### WaterSMART Grant

Water and Energy Efficiency Grant
Funding Opportunity Announcement No. R24AS00052
For Fiscal Year 2024

**Group II Application - \$1,724,100 Grant Request** 

February 22<sup>nd</sup>, 2024

## **West Cache Irrigation System Optimization**

Cache Valley, Utah

### **Applicant**

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West Cache Irrigation Co.

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### 1 – Project Overview

#### 1.1 - Executive Summary

The executive summary should include:

- The date, applicant name, city, county, and state.
- 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.
- 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.
- State the length of time and estimated completion date for the proposed project (month/year).
- Whether or not the proposed project is located on a Federal facility.

Date: February 22<sup>nd</sup>, 2024

Applicant: West Cache Irrigation Company

32 West Main St

Trenton, Cache County, Utah 84338

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Category: A



For this project, the West Cache Canal will be equipped with telemetry, control, and measuring devices installed at key points along the length of the canal. The project will replace all existing manual spillway structures with automated gates, install cameras at key points, and replace direct drives with energy efficient VFDs at the Cornish pump house. This will enable canal managers to control the rate of water flowing efficiently and remotely through the canal. This proposal includes funding the design, construction, and start-up of the control devices and telemetry system.

Estimated Project Length: 20 months (starting January 2025)

Completion Date: August 2026

Federal Facility: This is not on a federal facility

#### 1.2 - Project Location

Provide specific information on the geographic location of the proposed planning area (e.g., watershed, basin, county) or location of the project being designed, including a map showing the geographic location. For example, [project name] is located in [county and state] approximately [distance] miles [direction, e.g., northeast] of [nearest town]. The project latitude is {###"#"N} and longitude is {###"#"W}.

The West Cache System Optimization Project begins in Franklin County, Idaho and continues through Cache County, Utah. The project consists of retrofitting and adding SCADA and Control devices to key locations along the West Cache System. Listed in **Table 1** are the key locations and their functions. A map of the system and the various key locations can be seen in **Figure 1**.

Table 1: Key Project Locations

Key Infrastructure	Description	Latitude	Longitude	
Riverdale Diversion	Main Diversion	42°10'14.27"N	111°50'57.87"W	
	off the Bear River			
Riverdale Spillway	1 <sup>st</sup> flow control	42°10'10.48"N	111°51'11.19"W	
	spillway			
Riverdale Diversion Measuring	Concrete	42°10'10.48"N	111°51'12.61"W	
Device	measuring flume			
Riverdale IWS Traveling Screen	Moss and debris 42° 9'4.04"N		111°54'16.68"W	
	removal site			
Hubs Spillway	2 <sup>nd</sup> flow control	42° 9'28.49"N	111°53'17.67"W	
	spillway			
Frew Spillway	3 <sup>rd</sup> flow control	42° 5'12.79"N	111°55'7.46"W	
	spillway			
Mels Spillway	4 <sup>th</sup> flow control 42° 1'30.86"		111°56'18.42"W	
	spillway			
Cornish Diversion – Pump	2 <sup>nd</sup> diversion off	41°59'24.59"N	111°56'35.99"W	
Station	the Bear River			



Tim Lunday Metering	Level monitoring site	41°59'10.07"N	111°57'16.19"W	
Naegle Lateral Diversion	1 <sup>st</sup> Gravity Diversion	41°59'11.18"N	111°57'14.82"W	
Buttars Lateral Diversion	2 <sup>nd</sup> Gravity Diversion			
Pitcher Lateral Diversion	3 <sup>rd</sup> Gravity Diversion	41°56'53.70"N	111°58'13.34"W	
Ransom Hollow Spillway	5 <sup>th</sup> flow control spillway	41°55'38.28"N	111°57'47.21"W	
Benson Lateral Diversion	4 <sup>th</sup> Gravity Diversion	41°55'38.28"N	111°57'47.21"W	
Town Lateral Diversion	5 <sup>th</sup> Gravity Diversion	41°54'32.89"N	111°57'8.39"W	
Newton Lateral Pump Station	1 <sup>st</sup> pressurizing pump station	41°54'24.32"N	111°57'3.04"W	
Cutler Diversion – Pump Station	3 <sup>rd</sup> diversion off Cutler Reservoir	41°50'34.37"N	111°59'49.70"W	
Hansen & Ezola Pump Station	2 <sup>nd</sup> pressurizing pump station	41°54'19.16"N	111°55'59.24"W	
North & South Litz Pump Station	3 <sup>rd</sup> pressurizing pump station	41°54'19.18"N	111°55'58.59"W	
Hurren Spillway	6 <sup>th</sup> flow control spillway	41°53'38.86"N	111°54'33.99"W	
Highline Lateral Diversion	6 <sup>th</sup> Gravity Diversion	41°53'27.17"N	111°54'29.99"W	
Cantwell Spillway	7 <sup>th</sup> flow control spillway	41°52'9.26"N	111°53'19.51"W	
Amalga Pump Station	4 <sup>th</sup> pressurizing pump station	41°51'8.24"N	111°53'14.46"W	
Jorgensen Spillway	8 <sup>th</sup> flow control spillway	41°50'17.56"N	111°54'5.13"W	
Amalga Lateral Diversion	7 <sup>th</sup> Gravity Diversion	41°50'17.15"N	111°54'5.56"W	



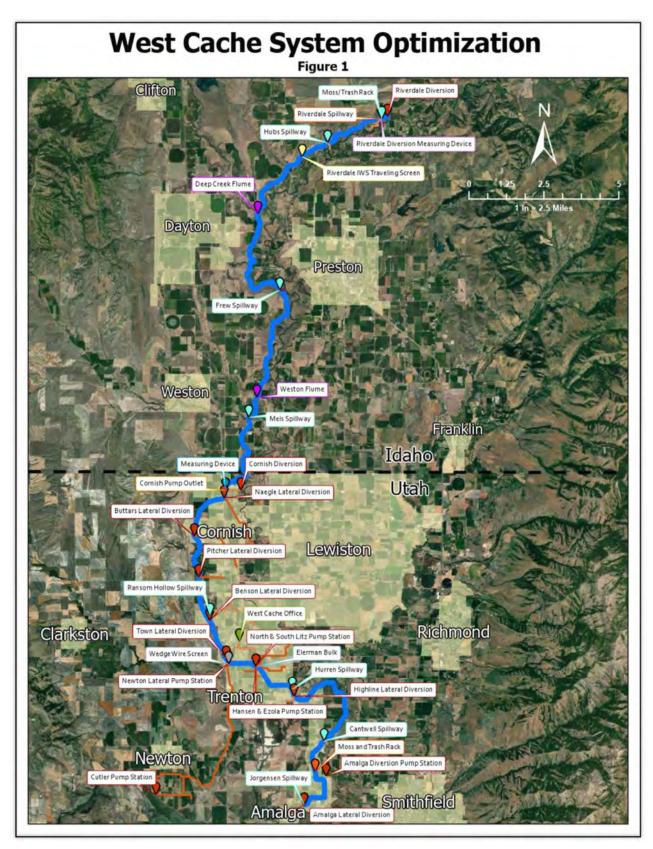


Figure 1. Project Location Map



#### 1.3 - 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.1.6. 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.

The West Cache Irrigation Company operates 50 miles of canals that receive water from the Bear River in Riverdale, Idaho. As described previously, the canal uses various spillways and pumps to help provide the water for the shareholders. Originally, water was only drawn from the Bear River from the main Riverdale Diversion. The Cornish Pump Station Diversion was added to help provide water to the lower region in the event of bank failure in the upper section as was the case in early 2024. During high demand periods it can take days for water to travel from the main diversion to the end users. Another pump, the Amalga Diversion Pump Station, was added to help provide water to the end users in a timely manner.

The system has eight spillways that are manually operated with stop logs to lower or raise water levels in the canal to provide for irrigation demands. Additionally, debris and moss are removed from the canal at various locations in periodic intervals. Sometimes these areas need cleaning weekly and other times they need cleaning hourly depending on the time of year and weather patterns. All aspects of the West Cache System require manual control of operation systems. This means the West Cache operator must physically be at the spillways to adjust water levels or physically check the moss and debris sites across the entire 50-mile canal. This can be near impossible when landslides bury the access road and canal, preventing operators from reaching the control structures located upstream, see **Figure 2**. The purpose of this project is to remedy these situations.





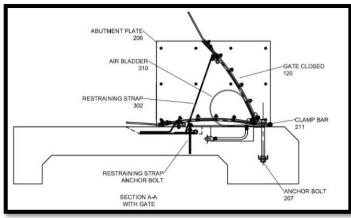
Figure 2. Buried Section of Canal due to Landslide-February 2024

The West Cache System Optimization Project would implement a system-wide SCADA system that will provide real time control of the various systems remotely. The SCADA system will be linked to the spillways, the pump stations, the debris removal sites and other key infrastructure elements.

#### **Spillway Upgrades**

This project will improve all eight spillways by adding an automated Obermeyer Gates or Rubicon FlumeGates to their structure. **Figures 3 & 4** provide an illustration of each gate system. Each spillway will be equipped with level sensors and telemetry so each spillway can automatically adjust to real time conditions given set parameters. Additionally, the spillways will be linked with a central SCADA system so the operator can adjust them remotely in real time. The spillways will also be equipped with a high-level alarm that in the event water is rising to a critical level, the operator will be notified of the concern and can visit the site to determine the issue.







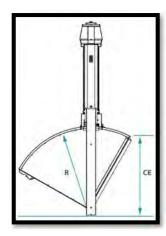


Figure 4. Cross Section of Rubicon<sup>TM</sup> FlumeGate<sup>TM</sup> System

#### **Pump Station Upgrades**

The project will provide SCADA to various pump stations in the system: Newton Pump Station, H & E Pump Station, Cornish Pump Station, Amalga Pump Station, and Cutler Pump Station. The SCADA system will monitor flows at these sites along with voltage draw for the pumps and temperature status for the pumps. This information will help determine the life of the pumps and if they need maintenance checkups. The SCADA system will also be able to remotely start or stop pumps. This will allow the operator to add water when needed remotely and then shut off the pump once water demands decrease. The Newton Pump Station has an existing weir that measures flow moving down the canal to the lower system. This weir blade will be equipped with a level sensor linked to the SCADA system. This information and the other information gathered from the pump stations can then be available in real time and be used to make operational decisions. Additionally, the Cornish Pump Station currently operates with direct drives. Often, a full pump will provide more water than is needed. Without a Variable Frequency Drive (VFD), the pump can only provide one set amount of water. This results in wasted water and wasted energy. This project will install VFDs for the Cornish Pump Station thus providing more control over the amount of water delivered and saving energy and water.

#### **Debris Removal Site Upgrades**

Presently there are two debris collection sites. These sites have screens or grates that gather and remove moss and debris from the main canal. This project will provide cameras for these sites that will be linked to the SCADA system. The operator can then use the cameras to check up on the sites without having to visit them to ensure they are operating smoothly and that they are not being overwhelmed as has happened in the past. The main debris and moss remover site is located near the head works and is known as the Riverdale IWS Traveling Screen. This screen has a series of screens and conveyor belts that remove the moss and debris automatically. This site's equipment will be connected to the SCADA system to allow the operator to activate the screens remotely if needed. The other site is a passive screening device that simply needs periodic debris removal.



#### **Additional Key Infrastructure Upgrades**

The additional key infrastructure sites will be equipped with telemetry and linked to the SCADA system. Starting with the main metering flume near the main diversion in Riverdale. Currently the meter is equipped with telemetry that reports to the state to verify water right usage and only reports periodically. This project will equip the flume with telemetry that will link with the company's SCADA system and will be read continuously. The next site is a level monitoring site known as the Tim Lunday Level. This site will be equipped with a level sensor to provide data on the amount of water passing this site. The West Cache Office will receive the SCADA brain. The main server and equipment will be housed here. These three sites will provide additional data in critical locations to the operator.

This project will enable the canal to operate more efficiently which will conserve time on the operator's behalf, save water instead of allowing it to spill through the spillways, conserve energy with the conversion of the direct drives to VFDs, and allow for quicker canal operations.



#### 2 – Evaluation Criteria

#### 2.1 - Evaluation Criterion A – Quantifiable Water Savings

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

#### All applicants should be sure to:

• **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.

The water that will be conserved with the completion of this project is the water lost due to spillage back into the Bear River due to the inability to manage the water in real time. It has been estimated that 10,785 acre-ft of water is being spilled under the canal's current conditions. Because the canal system is having to carry this spill water, the loss rate for the canal is greater. This transportation of excess spill water is resulting in 1,124.5 acre-ft of water being lost due to seepage, evaporation, and transpiration.

**Table 2** provides the summary of spill volumes associated with each spillway. **Table 3** provides the water losses associated with each reach of canal between spillways before and after the optimization project. The difference between the two time periods is the amount of water that will be saved from transportation losses. **Figure 5** shows the Hurren Spillway in operation. This level of discharge is typical for daily operation.



Table 2: Irrigation Conveyance Spill Water Data

	Hubs Spillway	Frew Spillway	Mels Spillway	Ransom Hollow Spillway	Hurren Spillway	Cantwell Spillway	Jorgensen Spillway
Spill Flows (cfs)	0.00	1.46	2.19	8.20	15.43	0.52	1.91
Spill Volumes (acre-ft)	0	530	795	2,976	5,600	190	693
Total (acre-ft)	10,785						

With a total average demand of 65,336 ac-ft/year and a spill volume of 10,785 ac-ft/year, the percentage of water being spilled back to the Bear River can be calculated as follows:

$$\frac{10,785_{ac*ft/year}}{65,336_{ac*ft/year}} = 0.165 = 16.5\% Spilled$$

Table 3: Water Loss Data resulted from Transported Spill Water (acre-ft)

	Hubs Spillway	Frew Spillway	Mels Spillway	Ransom Hollow Spillway	Hurren Spillway	Cantwell Spillway	Jorgensen Spillway	Total
Pre- Optimization	1,741.5	5,552.5	3,496.0	4,641.5	2,155.0	1,490.0	985.0	20,061.5
Post- Optimization	1,741.5	5,534.5	3,464.5	4,493.0	1,924.5	1,129.5	649.5	18,937.0
Difference	-	18.0	31.5	148.5	230.5	360.5	335.5	1,124.5

With a total average demand of 65,336 ac-ft/year and a loss of 1,124.5 ac-ft/ year, the percentage of water being lost due to transportation of spill water through the West Cache System can be calculated as follows:

$$\frac{1,124.5 \, ac*ft/_{year}}{65,336_{ac*ft}/_{year}} = 0.017 = 1.7\% \, Loss$$





Figure 5. Hurren Spillway in Typical Operation

- **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)?

With the completion of this project, it is projected that 10,785 acre-ft of water will no longer be diverted from the Bear River and that 1,124.5 acre-ft of water will be conserved that is currently being lost due to seepage, evaporation, and transpiration losses.

The 1,124.5 ac-ft/year loss is being lost to seepage through the earthen walls and bed of the existing canal, evaporation from the water surface exposed to sunlight, and heavy vegetation growth covering the banks of the earthen canal. The amounts lost to each of these mechanisms are as follows:

- Seepage Loss = 648.50 ac-ft/year
- Evaporation Loss = 65.5 ac-ft/year
- Vegetation Loss = 411.5 ac-ft/year

The methods used to determine these values are described in the following section. The accompanying calculations for these loss estimations can be



- found in Appendix B. Also included in Appendix B are the references for the supporting documentation of the water loss analysis used.
- 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 losses are not returning to the system for use by others and are instead being lost from the system.
- 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?

There are no known benefits to the current water losses from this project area.

• **Describe the support/documentation of estimated water savings.** Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

Complete calculations for the water loss estimates and water savings are provided in Appendix B – Water Loss Calculations. Also included in Appendix B are references for the supporting documentation of the water loss analysis used.

- 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.
  - 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.

Seepage Losses were determined using a method outlined in the United States Department of Agriculture Soil Conservation Service's National Engineering Handbook Chapter 2 – Irrigation Water Requirements. The full reference has been included in Appendix B. This method is an empirically derived method that uses the geometry of the canal and the soil the canal is constructed from to determine the seepage loss per mile of canal. The geometric data was gathered via site visits, aerial imagery, owner furnished data, and the use of hydraulic equations. The soil data was acquired from the United States



Geological Survey (USGS) online data base. The accuracy of this method is limited to 0.5 ac-ft.

The method outlined in the National Engineering Handbook also provides guidelines to determine water loss due to evaporation and vegetation uptake. Evaporation is generally taken as 10% of the amount lost due to seepage. This amount lost to evaporation is supported by the National Engineering Handbook as well as a published research article form Utah State University (USU) entitled "How Well Does Your Irrigation Canal Hold Water? Does it Need Lining?," and a published presentation from the NRCS entitled "Irrigation Water Conveyance".

Water loss due to vegetation is based on a percentage of the total flow within the earthen canal ranging from 0.5% to 1.0%. The canal banks for the West Cache Canal are frequently treated for vegetation and thus a 0.25% is used to determine total water loss due to undesired vegetation uptake. This method is supported in both the National Engineering Handbook and the presentation previously stated produced by the NRCS. All the materials referenced in this section are referenced in full in Appendix B.

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.

The West Cache System utilizes eight spillway gates. By replacing each spillways' gates, the operator will be able to control the water level throughout the entire system remotely and eliminate over deliveries that cause spilling events at each spillway.

In order to determine how much water is being spilled, records from the water operator were evaluated to determine how much was being spilled at each spillway constantly. This information was compared with spilling events that occur during water changes or water that is spilled and lost due to on-farm watering practices starting and stopping. To make sure water is available for the shareholders, water needs to enter the system 2 to 3 days prior to their period of use. This is because it takes 2 to 3 days for water to flow through the system and arrive at shareholder head gates. When a farmer is finished with their turn, they notify the water operator, and the operator then proceeds to alter the main diversion spillway and other spillways, depending on the location, manually to accommodate the demand change.

However, due to the length of the canal, the lack of communication between shareholders, and the other duties of the operator, spillways are not altered till the next day typically. This means that between the time the water is no longer needed by a shareholder and the time adjustments are made to the spillways to accommodate the change in demand, 36 hours (typically) have passed. This



means the canal system was taking more water than needed for 36 hours. This water is then spilt out over the spillways.

If the operator had the ability to alter gates remotely in real time, this 36-hour delay period could be eliminated, and that water could be saved. To determine how much water is lost due to on-farm watering practice changes, the number of shares in between spillways was used to find how much water is used in each reach. This then provides how much water is released when on-farm watering ends.

Following the described method, an amount of spill water can be determined. This information is then used to determine post project flows (a reduction of 10,785 ac-ft/year). These new flows are then used to determine the change in seepage losses, evaporation losses, and transpiration losses that will occur when less water is diverted using the new SCADA system.

Therefore, the water savings comes from the difference in the efficiency rate between the Bear River and the artificial canal system. Because this spill volume of water was diverted down the canal system instead of being left in the Bear River, it experiences high losses in terms of seepage, evaporation, and transpiration.

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?

Flows are currently measured by the Bear River Commission. Flows are measured at the main diversion in Riverdale with a concrete flume and level sensor and at each pump station diversion with a pipe flow meter. The data can be seen on their website <a href="www.bearriverbasin.org/canals/below-bear-lake">www.bearriverbasin.org/canals/below-bear-lake</a>. The data is reported in tenths of a cfs and are collected every 15 minutes or every hour depending on the site. There are times in which the sensors are reporting out of range and cannot be trusted. The accuracy has been questioned before and is one reason this project will be providing additional meters to verify the measurements taken by the Bear River Commission.

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

The project proposes to install various level sensors throughout the canal network. These level sensors will be ultra-sonic level sensors. These types of pf sensors are common in open channel conditions and can be secured in permanent installations easily. Currently it is planned to use VEGAPULS c 21 sensors which have an accuracy of +/- 2 mm and a range of up to 15 meters. These are robust sensors that provide reliable accurate data. As the design of



the project continues a different sensor may be selected depending on availability and compatibility with the SCADA system.

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

Annual farm delivery volumes will not be reduced in response to this project. The water will be delivered in a more efficient and timely manner, but it will still be delivered by the same method, open channel flow.

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

Water used by the West Cache Irrigation Company is recorded by the Bear River Commission. This is done to ensure proper usage of water rights and to help ensure all systems on the Bear River can operate and be aware of each other. The Bear River Commission records the water usage hourly and provides it on their website: <a href="www.bearriverbasin.org">www.bearriverbasin.org</a>. Their system measures how much is taken from the Bear River but not how much is returned via spillways. With the data provided from the Bear River Commission and the data collected with the new SCADA system, comparisons to past years can be made to quantify actual water savings.

#### 2.2 - Evaluation Criterion B - Renewable Energy

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.

#### 2.2.1 - Subcriterion B.2: Increasing Energy Efficiency in Water Management

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

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



a. 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.

This project will place a Variable Frequency Drive (VFD) at the Cornish Pump Station. Currently the Cornish Pump Station's six 250 Hp pumps are operated with direct drives only. This means if only a small amount of water is needed, a full pump is turned on at full speed, and more water is pulled than is needed and wasting energy. During the notable 2021 Season, the Cornish pump station was used for 1,293 hours pulling a total of 453,758 kilowatt hours of energy. Each pump is capable of moving 14 cfs of water. If only 6 cfs is needed, the direct drive is only capable of the full 14 cfs, thus overdelivering.

After evaluating the system and the 2021 demands, it can be estimated that ½ of a pump was overused every time the pumps were turned on. Sometimes it was less, other times it was more, but it averages out that ½ of a single pump's energy and flow was not needed for the year. Using this evaluation, the 2021 usage of the pumps was re-evaluated based on the ability to use partial pump capacities instead of the full pump's capability only. **Table 4** provides the resulting data from the evaluation. This evaluation still assumes the pumps are used for 1,296 hours, but they flow was dialed into what was needed, rather than what the full pumps could provide.

	Pulled acre-ft of water	Horsepower Consumed	Kilo Watt Hours Consumed	Percent Savings
Existing Pump Values	2465.66	608,500	453,758	0%
Pump with a VFD Capability	1706.33	368,691	274,933	39%
Saved Values	759.33	239,809	178.825	

Table 4: Energy Savings Resulting from a VFD at the Cornish Pump Station

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

The reduced electrical demand of 178,825 kilowatt hours will significantly reduce the total electrical demand of the Cornish Pump Station (~39% reduction). This will help reduce the total carbon footprint that the West Cache's operations have. Using the tools provided by the EPA on their website: <a href="https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator">https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator</a>, it can be estimated the 178,825 kilowatt hours saved is equivalent to 127 metric tons of greenhouse gases (as carbon dioxide) eliminated from the environment.

c. 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 projects impact the current pumping requirements and energy usage?



Currently the Cornish Pump Station consists of six 250 Hp pumps. They are operated with a direct drive which limits their flexibility in operation. The project will equip the pump station with a VFD that will allow the operator to control the speed of the pumps, so they deliver the flow rate needed, rather than the full flow of the pump regardless of the demand. As previously discussed, it is estimated 178,825 kilowatt hours can be eliminated from the operation of the Cornish Pump Station. The project will not alter the time the pumps are in operation; it will alter how hard the pumps must work. This project will also extend the life of the pumps.

d. 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 estimate originates at the Cornish Pump Station which is approximately the midpoint of the system. Refer to **Figure 1** for a map of the system. The energy savings estimate is the change in energy to move water from the Bear River at the Cornish Pump Station to the main canal which is approximately one half a mile away.

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

No treatment of irrigation water is required.

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

The proposed project will reduce vehicle miles driven. The current system is all manual control, meaning the operator must travel the 50-mile canal daily to check on things and make any changes. It is not uncommon for the operator to travel to the head works twice a day and the lower spillway three times or more a day. A typical round to check status is about 100 miles round trip. This is often done multiple times a day. Over the course of an irrigation season (183 days), over 35,000 miles are driven just in routine checks. This does not account for emergency checks. Listed below are some common trips that occur daily and their distances.

- Shop to Head Works 19.5 miles
- Headworks to Hurren 26.5 miles
- Hurren to Jorgensen 4.7 miles
- Jorgensen to Headworks 33 miles
- Headworks to Newton 26 miles
- Newton to Cutler Pump Station 7 miles
- Headworks to Cornish Pump Station 20 miles
- Cornish Pump Station to Riverdale Screen 20 miles



- Riverdale Screen to Newton Pump Station 22 miles
- Newton Pump Station to Hurren 3 miles
- Hurren to Shop 9.5 miles
  - Typical Day 191.2 miles

With the completion of this project, all key sites could be addressed remotely. This would reduce a typical day to less than 60 miles a day. One visit to the headworks (physical moss removal), one to the Newton Station (physical moss removal), one to the Jorgensen Spillway (visual inspection), and a return trip to the shop. This project will result in a reduction of over 24,000 miles a year, a 68% (24,000/35,000) reduction in vehicle miles driven. This reduction in driving is equivalate to 9.6 metric tons of greenhouse gas (as carbon dioxide) per <a href="https://climate.mit.edu/ask-mit/how-much-ton-carbon-dioxide">https://climate.mit.edu/ask-mit/how-much-ton-carbon-dioxide</a>.

g. 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).

The SCADA site not on a pump station or on the Riverdale Screen will be powered with solar panels and batteries. Likewise, the gate mechanism for the Riverdale Spillway and the Hurren Spillway and their accompanying SCADA and control systems will be powered with solar panels and batteries. Any additional SCADA components installed in the future as this system grows will also be solar systems.

#### 2.3 - Evaluation Criterion C – Other Project Benefits

Up to **15 points** may be awarded under this criterion. This criterion prioritizes projects that addressa 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:
- a. Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:
  - Describe recent, existing, or potential drought or water scarcity conditions in the project area.

The years 2021-2023 illustrated the severity of the drought conditions in Cache Valley. During these seasons, water shortages occurred across the county. Municipalities and irrigation companies were forced to drastically reduce water consumption. During the notable 2021 season, the West Cache operators did their best to manage the system as tight as they possibly could using the manual spillways and controls. They were able to conserve their



allotment enabling them to continue watering even past the time in which other companies had to cease watering. However, the effort to operate the system so efficiently using the manual controls required an average of 16 hours a day, 7 days a week from the operator. This level of effort could be accomplished using the proposed project while only consuming a fraction of the operator's time. The proposed project will provide the necessary tools to operate the system effectively every year instead of during a single critical year.

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

Between 2020 and 2023, Cache Valley, Utah experienced a significant drought, as reported by the National Integrated Drought Information System (NIDIS). This prolonged period of aridity affected the region's agriculture, water supply, and natural ecosystems. Farmers faced challenges in irrigating crops, while municipalities grappled with the need to implement water conservation measures to ensure sustainability of their water resources. The environmental consequences were also notable, with diminished streamflows affecting aquatic life and a heightened risk of wildfires due to the dry conditions.

 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).

There is a commonly used expression in Utah: We are either in drought or preparing for the next one. Projected increases in the severity and duration of droughts in Cache Valley, Utah, align with broader climate change models predicting harsher drought conditions across the Western United States due to higher temperatures, altered precipitation patterns, and greater evaporation rates. The valley's reliance on mountain snowpack for its water supply is particularly vulnerable, as rising temperatures lead to earlier snowmelt and reduced summer water availability. **Figure 6** below shows the historical drought data for Cache Valley taken from

https://www.drought.gov/states/utah/county/cache.



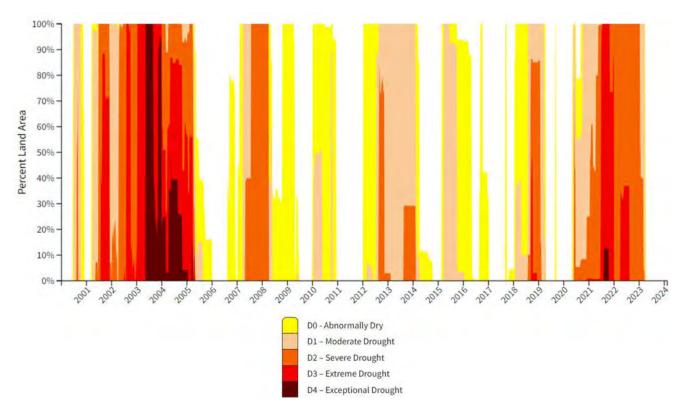


Figure 6. Historical Drought Conditions for Cache County

b. 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.

Cache Valley, Utah, confronts specific challenges impacting its energy sustainability. Cache Valley's geographical setting exacerbates air quality issues, with inversions trapping pollutants within the valley and contributing to health and environmental concerns. The valley's susceptibility to severe weather events further highlights the importance of enhancing the resilience and reliability of its energy infrastructure to prevent service disruptions, emphasizing the critical need for sustainable energy solutions that address these interconnected challenges.

As more farms are converted to sprinkler systems instead of flood irrigation, the pattern of water demand has been changing. With flood irrigation, the watering periods were longer and held to a tighter schedule. With the development of more effective on-farm watering practices, the watering periods have shortened but are now more frequent. This requires changes to the main canal's spillways more frequently. This increase in demand has resulted in an ineffective delivery system as changes cannot be made in a timely manner to properly deliver water. This results in two problems; water shortages occur because spillways cannot be adjusted fast enough, and over delivery of water occurs because the operator is forced to predict needs and provide more water to carry the system through quick changes.



Another issue made clear during this most recent drought is the lack of ability to reduce water usage effectively in times of drought. During the irrigation season of 2021, Utah was under strict guidance to reduce water usage. This meant no overwatering was permitted, which in turn caused water shortages as the current system is very difficult to make quick adjustments, as all spillways are operated manually. This drought has made it clear that drought concerns and continual climate change will only become more intense requiring tighter management of water the current canal system cannot obtain.

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

The implementation of canal automation in conjunction with the SCADA system, as elaborated earlier in Section 2.2.1.f, is projected to significantly enhance operational efficiency, leading to a reduction in greenhouse gas emissions equivalent to approximately 9.6 metric tons. This improvement highlights the system's potential contribution to our environmental sustainability goals by optimizing energy use and minimizing our carbon footprint.

Presently there are two pump stations along the canal system moving water from the Bear River to the main canal in times of high demand. These pumping stations are equipped with direct drives only. Direct drive pumps can only provide one set amount of water. If less water is needed, the pump will over-deliver water which is then spilled back into the Bear River. This effectively wastes the energy used to lift the water into the canal system. Often only a low volume of water is needed, but due to the current setup, more water is pulled than is required and is then wasted at the end of the system.

d. 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?

By installing actuated spillway gates with remote capabilities, the gates can be altered in real time to accommodate shifting water demands as users utilize the water. In the past, adjustments had to be made manually, which along a 50- mile canal system can take a significant amount of time. The new SCADA system will provide accurate data on water levels allowing the operator to make adjustments using the automated gates to provide the correct amount of water when needed to the water users. This will help reduce water shortages and water overages as changes can be made quickly from anywhere.

The system will also help the operator accommodate drought conditions. The spillways will be equipped with level sensors to provide information regarding how much water is being spilled. This information can then assist the operator in making real time decisions if spillways need to be altered to conserve water during drought conditions. The SCADA system will also help accurately report water usage to the



State, as current measures do not account for the amount of water spilt back into the Bear River and only the amount taken from the river.

This project will also equip the Cornish Pump Station with a Variable Frequency Drive (VFD). This VFD will be linked to the SCADA system allowing the operator to adjust the speed of the pumps to deliver the amount of water needed rather than the full amount the pump can deliver. This will reduce wasted water through spillways and will help reduce wasted energy on pumping water that is not required.

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

It is anticipated that 10,785 acre-ft will remain in the Bear River. Historically, this amount has been diverted down the main canal to be spilt back downstream. Additionally, it is anticipated that of the spilt amount, 1,124.5 acre-ft will be conserved annually instead of being lost to seepage and other methods of loss. This water will remain in the Bear River and be managed by the Utah Division of Water Rights.

The Bear River provides irrigation water to thousands of acres through various canal companies, many of which are downstream of the West Cache Diversion. Additionally, the water that reaches Cutler Reservoir (downstream of the West Cache diversion, is used to generate electricity at the Cutler Dam. Ultimately the water remaining in the Bear River reaches the Bear River Migratory Bird Refuge and the Great Salt Lake.

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

The West Cache Irrigation Company only uses water from the Bear River in accordance with their water right as managed by the Utah Division of Water Rights and Idaho Department of Water Resources (West Cache has both Utah and Idaho Rights). Those who have active water rights will be able to draw on the conserved water in accordance with their water rights. The Utah Division of Water Rights will be the mechanism used to ensure the water saved is used as intended.



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

The West Cache Irrigation Company spans two states, Idaho and Utah. The company has an Idaho Water Right with Utah Change applications. The implementation of this project will provide valuable data on water usage across state lines, and it will measure water removed from the Bear River in Idaho and returned to the Bear River in Utah.

Additionally, the West Cache Irrigation Company is part of the Bear River Commission. The Bear River Commission oversees the water in the Bear River which spans Wyoming, Idaho, and Utah.

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

Metered secondary connections will urge all shareholders to consume less water. For residents, they are encouraged to use less water for the lawn and gardens. Farmers will be encouraged to find ways to optimize the water that they are using and increase water efficiency. Any water that can remain in the Logan River will end up in the Great Salt Lake which will help avoid the devastating consequences from the lake drying up. Water that is left in reservoirs will also be available for emergency and culinary drinking water uses.

Agriculture is an important aspect of life in Cache Valley. Slowly, the flood irrigation system and many canals are being lined, piped, and converted into pressurized systems to better conserve water and serve agricultural users. Since water rights, water access, and water availability are integral parts of life and business in the valley, it is detrimental to crops, business, and recreation when water is unavailable due to water loss, canal bed failure, and drought. This project will greatly reduce general water loss and guarantee an increase in available secondary water therefore preventing potential conflicts due to water access.

- 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:
- a. 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 project would indirectly benefit the plants and animals along the Bear River. As the conserved water is left in the river, it will be available to the surrounding flora and fauna dependent on the river. Preliminarily, an IPaC data search indicates there are three threatened species that could potentially benefit from the conserved water: Canada Lynx, Yellow-billed Cuckoo, and the Ute Ladies'-tresses. The Canada Lynx and Yellow-billed Cuckoo rely on water ways for food and habitat areas. The Ute Ladies'-tresses rely on water ways for moisture and transportation of seeds. However, critical habitats have not been identified in the project area.

b. 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.).

Water conserved by this project will remain in the Bear River. Currently, this water is being removed from the river and transported through the canal network which returns only part to the river in spillways. The rest is lost in irrigation needs, seepage, evaporation, and transpiration. This project will help in maintaining water levels between the main diversion in Riverdale and the Cutler Reservoir. The duration of these benefits would be between April 15th and October 15th every year.

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

The proposed project, focusing on the conservation of water within the Bear River, is anticipated to have positive implications for the local ecosystem and may contribute to improving the status of certain species. It is expected by retaining water in the Bear River rather than diverting it through the canal network, the project will benefit the ecosystem by sustaining water levels between the main diversion in Riverdale and the Cutler Reservoir from April 15th to October 15th annually. Sustained water levels may enhance habitat conditions, potentially reducing stress on aquatic species and supporting their ecological needs. The project's focus on water conservation suggests a positive contribution to biodiversity and may mitigate factors that could lead to the listing of certain species.

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

This project will indirectly benefit the ecosystem of rivers and canals from Cache Valley to the Great Salte Lake, the final destination for the water conserved. These combined effects support various plant and animal species, contributing to overall ecological resilience.



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

The West Cache System Optimization Project significantly contributes change adaptation and resilience by implementing a SCADA system, enhancing water distribution efficiency. The project's automation features allow for precise adjustments to water levels, optimizing resource use during periods of water scarcity and bolstering drought resilience. By reducing reliance on manual operations and offering remote monitoring capabilities, the project addresses challenges posed by climate-related disruptions, thereby strengthening community resilience to the impacts of climate change.

b. Does the project seek to improve ecological resiliency to climate change?

This project will indirectly benefit the local ecology. The water conserved will be left in the Bear River and will help reduce the effects of droughts and climate change on the ecological area dependent on the Bear River.

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

The integration of canal automation with the SCADA system, discussed in Section 2.2.1.f, is expected to improve operational efficiency, resulting in a reduction of approximately 9.6 metric tons of greenhouse gas emissions. This enhancement represents the system's potential to contribute to environmental sustainability by optimizing energy utilization and reducing our carbon footprint.

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

The proposed project incorporates sustainable practices by using ultrasonic level sensors for flow measurements, reducing spillage through remote gate control, and optimizing water delivery efficiency. These measures minimize environmental impact, promote water conservation, and enhance overall community climate resilience.



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

The project contributes to climate change resilience by optimizing water distribution, fostering sustainable agriculture practices, and reducing the need for excessive water withdrawals from natural sources. By promoting efficient irrigation and minimizing resource exploitation, the project indirectly supports environmental sustainability and climate resilience.

# 2.4 - Evaluation Criterion D – Disadvantaged Communities, Insular Areas, and Tribal Benefits

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.

#### 2.4.1 - 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.



Using the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), we identified several disadvantaged communities within the project area, primarily located in and around Cornish, Trenton, Newton, and Amalga, Utah. These communities are characterized by economic, environmental, and health burdens that make them particularly vulnerable. The CEJST data shows these areas as disadvantaged due to a combination of factors, including lower median household incomes, higher unemployment rates, and greater exposure to environmental hazards compared to state and national averages.

The West Cache Irrigation System Optimization project directly benefits these identified disadvantaged communities through several key improvements:

- o Enhanced Water Efficiency and Reliability: By upgrading the canal system with automated controls and telemetry, the project ensures more reliable water delivery, which is crucial for the agricultural livelihoods predominant in these areas. This reliability can lead to increased agricultural productivity and, consequently, economic growth within these communities.
- Reduced Environmental Impact: The project's emphasis on efficient water use and reduction of spillage back into the Bear River reduces the environmental impact, contributing to healthier ecosystems upon which these communities depend. This is particularly significant for communities with limited access to clean water and those that are more directly affected by environmental degradation.
- o Increased Public Safety: The introduction of remote system controls minimizes the need for manual adjustments during adverse weather conditions, enhancing public safety. This benefit is crucial in areas where infrastructure and emergency response options may be limited.
- Economic Opportunities: By improving the efficiency of the irrigation system and reducing operational costs through energy savings, the project may free up resources that can be reinvested into the community. This could include job creation in maintenance and monitoring of the new systems, as well as opportunities for local businesses to expand with the improved agricultural productivity.

The project's alignment with the Justice 40 Initiative is clear, as it not only addresses the immediate needs of the disadvantaged communities identified through the CEJST but also contributes to long-term sustainability and resilience. By focusing on these communities, the West Cache Irrigation System Optimization project ensures that the benefits of modernized infrastructure and improved environmental management are equitably distributed, supporting the broader goal of environmental justice for all.



• 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 impact the shareholders within the irrigation company the most, many of which would be considered disadvantaged. The company serves the agricultural community in and around the communities of Cornish, Utah; Trenton, Utah; Newton, Utah; and Amalga, Utah. These areas are considered economically disadvantaged due to their median household incomes as measured by the County. This project would provide an increased level of irrigation service for these communities.

This project would also increase the safety along the West Cache system. At times the roads are unsafe to travel due to storm events and bank stability. The ability to control the systems remotely would eliminate the need to travel unsafe roads during dangerous time periods.

#### 2.4.2 - 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 does not directly benefit any Tribe. It does indirectly benefit the Shoshone Tribe in the southeast area of Idaho in Franklin County. The Tribal Lands are down gradient from the main canal and are susceptible to flooding. This project will help detect flooding conditions and provide the tools to quickly mediate flooding risks.

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

This proposed project does not directly support Tribal led conservation and restoration priorities, it doesn't benefit indigenous traditional knowledge and practices either.



• 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?

This proposed project does not directly support Tribes in climate change or drought concerns.

#### 2.5 - Evaluation Criterion E – Complementing On-Farm Irrigation Improvements

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

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.
  - o Provide a detailed description of the on-farm efficiency improvements.
    - This project will conserve water that could be available for on-farm use within the West Cache water right allotted through company shares. The project will also increase the reliability and stability of water flow. In the past, the canal has been managed in a reactive method. With the implementation of the SCADA system with actuated spillways, the system can now be operated in a proactive manner. This will help ensure water is available for users when they need it.
  - Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?
    - Various farmers throughout the company have requested NRCS funding for onfarm improvements. Additionally, more shareholders are planning on applying with the NRCS. These applications are complementary to this project but are not made in direct response to this project.
  - 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.
    - These on-farm projects are not directly in response to this project.
  - Applicants should provide letters of intent from farmers/ranchers in the affected project areas.



Although farmers/shareholders have and continue to apply for funding through the NRCS for on-farm improvements, they are not directly in response to this project.

- 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 system optimization of the West Cache canal will provide valuable information to help increase the efficiency of the main delivery system. However, this project will not directly facilitate on-farm improvements. It will complement them in the increased reliability and stability of water flows, but it does not directly facilitate them or make them possible.

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

The proposed project will complement present and ongoing on-farm projects with their increased efficiency in water management. The proposed project's goal is to help increase the efficiency in which water is delivered to the shareholders and taken from Bear River. By having control of the spillways in real time, water can be delivered to shareholder turnouts in a quicker fashion. This will in turn improve farm efficiency. Additionally, in the past there have been moments in which adjustments could not be made to the main canal quick enough and caused disruptions for on-farm watering practices. This often led to watering sets having to be restarted thus wasting water and time. This project will help increase the stability and reliability of the water delivery system for all shareholders.

- 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.

This project will help conserve water throughout the system and will increase the stability and reliability of the water which will help conserve water for on-farm systems. However, this benefit has not been quantified in a manner that can provide an accurate water savings value.



• 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.

Please reference **Figure 1** for a map of the system.

#### 2.6 - Evaluation Criterion F – Readiness to Proceed

*Up to 8 points may be awarded for this criterion.* 

Points may be awarded based upon the extent to which the proposed project is capable of commencing upon entering into a financial assistance agreement.

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.

The first task would be to secure funding. After being awarded this WaterSMART Grant, the irrigation company would then apply to the Utah Division of Water Resources for the remaining funds through a loan (March 2024 to May 2024). Once all funding is secured, design of the system would begin (January 2025 to May 2025). During the design period, environmental clearances will be obtained. With design and environmental work completed, the project would then be publicly bid for construction (May 2025 to June 2025). After the bidding process is complete and a contractor is on board, construction would begin and would later be completed in the following spring timeframe (June 2022 to April 2026). The project would be completed and operational by August of 2026.

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

To complete this project, it is anticipated that environmental clearance, SWPPP, Land Disturbance Permit and Conditional Use Permit from Cache County will be required. Considering most of work to be completed will have minimal impact at site, the construction will be treated as acceptable canal operations.

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

The spillways that will be retrofitted with the actuated gate systems will need to be designed and engineered to ensure proper flow capacities and safety. The SCADA system itself will also require design work to ensure proper signal strength and range.



The construction of the project will also be over seen by an engineer to ensure things are completed as designed.

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

No new policies or administrative actions will be required to implement the project.

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

Design for this proposed project has not started yet, it is anticipated to start in January 2025 once this grant application was awarded. There is no additional design or construction work required prior to this project.

• 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?

Attached in Appendix D is a detailed schedule for this project.

#### 2.7 - Evaluation Criterion G - Collaboration

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

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

• Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?

The Utah Division of Water Resources have stated their support for this project and are excited to view its success. Likewise, the Amalga Town, Franklin County, Cache Water District and West Cache Irrigation Company (the applicant) have also stated their support. The Cache Water District has also requested information regarding past improvements and reports on planned improvements, and Amalga Town will be the beneficiary of this irrigation system optimization project.



Furthermore, the Federal Representative Blake Moore and Utah State Senator Chris Wilson expressed their support, because they believe this proposed project will significantly benefit the Cache Valley area and alleviate the Utah drought condition. Appendix A includes all letters of support from above entities and individuals.

• What is the significance of the collaboration/support?

The Utah Division of Water Resources (DWRe) provides funding for water projects such as this. Their support is paramount in completing the project. Without their support the project could not move forward. With DWRe support, the irrigation company can secure the loan necessary to complete the project. DWRe's also helps promote future projects based on the funded projects.

Support from the Amalga Town, Franklin County Commissioners and Cache Water District is also crucial. Both entities' responsibilities are to help manage and protect the water resources within Cache Valley. Their support for this project will help them further see the need to protect and conserve the water used in agricultural processes.

The endorsement of the West Cache Irrigation System Optimization project by Federal Representative Blake Moore and Utah State Senator Chris Wilson significantly underscores the project's importance. Their support highlights the project's critical role in addressing key issues such as water conservation, sustainable agriculture, and infrastructure modernization within their constituencies. It reflects a recognition of the project's potential to make tangible improvements in water management efficiency, environmental sustainability, and economic vitality in the region. This political backing also signals to community members and stakeholders that the project aligns with broader goals of enhancing public safety, supporting disadvantaged communities, and fostering economic growth through improved agricultural practices. Essentially, their endorsements serve as a testament to the project's capacity to address pressing local and regional challenges, contributing to a more resilient and prosperous future for the areas served.

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

Members of the West Cache Irrigation Company Board are currently being requested to present at various venues to discuss the improvements they have made to their irrigation system. Other irrigation companies have been making visits to look at the improvements made thus far. With the completion of this project, it is anticipated the attention from other irrigation companies will only increase. It can be reasonably predicted that this project will encourage similar projects here in Cache Valley and in other locations.

Additionally, legislative members have visited the company's past projects to better understand infrastructure needs for the agricultural community. Their visit occurred during this past summer.



• Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?

The 50-mile West Cache Canal services approximately 15,000 acres of farmland, with all regions routed along are agricultural areas. By replacing the spillway structures and installing the automated headgates with SCADA system, more water can be saved in the irrigation canal, the irrigation water can be allocated in a higher efficiency. The enhanced water efficiency can lead to more sustainable farming practices, allowing for the cultivation of crops with reduced water input, which can be especially crucial in areas prone to drought.

Although it might not meet the standards required for drinking purposes without treatment, the saved irrigation water can be an invaluable resource for fire protection. Fire departments require large volumes of water for firefighting and emergency response. Utilizing saved irrigation water for this purpose can help ensure adequate supplies are available for municipal fire services, reducing the strain on potable water reserves and ensuring communities are better prepared for fire emergencies.

Additionally, in the industrial sector, saved irrigation water can be particularly beneficial for use in cooling towers. Cooling towers are essential components in many industries, including power generation, manufacturing, and chemical processing, where they help remove heat from various processes. Using non-potable water from irrigation savings in cooling towers can significantly reduce the demand for treated water and lower operational costs. It also promotes sustainable water use by recycling water through industrial processes.

Meanwhile, this proposed project possesses huge benefits to the environmental and recreational sectors. Conserving water helps maintain natural habitats, supports biodiversity, and can improve the quality of local water bodies by reducing withdrawals that may lead to lowered water levels and quality. Also, water bodies maintained at healthier levels support recreational activities such as fishing, boating, and swimming, thereby also supporting local economies dependent on tourism and recreation.

In summary, efficiently saving irrigation water not only supports the direct needs of agriculture but also contributes positively to broader environmental, social, and economic objectives, making such projects highly beneficial across multiple sectors.

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

Attached in Appendix A are letters of support from the DWRe, Amalga Town, the Cache Water District, Federal Representative Blake Moore, State Senator Chris Wilson.



#### 2.8 - Evaluation Criterion H - Nexus to Reclamation

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

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

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

The West Cache Irrigation Company does not have a water service, repayment, or O&M contract with Reclamation.

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

No, the West Cache Irrigation Company does not receive reclamation water.

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

The West Cache Irrigation Company has done recent work with Reclamation through other WaterSMART grants. As listed in the Background Section, West Cache has had the opportunity to work with Reclamation on four separate WaterSMART grants: Newton Lateral Piping Project, Southfield Area Piping Project, Hansen & Ezola Piping Project, and the North and South Litz Piping Project which is still in progress. The West Cache Optimization Project would benefit all four of these projects as each of them are laterals off the main canal. Their pump stations will be linked to the new SCADA system, and they will become an integral part of the system. The data on the pump station's pumps and flow meters will provide valuable data for the SCADA system.

• *Is the applicant a Tribe?* 

The West Cache Irrigation Company is not a tribe.



#### 3 – 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.

The benefits of the proposed project will be categorized into three areas:

- 1. Reduction of water loss during water conveyance.
- 2. Reduction of energy consumption and costs due to pumping requirements.
- 3. Increased efficiency, and reliability of the West Cache Irrigation System.

The reduction of water loss during water conveyance will be measured by comparing historic water usage prior to the implementation of the proposed project with water usage data after the project's completion. Multiple years of historical data will be used in the comparison to help minimize the effect of abnormal years. Likewise, as more data is collected after the project's completion, more data will be available for comparison to measure the performance.

Reduction of energy consumption will be quantified by comparing past recorded electrical demands from the Cornish Pump Station to the new electrical demands of the Cornish Pump Station after it has been equipped with a VFD. Again, historic data is available for comparison. The data consists of both amounts of water pumped and total electrical consumption as measured by the electrical supplier, Rocky Mountain Power.

The increased efficiency of the West Cache Irrigation System as a whole is a difficult thing to measure. The best way to compare the increased efficiency is to establish a baseline of resources used to operate the canal in its current state during the 2024 irrigation season. These resources will include:

- Miles traveled
- Temporary employees hired to assist the operator
- Hours spent by temporary employees
- Quantity of trips visiting sites that have been identified in this project that will receive upgrades



During the 2024 and 2025 irrigation season, the operator will record how these identified resources are used during the operation of the canal. This information will provide a baseline of resources needed to operate the canal without the SCADA system and automated gates. After the project's completion, these same resources will be monitored during the 2027 irrigation season (and future seasons). The data collected post project completion will be compared to the baseline to evaluate increased efficiency.



#### 4 – Project Budget

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.

#### 4.1 - Funding Plan and Letters of Commitment

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, that are necessary to complete the project. Please include the following chart (Table 4) to summarize all funding sources. Denote in-kind contributions with an asterisk (\*).

The funding plan for the project is as follows:

- 3.3 % from West Cache Irrigation Company: \$ 132,135
- 18.2 % from West Cache Irrigation Company through the Utah Division of Water Resources Loan: \$ 748,765
- 36.5 % from Utah Department of Agriculture and Food (UDAF): \$ 1,500,000
- 42 % Bureau of Reclamation WaterSMART Grant: \$1,724,100
- Support letters from the Utah Division of Water Resources can be found in Appendix A. A draft copy of the official resolution supporting the project from the West Cache Irrigation Company can be viewed in Appendix E.
- The funding plan is to borrow \$748,765 at 0% for 30 years from the State of Utah Board of Water Resources.
- Ratification of the loan will take place in the Water Resource Board meeting held in the spring of 2025 after the awarding of the WaterSMART Grant. Once the loan is ratified by the Water Resource Board, funds are available.
- Passing of the loan by the Division of Water Resource Board is the only constraint on the funds.
- There are no other known contingencies that are associated with the funding commitment.



West Cache Irrigation Company will be placing monetary contributions directly to the project in the amount of \$132,135 (3.3%) at this stage of planning. The cost-share requirements will be met by the West Cache Irrigation Company securing a loan from the Utah Water Resource Board as administered by the Utah Division of Water Resources. The loan from the Utah Division of Water Resources is currently pending, although they have stated their support of the project as indicated in their support letter in Appendix A. If this loan cannot be secured, this project cannot move forward. Furthermore, West Cache Irrigation Company has secured \$500,000 UDAF grant and will be securing another \$1,000,000 UDAF grant to the total amount of \$1,500,000 (36.5%).

The West Cache Irrigation Company signed an engineering agreement with Sunrise Engineering for preliminary engineering and Reclamation application preparation.

- Preliminary Design & Funding Assistance Sunrise Engineering: \$10,497
- Expenses Occurred between January May 2025
- Without these expenditures the West Cache Irrigation Company would not have had the resources to make the application with Reclamation.
- West Cache Irrigation Company shareholders are paying for these expenses on a per share basis and this cost is <u>NOT</u> included as costs to be funded by this budget proposal.

Funding Source	Amount	Percentage
Non-Federal Entities		
West Cache Irrigation Company	\$ 132,135	3.3%
West Cache Irrigation Company – Division of Water Resources Water Loan	\$ 748,765	18.2%
Utah Department of Agriculture and Food (UDAF)	\$ 1,500,000	36.5%
<b>Reclamation Federal Entities</b>		
Requested Reclamation Funds	\$ 1,724,100	42%
TOTAL PROJECT FUNDING	\$ 4,105,000	100%

**Table 5:** Summary of Non-Federal and Federal Funding Sources

#### 4.2 - Budget Proposal

The budget proposal should include detailed information on the categories listed below and must clearly identify all items of cost, 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 preaward costs (Table 5).



Table 6: Total Project Cost

CONTRACTUAL COSTS	AMOUNT	
Engineering Consultation	\$	616,000
Environmental Consultation	\$	26,000
Material Procurement and Contractor Services	\$	3,463,000
SOURCES	AMOUNT	
Costs to be reimbursed with the requester Federal funding	\$	1,724,100
Costs to be paid by the applicant	\$	132,135
Costs to be paid by DWRe Loan secured by applicant	\$	748,765
Costs to be paid by UDAF grants	\$	1,500,000
TOTAL PROJECT COST	\$	4,105,000

See the Budget Narrative for a detailed breakdown of these costs.

#### 4.3 – Pre Awards 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.

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
- The date of cost incurrence
- How the expenditure benefits the project

The only pre award cost at the time of submission is the cost to prepare and submit this grant application. The individual applicant is covering the cost of preparation and grant submittal. This amount will not be requested for reimbursement. During spring and fall of 2025, permitting and predesign costs may be incurred; the applicant is requesting that funding go towards these costs which are included in the budget.



#### 5 – Environmental and Cultural Resources Compliance

West Cache Irrigation Company understands that in no circumstances they are to begin with any ground-disturbing activities on this project prior to the acceptance of their completed environmental and cultural resources compliances as approved by a Reclamation Grants Officer as documented in a written notification. West Cache Irrigation Company further understand that this pertains to all components of this project including those funded by the non-Federal cost-sharing entities, namely West Cache Irrigation Company and the State of Utah's Department of Natural Resources. Lastly, West Cache Irrigation Company understands that in the event of the occurrence of any ground-disturbing activities, they may risk forfeiting Reclamation funding.

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.
  - This project involves replacing spillway structures and install SCADA system to key control devices in in a waterway. The waterway is regularly chemically dosed and cleaned therefore it is not suitable for habitat. The ditch is regularly cleaned with an excavator and burning to help weed and grub control. Best management practices will be used to protect and conserve air quality, water quality, and habit including operating during normal business hours, all equipment complying with emissions regulations, and only disturbing the previously disturbed area in the canal right of way.
- 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?
  - An initial IPaC supplemental evaluation was conducted to preliminarily determine if any endangered species are present. It is anticipated there will be no endangered or threatened species in the project area when a full environmental investigation will be performed.
- 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.

There are no wetlands or other surface waters inside the project boundaries.

• When was the water delivery system constructed?



It is unknown when the canal was initially constructed, however the water rights record (WR 13-974) indicates a priority date of 1899 and appropriates a maximum diverted flow of 186 cfs and a maximum diverted volume of 51,912 acre-ft.

• 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.

Two manual spillway structures will be replaced with automated gates, SCADA will be installed for key flume and diversion location, and VFD will be installed for the existing pumps. If the WaterSmart fund is awarded by the end of December 2024, and considering one year is demanded for the project design, review, approval and construction contractor bidding process, the proposed project may start to construct in August 2025, and be completed by August 2026.

• 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.

There are no structures located in the project area eligible for historic place registration, to the applicant's knowledge. A cultural resources evaluation will be conducted.

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

There are no known archeological sites in the proposed project area.

• Will the proposed project have a disproportionate and adverse effect on any communities with environmental justice concerns?

This project does not have an impact 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?

This project will not impact tribal lands or ceremonial Indian sacred sites.

• Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

The project will not contribute to the spread of non-native species or noxious weeds and will help reduce the spread.



# 6 - Required Permits or Approvals

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

The following permits and clearances will be acquired before construction:

- Environmental Clearance
- Cache County Land Disturbance Permit
- SWPPP
- Cache County Conditional Use Permit

An environmental clearance will be required before construction can begin. Preliminary research with the Historic Places and National Wetlands Inventory suggests that there are no apparent areas to be concerned with at this time. Land Disturbance Permit with Storm Water Pollution & Prevention Plans from Cache County are required for the project. Considering each construction site will be less than an acre and the work is currently permitted as appropriate canal operations, it is not anticipated that these permits will have major consequences with the project.



#### 7 – Overlap or Duplication of Effort Statement

Applicants should 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 should 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 West Cache Irrigation Company has previously collaborated with Reclamation on several WaterSMART grants, as detailed in the Background Section. These collaborations include the Newton Lateral Piping Project, Southfield Area Piping Project, Hansen & Ezola Piping Project, and the ongoing North and South Litz Piping Project. The proposed West Cache Irrigation System Optimization Project would complement these initiatives, as they are all branches of the main canal. Integration with the new SCADA system for their pump stations will make them an essential component of the overall system, enhancing efficiency. The information collected from the pump stations' pumps and flow meters will be invaluable to the SCADA system, ensuring that these projects support each other without any redundancy or overlap with current or expected proposals.



#### 8 – 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.

There are no actual or potential conflicts of interest at the time of submission that the West Cache Irrigation Company is aware of.

#### 8.1 – 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.

West Cache Irrigation Company agrees to maintain oversight of the contractor's performance in accordance with the terms and conditions of the contract and best practices. Additionally, West Cache Irrigation Company will remain in compliance with 2 CFR §1402.112.

#### 8.2 - 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.

If a conflict of interest arises, West Cache Irrigation Company will handle the situation appropriately and then notify the financial assistance officer in writing. With funding secured, West Cache Irrigation Company will verify that current internal contracts are adequate and will update them if needed.

#### 8.3 – 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.



West Cache Irrigation Company will not use any funding from this grant for lobbying activities. West Cache Irrigation Company does not employ a lobbyist. See completed federal form SF-LLL to see the required certifications.

#### 8.4 – 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 West Cache Irrigation Company understands the need for a review process and will readily assist as needed.



# 9 – Uniform Audit Report Statement

All U.S. states, local governments, federally recognized Indian Tribal governments, and non-profit organizations expending \$750,000 USD or more in Federal award funds in the applicant's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System. 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.

West Cache Irrigation Company was not required to submit a Single Audit report for the prior fiscal year. As such, an audit report is not available through the Federal Audit Clearinghouse website.



# 10 - 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.

West Cache Irrigation Company acknowledges and certifies the referenced lobbying statements. West Cache Irrigation Company does not employ a lobbyist. The signed SF-424 form (application for federal assistance) is attached to this grant application submittal for your records.



# 11 – SF-LLL: Disclosure of Lobbying Activities

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.

West Cache Irrigation Company will not use any funding from this grant for lobbying activities. West Cache Irrigation Company does not employ a lobbyist. The West Cache Irrigation Company has not completed any lobbying activities that would require filling out federal form SF-LLL.



#### 12 – Letters of Support

You should include any letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support 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 125-page maximum.

Letters of support for the project are attached in Appendix A. Appendix A includes Letters of Support from the following individuals or groups:

- Department of Natural Resources Division of Water Resources: Marisa Egbert
- House of Representatives: Representative Blake Moore
- Amalga Town: Mayor David Wood
- Utah State Senator: Senator Chris Wilson
- West Cache Irrigation Company: Dale Buxton, Secretary
- Cache Water District: Nathan Daugs, Manager
- Franklin County Commissioners: Boyd Burbank, Robert Swainston, Dirk Bowles



#### 13 – Official Resolution

If selected, the applicant must provide prior to award 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 before an award of funding will be made.

An official resolution meeting the criteria set forth above will be signed and submitted to the Bureau of Reclamation within the allotted 30 days permitted after the application deadline. A draft copy of the resolution has been attached in Appendix E.



#### 14 – Letter 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:

- The amount of funding commitment
- The date the funds will be available to the applicant
- Any time constraints on the availability of funds
- Any 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.

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.

Appendix A in this report includes Letters of funding commitment from the following individuals or groups:

West Cache Irrigation Company: Dale Buxton, Secretary



# 15 - Unique Entity Identifier and System for Award Management

#### Register with the System for Award Management

Each applicant (unless the applicant is an individual or Federal awarding agency that is excepted from those requirements under 2 CFR 25.110 (b) or (c), or has an exception approved by the Federal awarding agency under 2 CFR 25.110 (d)) is required to:

- Be registration in SAM before submitting an application. Instructions for registering are available at <a href="mailto:sam.gov/content/home">sam.gov/content/home</a>. The "Help" tab on the website contains User Guides and other information to assist you with registration. The <a href="mailto:Grants.gov">Grants.gov</a> "Register with <a href="mailto:SAM" page">SAM" page</a> also provides detailed instructions. You can also contact the supporting Federal Service Desk for help registering in SAM. There is no cost to register with <a href="mailto:SAM.gov">SAM.gov</a>. There are third-party vendors who will charge a fee in exchange for registering entities with SAM.gov; please be aware you can register and request help for free. Applicants that do not have an active SAM registration will not be able to submit an electronic application in Grants.gov.
- Provide a valid UEI in its application. You are required to register in SAM.gov prior to submitting a federal award application and obtain a UEI. A UEI will be assigned to entities upon registering with SAM.
- Maintain an active SAM registration with current information at all times during which it has an active Federal award or plan under consideration by a Federal award agency.
- Once registered in SAM.gov, entities must renew and revalidate their SAM.gov registration at least once every 12 months from the date previously registered.
- Entities are strongly encouraged to revalidate their registration as often as needed to ensure their information is up to date and reflects changes that may have been made to the entity's Internal Revenue Service information.

See the "Submission Requirements" section of this document below for more information on SAM.gov registration.

West Cache Irrigation Company has an active registration with SAM, with the unique entity ID (UEI) as Z3F1RVPKKDN6. West Cache Irrigation Company will maintain the proper registrations throughout the project.



# **APPENDIX A**

# Support Letters And Funding Commitment Letters





2/21/2024

Sid Munk, President West Cache Irrigation Co. 1207 South 400 East Trenton, Utah 84338

RE: Letter of Support for West Cache Irrigation Company

— System Optimization Improvements

Dear Mr. Munk:

The purposes of the Cache Water District include planning for and facilitating the long-term conservation, development, protection, distribution, management and stabilization of water rights and water supplies for domestic, irrigation, power, manufacturing, municipal, recreation and other beneficial uses, including the natural stream environment, in a cost-effective way to meet the needs of the residents and growing population of Cache County. It is our goal to help all water users in the Cache Valley area to manage, use, and conserve water in the most economical and effective way possible. This includes helping communities and irrigation companies manage their water more effectively with elements such as meters, SCADA data bases, quality distribution systems, etc.

The West Cache Irrigation Company is currently planning on optimizing the spillways found along the West Cache Canal. These structures control the water level of the canal and how much is returned to the Bear River. By replacing the manually operated log stops with a SCADA controlled mechanical structure, the rate of water spilling out of the canal can be controlled and minimized, enabling better management of the water.

Sincerely,

Nathan Daugs, Manager Cache Water District 435-999-0051





2/20/2024



# Franklin County Commissioners

Sid Munk, President
West Cache Irrigation
Company 2598 W. 5800 N.

39 West Oneida, Preston, Idaho 83263
(208) 852-1090 • Fax (208) 852-1094

Amalga, UT 84335

RE: Letter of Support for West Cache Irrigation Company System Optimization Improvements

Dear Mr. Munk:

The communities within Franklin County are largely agriculturally based, and the irrigation companies and systems of Cache Valley are the lifeblood of our communities. The goals of Franklin County are in tandem with long-term conservation, development, protection, distribution, management, and stabilization of water supplies for domestic, irrigation, manufacturing, municipal, recreation and other beneficial uses, including the natural stream environment, in a cost-effective way to meet the needs of the residents and growing population of Franklin County.

We wish to support all water users in the Cache Valley area to manage, use, and conserve water in the most economical and effective way possible. This includes helping communities and irrigation companies manage their water more effectively with elements such as meters, SCADA data bases, quality distribution systems, etc.

The Franklin County Commissioners are very supportive of the plans to improve the West Cache Canal spillways. Optimizing the headgates of the canal and the introduction of a SCADA system will enable greater conservation of water and help provide proper accounting of the water.

Best regards,

Franklin County Commissioners

Boyd Burbank – District #1

Date 2-2/24

Robert C. Swainston - District #2

Date 2/21/24

R. Dirk Bowles - District #3

Date 2/21/24

Franklin County Commissioners 39 West Oneida

BOYCEBURI AN \$3,263. #1 1448 E. Cub River Road PRESTON, IDAHO 83263

(208) 244-0639 Email: boydb@fcidaho.us ROBERT C. SWAINSTON, Dist. #2 77 E. 1600 N.

PRESTON, IDAHO 83263 (208) 852-3350, Cell (208) 339-0900 Email: roberts@fcidaho.us R. DIRK BOWLES, Dist. #3 1452 W. 5600 S. PRESTON, IDAHO 83263 (208) 852-3724, Cell (208) 221-1398 Email: dirkb@fcidaho.us Bureau of Reclamation Upper Colorado Regional Office 125 South State, Room 8100 Salt Lake City, UT 84138-1147

RE: Letter of Commitment for West Cache Irrigation Company – System Optimization Improvements

Bureau of Reclamation Application Review Committee:

The West Cache Irrigation Company is currently planning on optimizing spillway structures along the West Cache Canal by installing new headgates. In addition, a SCADA framework will be introduced to provide better analysis and management of the irrigation system. Improving the headgates will enable greater conservation of water and help provide proper accounting of the water.

West Cache Irrigation Company appreciates the opportunity to pursue grant funding under the Water and Energy Efficiency Grant FY 2024. Grant funds will play an important role in making the proposed project possible. West Cache Irrigation Company is committed to paying for all costs not covered by this funding opportunity with existing resources.

Thank you for your consideration,

Dale M. Buston

Dale Buxton, Secretary West Cache Irrigation Co. 32 W Main Street

Trenton, Utah 84338

**West Cache Irrigation Co.** 

Sid Munk, President

Company 2598 W. 5800 N. Amalga, UT 84335

RE: Letter of Support for West Cache Irrigation Company -System Optimization Improvements

Dear Mr. Draper:

As Mayor of Amalga Town, I would like to state my support for this project and the water optimization and conservation impacts it will bring to Amalga Town, its citizens, and our neighboring communities. The project includes installing new headgates at each of the eight spillway structures along the West Cache Canal. In addition, a SCADA framework will be introduced at each of the spillways. These upgrades will help to provide better analysis and simpler operation of the irrigation system. The water and energy savings from the project will benefit not just the irrigators of the West Cache Irrigation Company but also other water users in the surrounding area.

) and Word

Regards,

David Wood Mayor, Amalga Town 435-770-8097

amalga6590@gmail.com 6590 N 2400 W Amalga, UT 84335 BLAKE D. MOORE
1ST DISTRICT, UTAH

1131 LONGWORTH HOB WASHINGTON, D.C. 20515 202–225–0453

> 324 25TH STREET OGDEN, UT 84401 801-625-0107

# Congress of the United States House of Representatives

Washington, DC 20515-4401

COMMITTEES

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February 20, 2024

Camille Calimlim Touton Commissioner Bureau of Reclamation 1849 C Street NW Washington, DC 20240

Dear Commissioner Touton,

I write today in reference to the West Cache Irrigation Company's application for grant funding under the Bureau of Reclamation's WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2024 funding opportunity.

The proposed project includes installing new headgates at each of the eight spillway structures along the West Cache Canal and introducing a SCADA framework to each of the spillways. These upgrades will help provide better analysis and simpler operation of the irrigation system. As the Representative for Utah's 1<sup>st</sup> Congressional District, I understand the importance of water and energy conservation in the state of Utah and am thankful for West Cache Irrigation Company's efforts to optimize their system and conserve water and energy.

I appreciate your full and fair consideration of this important grant application.

Should you have any questions, please feel free to contact Rebekah Rodriguez, my Legislative Director, at rebekah.rodriguez@mail.house.gov.

Sincerely,

Representative Blake Moore

Member of Congress

Blake D. Moore

#### 2/20/2024

Sid Munk, President West Cache Irrigation Co. 1207 South 400 East Trenton, Utah 84338

RE: Letter of Support for West Cache Irrigation Company– System Optimization Improvements

Dear Sid Munk,

I'm writing to express my support for the proposed optimization improvements for the West Cache Irrigation Company, which includes optimizing the spillways found along the West Cache Canal. As a State Senator for Senate District 2, and an advocate for Cache Valley's natural resources, I understand the importance of projects that improve water efficiency for our community. The spillway improvements in the West Cache Irrigation Company's canals are important for increasing the water available to community members and irrigators downstream. The project addresses water needs and promotes development, helping to make Cache Valley a more attractive place to live and do business.

I wholeheartedly endorse the diversion improvements and encourage the Bureau of Reclamation application review panel to favorably consider this application.

MistAlilson

Sincerely,

Senator Chris Wilson Utah Senate District 2 350 North State, Suite 320 Salt Lake City, UT



#### Department of Natural Resources

JOEL FERRY
Executive Director

Division of Water Resources

CANDICE A. HASENYAGER Division Director

February 15, 2024

Sid Munk, President West Cache Irrigation Company 1207 South 400 East Trenton, Utah 84338

RE: Letter of Support for West Cache Irrigation Company: System Optimization Improvements

Mr. Munk:

The Utah Division of Water Resources understands that the West Cache Irrigation Company is seeking federal funds through the Bureau of Reclamation's WaterSMART grant program. The project will optimize the West Cache Canal spillways and other significant systems by installing new headgates at each of the canals. A SCADA system will also be included for each spillway. These improvements will enable greater conservation of water and help provide proper accounting of the water in the system.

The Division's mission is to plan, conserve, develop and protect Utah's water resources. Over the years, the Division has funded similar projects throughout the state. This project falls within the Division's overall objectives and could receive funding upon request.

Thank you,

Marisa Egbert, P.É.

**Project Funding Section Manager** 



# **APPENDIX E**

# Official Resolution Draft



# OFFICIAL RESOLUTION OF THE

# West Cache Irrigation Company

### Resolution No. 2024 -1

The President of the Company is Sid Munk, and he will be the legal authority on the project.

AUTHORIZING THE PRESIDENT OF THE WEST CACHE IRRIGATION COMPANY TO APPLY FOR A CONTRIBUTION GRANT FROM THE U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, FOR THE WEST CACHE IRRIGATION SYSTEM OPTIMIZATION PROJECT WHICH WILL PROVIDE A SCADA SYSTEM, UPGRADED SPILLWAYS, AND NEW METERING INSTRUMENTATION.

WHEREAS, The West Cache Irrigation Company, (the "Company") of Trenton, Utah deems it necessary to apply to the Department of the Interior, Bureau of Reclamation, for funding through a cost-sharing grant, shall not exceed (\$4,105,000 Total Project, \$1,724,100 Water SMART Grant) for design & construction to optimize the West Cache Irrigation System. The company has reviewed and supports the application submitted.

**WHEREAS,** The Company intentions are to provide the remaining funding through the company finances specified in the funding plan.

**WHEREAS**, the Company will work with Reclamation to meet environmental compliance and established deadlines for the entering into a grant or cooperative agreement.

Date:		
	Sid Munk, President	
ATTEST:		
Steven Wood, Project Manager		