develop the estimate. For each contract with an estimated amount meeting or exceeding $250,000 or represents 35% or more of the total project cost, provide a separate detailed description of the estimated costs. A detailed estimate can be included with the application in lieu of a description. For contracts with an estimated cost equal to or greater than the micro-purchase threshold (currently $10,000), identify the anticipated procurement method to be used and the basis of selection.

Note: Only contracts for architectural/engineering services can be awarded using a qualifications-based procurement method. If a qualifications-based procurement method is used, profit must be negotiated as a separate element of the contract price. See §200.318 General procurement standards for additional information regarding procurements, including required contract content. Recommend reviewing §200.319 Competition and §200.320 Methods of procurement to be followed.

The PVID will contract with a licensed Professional Engineer to complete the design and grant administration for the pipeline conversion project by developing a solicitation that will be advertised in the local paper in accordance with Montana Code Annotated requirements. The

Engineer will be responsible for the design of the proposed project, which will include, but is not limited to, environmental considerations, hydrology and hydraulics, earthwork grading, horizontal and vertical alignments, permitting, and construction administration duties. The Engineer will work with regulatory agencies to complete environmental compliance. The Engineer will provide a final plan set and specifications for the proposed project to facilitate construction. The Engineer will also provide advisory services during construction of the project to assure proper installation. An estimate of the consultant's cost is included in Table 3. Construction will be performed by the selected contractor(s) as directed by a scope of work and services in a contract with a construction company(s). The construction services costs includes costs for the contractor to provide mobilization, demobilization, insurance, labor costs, equipment, and other items construction items not related directly to material purchases. The Engineer's services amount to a total cost of $64,680.00, which is well within the industry standard for A&E Services for design, permitting and construction administration (<20% of total construction cost).

Subaward Narrative: If known, identify the recipient of each subaward. Describe the activities to be performed under each subaward, regardless of dollar value, and indicate the applicability or necessity of each to the project. Identify the total estimated cost and the basis(es) used to develop the estimate. For each subaward with an estimated amount meeting or exceeding $250,000 or representing 35% or more of the total project cost, provide a separate detailed description of the estimated costs. A detailed estimate can be included with the application in lieu of a description. Include any indirect/overhead costs anticipated to be paid and the indirect cost rate used.

N/A

Construction

Construction costs are costs incurred in the construction, renovation, and/or equipping of a facility or structure. Costs include engineering, design, permitting, demolition, acquisition of materials, and installation of improvements.

Narrative: Identify all construction-related costs other than applicant organization personnel and fringe benefits costs, including, but not limited to, engineering and design, environmental and other regulatory compliance costs, applicant-owned equipment use, rental equipment, construction supplies, equipment that will be purchased and installed, construction contracts, permitting, and environmental compliance. Note: Personnel and fringe benefits costs related to construction should be included in Salaries and Wages and Fringe Benefits costs, as applicable.

- **Equipment use.** If equipment owned by the applicant is proposed for use under the project, provide the use rates and hours for each piece of equipment owned and budgeted. These should be ownership rates developed by the recipient for each piece of equipment (do not include operator costs). If these rates are not available, the U.S. Army Corps of Engineer's recommended equipment rates for the region are acceptable. Rates for each region can be found at EP1110-1-8 Construction Equipment Ownership and Operating Expense Schedule.

  N/A

- **Construction materials.** Identify any construction materials and non-movable equipment that will be purchased from a vendor. Include estimated purchase price, quantity, and total cost.

-

Construction Materials & Installation				
Services Contracted	**Bid Price**	**Quantity**	**Type**	**Cost**
Topsoil Salvage & Replacement	$10.00	2542	CY	$25,420.00
21-inch A2000 Drainage Pipe	$78.00	5280	LF	$411,840.00
Outlet Structure	$2,500.00	1	Each	$2,500.00
Clean Out	$500.00	10	Each	$5,000.00
Grading and Compaction	$12.00	5476	CY	$65,712.00
Revegetation	$3,000.00	1.82	Acre	$5,460.00
			Subtotal	**$515,932.00**

All the materials and supplies needed for the project are listed above. The supplies are itemized by major category, unit price, quantity and purpose. All costs were derived from actual product costs or from quotes received on each product within the last 365 days, and include installation cost. All costs were verified by an independent engineering consultant who utilized current recent bid prices on similar projects.

- **Contractual services.** For each contract, regardless of dollar value, describe the services to be obtained and the applicability or necessity of each to the project. Identify the total estimated cost and the basis(es) used to develop the estimate. For all construction contracts and each contract with an estimated amount meeting or exceeding $250,000 or representing 35% or more of the total project cost, provide a separate detailed description of the estimated costs. A detailed estimate can be included with the application in lieu of a description. For contracts with an estimated cost equal to or greater than the micro-purchase threshold (currently $10,000) identify the procurement method to be used and the basis of selection.

Contractual Services				
Position Title	**pay rate**	**# hrs**	**Type**	**Cost**
Project Manager	$179.00	80	Hour	$14,320.00
Project QA/QC	$207.00	24	Hour	$4,968.00
Project Engineer III	$153.00	60	Hour	$9,180.00
Project Engineer II	$136.00	160	Hour	$21,760.00
Project Engineer I	$118.00	42	Hour	$4,956.00
Project Surveyor	$179.00	40	Hour	$7,160.00
Administrative Assistant	$73.00	32	Hour	$2,336.00
			Subtotal	**$64,680.00**

An engineering services contract will be awarded by the PVID for final design and engineering, preparation of construction contract bidding documents, and construction oversight and inspection. The hours for each professional are included in the table above. The estimate was prepared by an engineering consultant and is based on the costs incurred for a previous similar project.

- **Other Construction-related Costs.** Identify any other construction-related costs (e.g., permitting, etc.) and indicate the applicability or necessity of each to the project. Include quantity, unit cost, total cost, and the basis for the estimate. Note: Do not include costs that are anticipated to be paid by a contractor und r the terms of the contract. Those items should be included in the contract estimate.

N/A

Other

This category contains items not included in the previous categories, such as third-party in-kind contributions, tuition remission, rental costs, etc. Third-party in-kind contributions are all services and donations made to the project that do not involve a payment or reimbursement and represent donated items or services that are necessary to the performance of the project. This includes services provided by project partners that will not be reimbursed, volunteer hours, donated equipment, donated existing supplies, etc.

Narrative: For all costs other than third-party contributions, list items by type or nature of expense, breaking down costs by cost per unit, quantity, and total cost and identify the basis of cost (quote, invoice, etc.). Describe the necessity of the costs for successful completion of the project and exclude unallowable costs. Recommend reviewing §200.420 through §200.476, General Provisions for Selected Items of Cost.

N/A

Third-party Contributions Narrative: Describe any third-party servicers and donations (personnel costs, supplies, etc.), including the name of the contributor as well as any work that will be performed by volunteers. Indicate the applicability or necessity of each to the project and describe the basis(es) of the valuation. All third-party contributions must meet the requirements under §200.306 Cost sharing or matching, including the valuation of the contribution.

N/A

Indirect Costs

Indirect costs that will be incurred during the development or construction of a project, which will not otherwise be recovered, may be included as part of the applicant's project budget. Show the proposed rate, cost base, and proposed amount for allowable indirect costs based on the applicable cost principles for the recipient's organization as described below. It is not acceptable to simply incorporate indirect rates within other direct cost line items.

Option 1: Show the rate reflected in the most recent Federal indirect cost rate agreement, cost base, and proposed amount for allowable indirect costs. If the applicant has a current Federal negotiated indirect cost rate agreement, it must be included with the application.

Option 2: If the applicant has never received a Federal negotiated indirect cost rate, the budget may include a 10% de minimis rate of modified total direct costs. Per §200.1 Definitions,

> *Modified Total Direct Cost (MTDC) means all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and up to the first $25,000 of each subaward (regardless of the period of performance of the subawards under the award). MTDC excludes equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward in excess of $25,000.*

For further information on modified total direct costs, refer to §200.414 Indirect Costs.

Option 3: If the applicant does not have a federally approved indirect cost rate agreement and is proposing a rate greater than the 10% de minimis rate, include the computational basis for the indirect expense pool and corresponding allocation base for each rate. Identify the amount of Federal funding that will be used to pay these costs.

Information on "Preparing and Submitting Indirect Cost Proposals" is available from Interior, the National Business Center, and Indirect Costs and Acquisition Audit Services at https://ibc.doi.gov/ICS/icrna.

Note: Construction costs are capital expenditures and must be excluded from the indirect costs.

Narrative: Identify whether the applicant has a current Federal negotiated indirect cost agreement. Describe the costs included in the indirect cost base and identify the indirect cost rate used and total costs. Include the amount of Federal funding that will be used to pay indirect costs.

N/A - The PVID does not have a federally approved indirect cost; therefore, no de minimis rate is assumed for this project.

D.2.2.4 PRE-AWARD COSTS

If the proposed project is selected, the awarding Reclamation Grants Officer will review the proposed pre-award costs to determine if they are consistent with program objectives and are allowable in accordance with the authorizing legislation. Proposed pre-award costs must also be compliant with all applicable administrative and cost principles criteria established in 2 CFR Part

§200 and all other requirements of this NOFO. In no case will costs incurred prior to April 1, 2022, be considered for inclusion in the proposed project budget.

Please note that the costs for preparing and submitting an application in response to this NOFO, including the development of data necessary to support the proposal, are not eligible project costs under this NOFO and must not be included in the project budget.

In addition, please ensure that the budget proposal includes any project costs that may be incurred prior to award. For each cost, describe:

- The project expenditure and amount

  There are no pre-award costs

- The date of cost incurrence

  There are no pre-award costs

- How the expenditure benefits the project

There are no pre-award costs

D.2.2.4 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Please answer the questions from Section H.1. Environmental and Cultural Resource Considerations in this section.

It is understood that Reclamation will be the lead agency on Environmental and Cultural Resources Compliance.

H.1. ENVIRONMENTAL AND CULTURAL RESOURCE CONSIDERATIONS

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should consider the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:

- Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

  The proposed project will have a minimal impact on the surrounding environment. Impacts to the environment will be limited to the general proximity of the pipeline alignment. The disturbance footprint may extend 5 feet beyond the edge of the pipeline alignment on each side to allow for removal of the existing topsoil and earthwork compaction of the new pipeline. The work will be performed in the irrigation offseason when the irrigation canal is dry and not running water. Care will be taken to minimize impacts and limit the construction footprint wherever possible. During construction, dust may be generated but is expected to be minimal and temporary. Dust control measures will be implemented during construction that may include the use of a water truck. Noise from construction activities will be limited to daylight hours. The proposed project could potentially have a beneficial impact on fish and wildlife habitat through the conservation of water and energy and improved water quality discharges back to the Milk River as described previously in this application.

- Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

  A search of the Montana Natural Heritage Program website indicated that the project area contains eleven (11) species of concern. Of these species, some are ranked as S2 (At risk because of very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state) while others are ranked as S3 (Potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas). These species include Swift Fox, Great Blue Heron, Long-billed Curlew, Northern Redbelly Dace, Northern Pearl Dace, and Sauger. As previously stated however, care will be taken to limit construction disturbance to the area within the existing canal. Additionally, the US Fish and Wildlife Service's IPaC system identified the Monarch Butterfly as a candidate species within the project area. A candidate species is any

species whose status is being reviewed to determine whether it warrants listing under endangered.

- Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.

  The National Wetlands Inventory (NWI) website was utilized to determine whether any wetlands were present within the lands adjacent to the project location. This search indicated that the Hillside Ditch Lateral project area is within the existing irrigation infrastructure footprint. Thus, the NWI identifies the lateral as a riverine wetland because of the Milk River to the north.

- When was the water delivery system constructed?

  Construction of the Milk River Project, which includes the PVID delivery system, was authorized in 1905 and lasted until Fresno Dam was completed in 1939. The project was initiated to transfer water from the St. Mary's River watershed that had abundant water to the Milk River Basin where there was limited water. The Milk River Project brings water from the St. Mary's River via a diversion dam and canal headgates through a 29-mile canal with a series of siphons, checks, wasteways, and drops that discharges water into the north fork of the Milk River, which then travels 216 miles through Alberta, Canada, before reentering the United States and depositing the water in Fresno Reservoir near Havre. The St. Mary's Diversion supplies the Milk River with 60-100% of its water during summer months.

- Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

  The proposed project will only effect the existing irrigation canal that will be converted to a closed pipeline system.

- Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

  The district does not have any buildings, structures, or features eligible for listing on the National Register of Historic Places that will be impacted by this project.

- Are there any known archeological sites in the proposed project area?

  The PVID is not aware of any archeological sites in the proposed project area. If any archeological sites are discovered during construction, work will be halted, and the appropriate environmental process will be followed.

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

The proposed project will not have a disproportionately high and/or adverse effect on low income or minority populations.

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

The proposed project will not limit access to or ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

- 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?

Care will be taken to prevent the continued existence or spread of noxious weeds or non-native invasive species. During revegetation, only approved native seed mixtures will be used. The PVID's weed management program will be used to control weed and non-native species once the project is complete.

D.2.2.5 REQUIRED PERMITS OR APPROVALS

You must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Note that improvements to Federal facilities that are implemented through any project awarded funding through this NOFO must comply with additional requirements. The Federal government will continue to hold title to the Federal facility and any improvement that is integral to the existing operations of that facility. Please see P.L. 111-11 §9504(a)(3)(B). Reclamation may also require additional reviews and approvals prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR §429 and that the development will not impact or impair project operations or efficiency.

For each of the permits listed below, the PVID will work with each permitting agency to determine whether a formal permit is needed for the construction of the proposed project. If needed, the following permits may be obtained with assistance from the engineer during the design process:

310 Permit – The Montana Association of Conservation Districts (MACD) requires a permit for any activity that physically alters or modifies the bed or banks of a perennially flowing stream. Consultation will be performed, but the activities proposed herein are likely exempt from this rule.

404 Permit – The Army Corps of Engineers (ACOE) requires a permit for any activity that will result in the discharge or placement of dredged or fill material into waters of the United States, including wetlands. Consultation will be performed, but the activities proposed herein are likely exempt as stated in CRF 323.4(a)3.

318 Authorization – The Short-Term Water Quality Standard for Turbidity requires a permit for any construction activities that will cause temporary violations of state surface water quality standards for turbidity.

Storm Water Discharge General Permit – State Storm Water Rules require a storm water discharge permit for any construction project over one acre in total disturbance that discharges into State waters.

Montana Sage Grouse Habitat Conservation Program - The program's role is to implement Montana's Sage Grouse Conservation Strategy including the conservation, restoration, and mitigation of changes to sage grouse habitat as a result of development.

D.2.2.6 OVERLAP OR DUPLICATION OF EFFORT STATEMENT

Applicants must provide a statement that addresses if there is any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. If any overlap exists, applicants must provide a description of the overlap in their application for review.

Applicants must also state if the proposal submitted for consideration under this program does or does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal. If such a circumstance exists, applicants must detail when the other duplicative proposal(s) were submitted, to whom (Agency name and Financial Assistance program), and when funding decisions are expected to be announced. If at any time a proposal is awarded funds that would be duplicative of the funding requested from Reclamation, applicants must notify the NOFO point of contact or the Program Coordinator immediately.

The PVID has submitted grant applications to various grant agencies to support various portions of this project. These applications and their status are as follows:

Montana Department of Natural Resources and Conservation Renewable Resources Grant and Loan Program Construction Grant. The PVID applied for an RRGL construction grant in the amount of $125,000 (no match requirement) that will go toward pipeline conversion project identified in this application. This application is pending and will be awarded sometime in May 2023.

Bureau of Reclamation WaterSmart Water and Energy Efficiency Grant. The PVID is applying for funding under this application to support the pipeline conversion project identified in this application.

The PVID will coordinate these grants, if they are all or partially funded, in a joint effort to convert the existing Hillside Ditch Lateral from an open canal to a closed pipeline. It is not anticipated that there will be any conflicts with resources and/or funding for each project as they all will have individual matching needs that will be handled independently. The PVID has reviewed the amount of work and funding that this project will take and is confident that they have the funds and the resources to complete the work.

D.2.2.7 CONFLICT OF INTEREST DISCLOSURE STATEMENT

Per 2 CFR §1402.112, "Financial Assistance Interior Regulation" applicants should state in the application if any actual or potential conflict of interest exists at the time of submission. Submission of a conflict-of-interest disclosure or certification statement is mandatory prior to issue of an award.

The PVID has no actual or potential conflict of interest at this time.

D.2.2.7.1 APPLICABILITY

This section intends to ensure that non-Federal entities and their employees take appropriate steps to avoid conflicts of interest in their responsibilities under or with respect to Federal financial assistance agreements.

In the procurement of supplies, equipment, construction, and services by recipients and by sub recipients, the conflict-of-interest provisions in 2 CFR§200.318 apply.

The PVID has no actual or potential conflict of interest at this time.

D.2.2.7.2 NOTIFICATION

Non-Federal entities, including applicants for financial assistance awards, must disclose in writing any conflict of interest to the DOI awarding agency or pass- through entity in accordance with 2 CFR §200.112.

Recipients must establish internal controls that include, at a minimum, procedures to identify, disclose, and mitigate or eliminate identified conflicts of interest. The successful applicant is responsible for notifying the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by sub recipients.

The PVID has no actual or potential conflict of interest at this time.

D.2.2.7.3 RESTRICTIONS ON LOBBYING

Non-Federal entities are strictly prohibited from using funds under a grant or cooperative agreement for lobbying activities and must provide the required certifications and disclosures pursuant to 43 CFR §18 and 31 USC §1352.

The PVID will not use the funds for lobbying and have provided the required certifications and disclosures pursuant to 43 CFR §18 and 31 USC §1352.

D.2.2.7.4 REVIEW PROCEDURES

The Financial Assistance Officer will examine each conflict-of-interest disclosure on the basis of its particular facts and the nature of the proposed grant or cooperative agreement and will determine whether a significant potential conflict exists and, if it does, develop an appropriate means for resolving it. Enforcement. Failure to resolve conflicts of interest in a manner that satisfies the government may be cause for termination of the award. Failure to make required disclosures may result in any of the remedies described in 2 CFR §200.339, Remedies for noncompliance, including suspension or debarment (see also 2 CFR §180).

The PVID has no actual or potential conflict of interest at this time.

D.2.2.8 UNIFORM AUDIT REPORTING STATEMENT

All U.S. states, local governments, federally recognized Indian Tribal governments, and non-profit organizations expending $750,000 in U.S. dollars or more in Federal award funds in your organization's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System in accordance with 2 CFR §200 subpart F.

U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

The PVID has not submitted, or been required to submit, a Single Audit report for the most recently closed fiscal year (2021).

D.2.2.9 CERTIFICATION REGARDING LOBBYING

Applicants requesting more than $100,000 in Federal funding must certify to the statements in 43 CFR §18, Appendix A. If this application requests more than $100,000 in Federal funds, the authorized official's signature on the appropriate SF-424 form also represents the applicant's certification of the statements in 43 CFR § 18, Appendix A.

The PVID will not use the funds for lobbying and has provided the required certifications and disclosures pursuant to 43 CFR §1, Appendix A. The PVID's President, Denny Overcast, has signed the appropriate SF-424 form which is included with this application.

D.2.2.10 SF-LLL: DISCLOSURE OF LOBBYING ACTIVITIES (IF APPLICABLE)

If applicable, a fully completed and signed SF-LLL: Disclosure of Lobbying Activities form is required if the applicant has made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. This form cannot be submitted by a contractor or other entity on behalf of an applicant.

N/A

D.2.2.11 LETTERS OF SUPPORT

Please include letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support/partnership letters as an appendix. Letters of support received after the application deadline for this NOFO will not be considered in evaluating your proposed project. These letters do not count within the 100 page maximum.

Letters of support for the project are included in Appendix C.

D.2.2.12 LETTER OF PARTNERSHIP

Category B applicants must submit a letter from the Category A partner(s), stating that they are acting in partnership with the applicant and agree to the submittal and content of the proposal (see Section C.1. Eligible Applicants). However, if the project is selected, a Letter of Partnership must be received prior to award.

N/A

D.2.2.13 OFFICIAL RESOLUTION

Include an official resolution adopted by your organization's board of directors or governing body, or, for state government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award under this NOFO, verifying:

- The identity of the official with legal authority to enter into an agreement
- The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted
- That your organization will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement

An official resolution meeting the requirements set forth above is mandatory. If you are unable to submit the official resolution by the application deadline because of the timing of board meetings or other justifiable reasons, the official resolution may be submitted to sha-dro-fafoa@usbr.gov up to 30 days after the application deadline. This resolution does not count within the 100 page maximum for the application.

An official resolution from the PVID Board is provided in Appendix D.

D.2.2.14 LETTERS OF FUNDING COMMITMENT

If a project is selected for award under this funding opportunity and cost share funding is anticipated to be provided by a source other than the applicant, the third-party cost share must be supported with letters of commitment prior to award. Letters of commitment should identify the following elements:

A commitment letter from the DNRC is provided in Appendix B.

- The amount of funding commitment

  Along with the $290,306.00 requested from WaterSmart in this grant application, the PVID will contribute $125,000 in cash from an RRGL grant, and $165,306.00 from their reserve account. The RRGL grant has already been awarded and the funds are available now.

- The date the funds will be available to the applicant

  The PVID has committed $125,000 in RRGL grant funding that has been awarded to PVID by the Montana Department of Natural Resources and Conservation. These funds are available now. PVID reserve funds and possibly other funding sources will be retained to implement the remainder of the project. The PVID reserve funds are available now.

- Any time constraints on the availability of funds

  The RRGL grant will need to be spent by the end of 2026.

- Any other contingencies associated with the funding commitment

  There are no other contingencies associated with the funding commitment.

Cost-share funding from sources outside the applicant's organization (e.g., loans or State grants) should be secured and available to the applicant prior to award.

The PVID has secured a $125,000 grant from the Montana Department of Natural Resources and Conservation Renewable Resource Grant & Loan Program. The grant is available now and must be spent by the end of 2026. A copy of the award letter is provided in Appendix B.

Reclamation will not execute a financial assistance agreement until non-Federal funding has been secured or Reclamation determines that there is enough evidence and likelihood that non- Federal funds will be available to the applicant after executing the agreement.

"Your Dealer Alternative"

Scott M. or Heather R. DePriest - Owners
40440 US Highway 2 East – Chinook, MT 59523
(406) 357-4201
Email: heather@americangarage.net
www.americanaaraae.net

May 2nd, 2022

Letter of Support of Paradise Valley Irrigation District

RE: Letter of Support

To whom it may concern,
I am submitting this letter in support of the Paradise Valley Irrigation District's efforts to improve the 100 year old infrastructure to the District. These projects are crucial to the long-term health of the Hi-Line and our area and has a direct impact on the sustainability of our area.

These projects will help address concerns and issues regarding the failing infrastructure and we strongly support their efforts in rehabilitation.

Please consider this our letter of support for the Paradise Valley Irrigation District, as it directly affects a large amount of people in the area.

Thank you for your time.

Kindly,

Heather Renee DePriest

Heather R. DePriest, Owner

American Garage, LLC
40440 US Highway 2 East
Chinook, MT 59523

PARADISE VALLEY IRRIGATION DISTRICT

April 30, 2022

Grant Letter of Support

Hillside Pipeline Project

I fully support the project to finish the Hillside Pipeline. This will be a great water conservation project for the Paradise Irrigation District. It will be a step for insuring irrigation water for our future needs.

I am looking forward to seeing it completed.

Bruce Anderson — 4/30/22

(name) (date)

_____ _____

(name) (date)

Blaine County Conservation District

Box 189 – Chinook, MT 59523 – Phone (406)357-2320 X 101 – Shannon.Sattleen@mt.nacdnet.net

May 3, 2022

Re: Letter of Support for PVID's grant needs

To: Grant Review Committee,

The Blaine County Conservation District (BCCD) gives their full support to the Paradise Valley Irrigation Districts (PVID) in their need to continue repairs to the Hillside Ditch lateral on the Milk River Irrigation System. Approximately one mile of the lateral ditch has been piped previously through a RRGL construction grant and Natural Resources Conservation Service (NRCS) support. However, more piping is necessary to prevent water shortages from canal seepage and evapotranspiration loses that has resulted in a lack of sufficient water to irrigate downstream crops. With continued drought, and with a large part of Blaine County in the D4 drought classification, the BCCD sees that it is imperative that we support our producers in their efforts to improve critical water savings.

The PVID proposes to replace the last mile of the open canal with a 21-inch closed system pipeline. This upgrade will eliminate all seepage concerns and increase water supply for downstream irrigators.

The BCCD is a committed supporter that sees a tremendous value in supporting projects that improve water management that ultimately increases water conservation to the Milk River Irrigation system.

The BCCD believes strongly that in order to conserve and protect this nation's natural resources there is a need to work collectively, with our neighbors and partners to ultimately address the resource concerns of the area and accomplish our mutual goals in protecting Montana's Natural Resources.

Sincerely,

Kurt Hansen
Vice Chairperson, Blaine County CD

Blaine County Conservation District

Montana CDs: *Local Common Sense Conservation*

BLAINE COUNTY COMMISSIONERS

Frank DePriest, Chair
Miles G. Hutton
Dolores Plumage

P.O. Box 278
(406)357-3250

Chinook, Montana
59523-0278

May 3, 2022

RE: Paradise Valley Irrigation District Project

To Whom It May Concern:

The Blaine County Commissioners are submitting this letter of support for the Paradise Valley Irrigation District's grant proposal of the project of piping the Hillside Ditch.

The Hillside Ditch is a 2-mile canal lateral withing the Paradise Valley Irrigation District that supports nearly 900 acres of prime agricultural land within the district. Approximately 1 mile of the lateral ditch has been piped previously through a RRGL construction grant and NRCS support. However, more piping is necessary to prevent water shortages resulting from canal seepage and evapotranspiration losses that have resulted in a lack of sufficient water to irrigate downstream crops. These fields are producing at low rates due to water shortages and inconsistencies. The Paradise Valley Irrigation District (PVID) proposes to replace the last mile of the open canal with a 21-inch closed system pipeline. This upgrade will eliminate all seepage concerns and increase water supply for downstream irrigators. In addition, this replacement will impact Montana's renewable resource benefits through conservation, preservation, management, and development. Montana's ecosystem and community will benefit through water conservation, protections of the Milk River water quality, safe operation of facilities, increased crop yields, and revenue generation.

Thank you for your consideration and support of this very worthwhile project that will benefit our rural community greatly and bolster the local and state economies. Please do not hesitate to contact our office with any questions about our support for this grant to ensure the benefits to agriculture.

Sincerely,

Frank DePriest

Miles G. Hutton

Dolores Plumage

PARADISE VALLEY IRRIGATION DISTRICT

April 30, 2022

Grant Letter of Support

Hillside Pipeline Project

I fully support the project to finish the Hillside Pipeline. This will be a great water conservation project for the Paradise Irrigation District. It will be a step for insuring irrigation water for our future needs.

I am looking forward to seeing it completed.

George Dan McNeill — 5-2-22

(name) (date)

_____ _____

(name) (date)

MILK RIVER IRRIGATION PROJECT
JOINT BOARD OF CONTROL
1475 1st Avenue Havre, MT 59501 • (406) 945-3383 • jenn@mrjboc.com

ELECTRONIC COPY ONLY:

FROM: Wade I. Jones, Chairman
Milk River Irrigation Project Joint Board of Control

TO: Department of Natural Resource and Conservation District -RRGL Grant Program Manager

SUBJECT: Paradise Valley Irrigation Letter of Support

DATE: May 5, 2022

To Whom It May Concern:

The Milk River Irrigation Project Joint Board of Control (JBOC) supports the Paradise Valley District's desire to upgrade and complete the Hillside Ditch project. Water is an irreplaceable resource that needs to be protected, conserved and properly managed. The JBOC feels that the rehabilitation and completion of the Hillside Ditch will not only conserve the water but allow Paradise to properly manage some of the acres on their system.

The Hillside Ditch is a 2-mile canal lateral within the Paradise Valley Irrigation District that supports nearly 900 acres of prime agricultural land within the district. Approximately 1 mile of the lateral ditch has been piped previously through a RRGL construction grant and NRCS support. However, more piping is necessary to prevent water shortages resulting from canal seepage and evapotranspiration losses that has resulted in a lack of sufficient water to irrigate downstream crops. These fields are producing at low rates due to water shortages. The Paradise Valley Irrigation District proposes to replace the last mile of the open canal with a 21-inch closed system pipeline. This upgrade will eliminate all seepage concerns and increase water supply for downstream irrigators. In addition, this replacement will impact Montana's renewable resource benefits through conservation, preservation, management, and development. Montana's ecosystem and community will benefit through water conservation, protection of the Milk River water quality, safe operation of facilities, increased crop yields, and revenue generation.

Any improvements to the Milk River Project not only conserve, develop, manage and preserve the Milk River as a renewable resource, but also benefit residents living on the Milk River. The JBOC is in full support of this grant application to complete the Hillside ditch in Paradise Valley for their continued dedication to water conservation and management.

Sincerely,

Wade Jones, Chairman

PARADISE VALLEY IRRIGATION DISTRICT

April 30, 2022

Grant Letter of Support

Hillside Pipeline Project

I fully support the project to finish the Hillside Pipeline. This will be a great water conservation project for the Paradise Irrigation District. It will be a step for insuring irrigation water for our future needs.

I am looking forward to seeing it completed.

Erika Anderson-Phillips — 4/30/22

(name) (date)

_____ _____

(name) (date)

May 4, 2022

To whom it my concern,

I am writing in support of the Hill Side Ditch project. The Hill Side Ditch is a Two mile long lateral suppling irrigation water for 900 acers of crop land. One mile is already in a pipe but the remaining mile is in open ditch consisting of highly permeable soils. Seepage loss is calculated at 807 acer feet annually. In a year such as this that is huge. The 807 acer feet is more water than it would take to do one irrigation on the 900 acers. Not only will the project help with water conservation it will promote soil health by preventing soil saturation. Two things that are extremely important to a healthy and sustainable ecosystem. It will also have a positive effect on the local economy from construction to increased crop yields.

Sincerely

Shane Stroebe

Land Owner/ Commissioner Paradise Valley Irrigation District

PARADISE VALLEY IRRIGATION DISTRICT

April 30, 2022

Grant Letter of Support

Hillside Pipeline Project

I fully support the project to finish the Hillside Pipeline. This will be a great water conservation project for the Paradise Irrigation District. It will be a step for insuring irrigation water for our future needs.

I am looking forward to seeing it completed.

Denny Overcast — 5/2/22

(name) user, landowner, director (date)

_____ _____

(name) (date)

PARADISE VALLEY IRRIGATION DISTRICT

Resolution #2024-01

Hillside Ditch Lateral to Pipeline Conversion Project WaterSmart Grant Application

WHEREAS; the Paradise Valley Irrigation District has the legal authority to enter into an agreement, and intends to submit a Water Efficiency Grant to the United States Bureau of Reclamation's (USBR) WaterSMART Program in 2024, and;

WHEREAS; the Paradise Valley Irrigation District, located in Chinook, MT commits to assisting in the funding of, implementation of, the construction of, operation of, and to performing the future maintenance for the Hillside Ditch Lateral to Pipeline Conversion project per the stipulations of the foregoing grant application (if successful and awarded), and;

WHEREAS; the Paradise Valley Irrigation District contributions of cash and in-kind management, labor, and equipment services for the preferred alternative of the aforementioned grant application have been estimated at up to 51% of the total projects per the budgeting calculation forms included in the WaterSMART Grant Application, and;

WHEREAS; the Paradise Valley Irrigation District hereby appoints Denny Overcast, President, as the official with legal authority to enter into and agreement (if successful and awarded);

THEREFORE, BE IT RESOLVED: The Paradise Valley Irrigation District Board supports the application and hereby commits to the supply of in-kind labor, management, equipment, and/or cash to satisfy the required match as stipulated in the Funding Plan of the WaterSMART Grant Application submittal for the Hillside Ditch Lateral to Pipeline Conversion project. The Paradise Valley Irrigation District has budgeted for the planned capital and resource expenditures and will work with Reclamation to meet the established deadlines for entering into a grant or cooperative agreement.

BOARD OF DIRECTORS
PARADISE VALLEY IRRIGATION DISTRICT

Signed: Denny Overcast — Date: 2/5/24
Denny Overcast, President

Signed: _____ — Date: 2-5-24
Kevin Velk, Director

Signed: _____ — Date: 2-5-24
Brady Bowles, Director