WaterSMART: Drought Resiliency Projects NOFO No. R23AS00005



FY 2023

West Corinne Water Company Culinary Well and Booster Pump Project

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Technical Proposal and Evaluation Criteria

Executive Summary

Date: June 15, 2022	Applicant Name: West Corinne Water Company
City: Corinne	Applicant Category: Category A
County: Box Elder County	Project Funding Request: Funding Group II
State: Utah	Total Project cost and Request: Total: \$4,510,000 Request: \$2,000,000

Project Summary

West Corinne Water Company (WCW) Culinary Well and Booster Pump Project, located in Box Elder County, Utah, will construct and equip a new production well, booster pump station, and install a 12kW solar array. The solar array will be located at the booster pump station to provide 17,386kWh per year to help offset energy demands. This project will build long-term resilience to drought by providing an additional water source to supply 1,129 acre-feet of water and pumped into the existing 1million-gallon tank and into a new 2-million-gallon tank that WCW is building on their own in 2022-2023. WCW serves over 780 connections spread over 43.5 square miles of unincorporated areas of Box Elder County, a rural county. Their connections include 61 Class B agriculture users, seven dairies, and a Walmart Distribution Center which collective uses 54 percent of WCW's water supply. WCW's only spring, Baker Springs, has decreased production from 1,090 acre-feet to 422 acre-feet. This is a 61 percent reduction in supply even after extensive spring rehabilitation in 2020. The total production of all WCW sources has dropped from 1,178 acre-feet to 890 acre-feet from 2017 to 2021. This is a 25 percent decrease in total source water for WCW. This project is listed as a mitigation measure to build drought resilience in WCW's Drought Resiliency Plan (DRP). The new well and booster station will build resilience in their service area and within the water basin as it reduces the need to receive water from others during dry years.

State the length of time and estimated completion date for the proposed project including the construction start date (*mm/yr*) (if applicable) Note: proposed projects should not have an estimated construction start date that is prior to March 2023.

Construction should begin in November 2023 and take 24 months to complete, with a completion date of November 2025.

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

Project Location

WCW's new culinary well and booster pump project is located in northern Utah in a mountainous area of rural Box Elder County. WCW's service area is 43.5 square miles and extends from just south of Tremonton, Utah, to the bird refuge just west of Brigham City, Utah. The project latitude is {41°42.33'N} and longitude is {112°18.7'W}. See Attachment A Project Location Map and Attachment B Detailed Project Map.

Technical Project Description

The project includes drilling a new well to approximately 400 feet below the ground surface with a 26inch conductor casing, a 16-inch diameter casing, and screen. It will be grout sealed, gravel packed, and the well will be equipped with a high-efficiency pump and motor. The new well will replace an abandoned well owned by WCW, which has never been used due to structural problems. WCW has existing water rights that already include a point of diversion at the location of the new well. The project includes constructing a well house to enclose the motor, mechanical piping, flow meter, and chlorination and control equipment. In addition, the project consists of the installation of monitoring and SCADA equipment at the well site and approximately 4,100 LF of 10-inch AWWA C900 PVC pipe from the new well to the existing storage tanks. Finally, the project will build a new booster pump station with two duty pumps and one standby pump with a total station capacity of 2,000 gallons per minute to pump water from the Bothwell tank to the Little Mountain Tank 17 miles away to help serve the southern portion of WCW's service area. The new booster pump station will replace an undersized booster station to handle the current and new well's flows. At the booster pump station, WCW will install a 12kW Solar array consisting of thirty-six 340-watt solar panels with the ability to add on additional panels in the future. The proposed solar array will provide approximately 17,386kWh per year that will be used to offset energy demands.

WCW's system covers over 43.5 square miles in a mountainous area with two water sources at opposite sides of the distribution system that are around 17 miles apart. WCW owns two water sources, Baker Spring, and the Anderson Well. WCW contracted with Bear River Water Conservancy District to initially supply 200 acre-feet to the system. Over the next ten years, that amount will increase to 350 acre-feet. WCW has connections to neighboring communities – Tremonton and Brigham City – used for emergency water needs.

WCW is currently unable to meet the existing peak days demands for the water system due to the reduction of water production in Baker Springs. The proposed well will allow WCW to meet the current peak day demands and provide redundancy if the Baker Springs flow continues to decrease due to the drought. The proposed booster pump station will allow WCW to move the water from both the new well and the Anderson Well to the Little Mountain Tank.

The proposed booster pump station will be able to pump 2,000 gpm from the Bothwell Tank to the Little Mountain Tank. The existing booster pump station is undersized and will not be able to meet demands and be able to fill the Little Mountain tank. The new booster pump station is the only way for the Little Mountain Tank to be filled and allow the system needs to be met. Without this booster, the system would be unable to fill the Little Mountain Tank completely. If the Little Mountain Tank is



Figure 1 Baker Springs Production History

unable to fill completely, over half of the system – 400 connections – would be unable to receive water

from WCW. The proposed booster is designed to have redundancy and emergency power backup to allow a continual flow to the Little Mountain Tank.

As previously stated, Baker Springs has decreased production from 1,090 acre-feet to 422 acre-feet. This is a 61 percent reduction in supply even after extensive spring rehabilitation in 2020. Spring production volumes for this year through May are less than 36 percent of what was observed during the same 5month period in 2017. See Figure 1 Baker **Springs Production**

Baker Spring's Average Volume (ac-ft)									
YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022
JANUARY	27	24	24	45	66	48	75	43	28
FEBUARY	26	21	24	101	56	43	62	37	24
MARCH	31	22	37	96	61	87	75	42	25
APRIL	29	21	38	98	59	117	74	39	24
MAY	31	37	44	105	60	112	68	39	23
JUNE	29	46	44	104	54	108	69	35	-
JULY	29	35	42	109	48	106	67	34	-
AUGUST	29	30	42	102	46	104	58	33	-
SEPTEMBER	27	28	41	93	43	97	53	31	-
OCTOBER	27	27	39	88	41	86	51	32	-
NOVEMBER	25	25	35	76	39	72	46	29	-
DECEMBER	25	25	39	72	37	75	45	28	-
Yearly Total									
(acre-feet)	334	341	448	1,090	611	1,056	743	422	124

Figure 2 Baker Springs Average Volume

History and Figure 2 Baker Springs Average Volume. The total output of all WCW sources has dropped from 1,178 acre-feet to 890 acre-feet from 2017 to 2021. This drop in production is a 25 percent decrease in total source water for WCW.

Over the past five years, WCW has had to rely on agreements with Bear River Water Conservancy District (BRWCD) for additional water to help them deliver culinary water to its customers. However, extreme drought conditions have reduced water supplies throughout the entire water district, making it difficult for BRWCD to provide WCW with additional water supply.

Performance Measures

Performance measure for quantifying the benefits.

The benefits of implementing this new well will be quantified in terms of added water supply delivered during dry summer periods and energy produced to offset energy needs. This will be accomplished by recording the volumes pumped by each well on a yearly basis to compare production. This data will be provided as WCW actively monitors well water levels at each of its well locations through well level monitors and SCADA. The proposed work will include installing monitoring and SCADA equipment at the well site, which will then be documented and evaluated to track water levels and production.

The energy produced from the solar array will be documented and evaluated to measure the energy produced, used, and energy cost saving. WCW will analyze how future solar panels can impact energy needs and cost savings.

Evaluation Criteria

E.1.1. Evaluation Criterion A – Project Benefits

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

Self-Sufficient Water System: West Corinne has recently connected to Bear River Water Conservancy District to supplement flows into their system. The existing sources are struggling to keep up with the peak demands on the system. Baker Springs has decreased from 1,090 acre-feet of supply in 2017 to 422 acre-feet in 2021. This is a 61 percent reduction in source from Baker Springs in just four years, and Baker Springs is on track to be significantly lower in 2022.

Additional Water Sources: This project will build long-term resilience to drought by providing an additional source of West Corinne Water-owned culinary water.

Will the project make additional water supplies available?

If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, provide the average benefit over ten years including dry years).

Yes, this project has the ability to supply an estimated 1,129 acre-feet per year to the water system. This was calculated by the following:

(700 gallons/min x 60 min/hour x 24 hour/day x 365 day/year \div 7.48 gallons/cubic foot \div 43,560 square feet/acre = 1,129 acre-feet)

Over ten years, this represents 11,290 acre-feet.

• What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?

100 percent of the 1,129 acre-feet developed under this application will be better managed because the new source will be owned by WCW and will not be subject to outside entity control. Also, historical records show that the Anderson Well is a more consistent source than Baker Springs.

• *Provide a qualitative description of the degree/significance of the benefits associated with the additional water supplies.*

WCW is currently **unable** to meet the existing peak day demands for the water system. The proposed well will allow WCW to meet the existing peak day demands and provide redundancy if the Baker Springs flow continues to decrease due to the drought. The proposed booster pump station will allow WCW to move water from both the Anderson Well and the proposed well to the Bothwell tank. The new booster pump station will be able to pump 2,000 gpm from the Bothwell Tank to the Little Mountain Tank. This booster pump station is the only way for the Little Mountain Tank to be filled because the existing booster pump station cannot meet existing or future demands and still fill the Little Mountain Tank. If the Little Mountain Tank is unable to fill over half – 400 residential, industrial, and agriculture connections – the service area would be unable to receive water from WCW. The proposed booster is designed to have redundancy and emergency power backup to prevent this from happening.

Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)?

If so how will the project increase efficiency or operational flexibility?

The new well will increase operational flexibility by creating a new source of supply that West Corinne Water will own and control. This project will significantly improve West Corinne's ability to meet current obligations to its water users while becoming more resilient to climate change and the effects of drought. West Corinne Water's sources are not keeping up with the system's peak day demands, and the new well will help overcome the current deficiency. With Utah's Megadrought, West Corinne Water needs to use all the water they have to increase resiliency to climate change and drought.

- What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, provide the average benefit over ten years including dry years). The estimated quantity of water better managed is 1,129 acre-feet per year, calculated from the well capacity of 700 gallons/minute operating for a year. The water produced from the new well will be able to serve the entire WCW service area.
- What percentage of the total water supply does the water better managed represent? How was this estimate calculated?

One hundred percent of the 1,129 acre-feet developed under this application will be better managed because the new source will be owned by WCW and will not be subject to outside entity control. Also, historical records show that the Anderson Well is a more consistent source than Baker Springs. We anticipate that the new well will produce similar to the Anderson Well because it is located adjacent to the Anderson Well.

- Provide a qualitative description of the degree/significance of anticipated water management benefits.
 The additional water provided by the new well will be available to the entire service area. The same can be said of the water being pumped by the new booster station to the Little Mountain tank.
- Will the project make new information available to water managers? If so, what is that information and how will it improve water management?

Yes, WCW has been unable to actively monitor well water levels at its well. A water level monitor and SCADA will be installed at the new well. The same equipment is currently at the Anderson Well. Water level/use data from this monitoring equipment will be provided to WCW managers to understand how climate change, drought, and water use affect their water sources and ensure reliable water levels for effective and efficient water delivery to the users. This data will allow WCW to plan for additional water source needs and determine better ways to deliver their water.

If the proposed project includes any of the following components, applicants need to provide the additional information requested below for the specific project type. **Wells**

What is the estimated capacity of the new well(s), and how was the estimate calculated?

The new well has an estimated capacity of 700 gallons per minute. This is the same flowrate for which WCW's existing well, the Anderson Well, is equipped and is a flow rate demonstrated to be sustainable for the aquifer.

- How much water do you plan to extract through the well(s), and how does this fit within state or local laws, ordinances, or other groundwater governance structures applicable to the area?
 The proposed well is anticipated to produce 700 gpm. The current groundwater appropriation policy for the local area allows for the proposed project's development. A point of diversion for the proposed well site exists under WCW's existing water rights.
- Will the well be used as a primary supply or supplemental supply when there is a lack of surface supplies? The proposed well will be used as a primary source of water. "The existing WCW supply comes from a variety of sources. These include Baker Springs from a surface source, the Anderson Well, a groundwater supply, and contracted BRWCD water."
- Does the applicant participate in an active recharge program contributing to groundwater sustainability? N/A.
- Please provide information documenting that proposed well(s) will not adversely impact the aquifer it/they are pumping from (overdraft or land subsidence.

In the 1990s, WCW purchased two water wells. The first well is named the Anderson Well, and the second well is approximately 3,200 feet away from the Anderson Well. The question arose as to

whether pumping one well would interfere with the water level in the second well. WCW decided to answer this question before purchasing the wells and commissioned a pump test during which the Anderson Well was pumped for 72 hours. The groundwater level in the Anderson Well and three observation wells were recorded. The three observation wells are located at approximate radial distances between 1,600 and 4,700 feet. The results indicated that the water level in the three observation wells did not decline. The only changes observed were slight increases in the static water levels during pumping, less than one foot, likely due to barometric pressure changes during the test. See Attachment C Test Results Memo.

• Please describe the groundwater monitoring plan that will be undertaken and the associated monitoring triggers for mitigation actions.

WCW will install level sensors and SCADA to monitor the water level at the proposed well. WCW also monitors the connection to BRWCD and Baker Springs. Springs records and well-pumping logs are reported to the Division of Water Rights. Withdrawals from water sources are also documented and reported to the Division of Water Rights' Water Use Program.

If required in whole or in part, mitigation can be made with some of the additional water produced or by purchasing adjacent water rights or shares. An equivalent amount of "depletion water" would be provided as ordered by the State Engineer or a competent court of law. Thus, mitigation would only be made by order of the State Engineer, a competent judge, or as agreed upon by the District and affected parties.

• Describe how the mitigation actions will respond to or help avoid any significant adverse impacts to third parties that occur due to groundwater pumping.

The groundwater monitoring creates a record from the time monitoring begins. The data collected is valuable for displaying groundwater under varying circumstances and water use conditions. It has been found that these data points are beneficial to the State Engineer when impairment is alleged by those who don't keep their own monitoring records. It allows the State Engineer to regulate the water resources more appropriately and establish baseline conditions as well as withdrawal limitations. In essence, it takes a lot of the guesswork out of managing the resource for the State Engineer.

E.1.2. Evaluation Criterion B – Drought Planning and Preparedness

Provide a link to the applicable drought plan, and only attach relevant sections of the plan that are referenced in the application, as an appendix to your application. These pages will be included in the total page count for the application. See Attachment D Drought Resiliency Plan.

Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to prepare for and address drought will receive more points under this criterion.

 Does the drought plan contain drought focused elements including a system for drought monitoring, sector vulnerability assessments related to drought, prioritized mitigation actions, and response actions that correlate to different stages of drought?

Yes. It addresses the vulnerability, risks, and mitigation objectives. It uses the objectives to prioritize mitigation projects and other actions like education and landscape water-saving tools to help address the vulnerabilities and risks.

• *Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process?*

The drought plan was developed along with the Water Master Plan. Within that planning process, WCW included stakeholders and other water providers – BRWCD, Bear River Canal Company, Box Elder County, and dairy farmers within their service area.

- Does the drought plan include consideration of climate change impacts to water resources or drought? The plan addresses reduced future Figure 3 Potential Mitigation Actions
 - The plan addresses reduced future snowpack and lack of fire flow and protection throughout the DRP.

Potential mitigation actions were evaluated based on objectives – see Figure 3 Potential Mitigation Actions – to determine which measures would best address the identified vulnerabilities.

The actions were then scored according to how well they met the objectives, as identified by the metrics.

The estimated costs to complete the actions were not part of the evaluation. See Attachment D Drought Resiliency Plan, page 6.

		Objectives					
		Improve					
		drought					
		reliability	Improve public		Provide		
		through	awareness and	Improve	adequate		
		system	overall	storage	water to fight		
		improvemente	concornation	conocity	firer		
		mprovements	Metric	capacity	ines		
			methe	Additional	Increased		
		Increased level	Additional water	Addreona	lovel of fire		
		of cystom	conconved (agree	million	fahting		
		of system	fact (ware)	(11111011	inginung	Delinte	
		High	High	gailons)	High	2	
		Medium	Medium	Medium	Medium	2	
	Capital cost	Low	Low	Low	Low	1	
Drought Mitigation Action	(\$)	None	None	None	None	0	
Master Plan Projects							
Develop new Bothwell Well	\$2,782,000.00	3	1	2	3	9	
Increase Bothwell Booster Pump Station Capacity	\$1,172,000.00	3	1	1	3	8	
New Little Mountain 2,000,000 Gallon Water Tank	\$4,961,500.00	3	1	3	3	10	
Bothwell Tank 16" Transmission Line	\$9,999,700.00	3	1	1	3	8	
Little Mountain 12" Transmission Line	\$3,869,600.00	3	1	1	3	8	
Other Potential Projects	Needs more investigation on cost (\$)						
Install backup power sources at SCADA facilities and Expand security system by installing cameras and other means.	x	3	0	2	1	6	
Secondary water system expansion and metering.	x	3	2	3	0	8	
Create a public education campaign to educate users on water conservation. Prepare a water rate study for drought tier fees and implement the rates.	х	3	3	0	0	6	

Describe how your proposed drought resiliency project is supported by an existing drought plan.

 Does the drought plan identify the proposed project as a potential mitigation or response action? This project is listed as a mitigation action.

- Does the proposed project implement a goal or need identified in the drought plan?
 Yes, it addresses the need for an additional source and increased firefighting capacity.
- Describe how the proposed project is prioritized in the referenced drought plan?

They are listed as number two and three in the project priorities to address drought, with the 2million-gallon tank at Little Mountain as number one. WCW is building the new 2-million-gallon tank in 2022/2023 with a loan they requested from the Utah Division of Water Resources. See Attachment D Drought Resiliency Plan, page 6.

E.1.3. Evaluation Criterion C – Sustainability and Supplemental Benefits

1. *Climate Change:* How proposed projects may contribute to climate change adaptation and resiliency, may include but are not limited to the following:

• In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?

Climate change has had a severe impact on WCW's service area and all of Box Elder County, which it serves. Reduced rainfall and snowpack directly result from climate change, resulting in the extreme to exceptional drought conditions for WCW's service area that have further limited the supply of culinary water. This project will provide water for fire suppression by providing enough water for peak-day demands.

Does the proposed project include green or sustainable infrastructure to improve community climate resilience such as, but not limited to, reducing the urban heat island effect, lowering building energy demands, or reducing the energy needed to manage water? Does this infrastructure complement other green solutions being implemented throughout the region or watershed?

This project will help offset energy demands as they install and plan for a future solar array to produce energy at the booster pump station. The project will install a 12kW Solar array consisting

of thirty-six 340-watt solar panels at the booster pump station. The proposed solar array will provide approximately 17,386kWh per year that will be used to offset energy demands with the ability to add solar panels in the future.

- Will the proposed project establish and use a renewable energy source? Yes. A 12kW Solar array consisting of thirty-six 340-watt solar panels at the booster pump station will produce 17,386kWh per year.
- Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution? Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation?

It is estimated that the proposed solar project will offset approximately 27,000 pounds of CO2 per year, reducing BWD's carbon footprint by an equivalent of:



Emissions from point sources are more abundant in Northern Utah. When air sits stagnant, this becomes a source of pollution with significant health impacts – respiratory ailments like temporary pneumonia or asthma. The power generated and not being used by WCW will help reduce the need to use more fossil fuels to meet the demands of their pumping system.

• Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?

This project will help to protect water supplies in the Bear River region as it will allow WCW to reduce the need to contract for more and more water from BRWCD every year; allowing BRWCD to use their water in their service area and not requiring them to call on more surface water out of Bear Lake or the Bear River.

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

2. Disadvantaged or Underserved Communities:

Please describe in detail how the community is disadvantaged or underserved based on a combination of variables that may include the following:

WCW is located in Box Elder County, a rural county with a very high housing cost burden and substandard housing, based on the 2020 US Census data.

Nearly one in five renters in Utah spends at least half of their income on housing. The 2020 statistics from the US Census Bureau show that the disparity between the annual incomes of owner-occupied

housing and renter-occupied housing is significant. Box Elder County shows that owner-occupied households have a median annual income of \$82,861, while renter-occupied households have a median annual income of \$48,019. This means that those who rent make 42 percent less than those that own their homes. The Box Elder County Moderate-Income Housing Report projects that the percentage will widen. The report states there is a disparity between wages and housing costs. Median gross rent increased 41.5 percent from 2007 to 2016, while median home values only rose by 21 percent during the same period.

Box Elder County has a large percentage of residents aged 65 and older, and that percentage has been increasing since 1990 by 17 percent per year. With many seniors on fixed incomes, the increased housing costs have put a heavier burden on this vulnerable population.

Many new single-family residential homes are being built in Box Elder County. This reduces the number of affordable housing options for residents with lower annual incomes and pushes them further into poverty as they are forced to pay higher rental rates. The possibility of investing in home ownership pulls further away for these residents. Without funding assistance for this project, the costs for these improvements will be passed on to the property owners at 100 percent to help pay back the loans. Those who own their homes are more likely to adjust to higher bills, but higher bills are more difficult to accommodate for those with lower incomes in rental units.



3. Tribal Benefits:

No Tribal Benefits.

4. Environmental Benefits: No Environmental Benefits.

- 5. Other Benefits: Will the project address water sustainability in other ways not described above? For example:
- Will the project assist States and water users in complying with interstate compacts? N/A.

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

WCW has a unique system because they supply water to 61 Class B agriculture users that use the culinary water for mint production and to water up to 500 head of cattle year-round, and seven dairies to feed, wash down cows, and clean their milking systems. They also provide water for the Walmart Distribution Center, a sizeable industrial water user. WCW provides 54 percent of its water supplies to agriculture users, dairies, and Walmart. WCW has struggled to meet the residential, agricultural, and industrial demands, especially during the past years of drought. If this project is not implemented, WCW would have to reduce the water provided to the agriculture users and dairy farms to meet residential and industrial demands.

• Will the project benefit a larger initiative to address sustainability of water supplies?

This project will help to protect water supplies in the Bear River region. It will allow WCW to reduce the need to contract for more water from BRWCD every year, allowing BRWCD to use their water for their service area and not requiring them to call on more surface water out of Bear Lake, Bear River Canal Company, or the Bear River.

E.1.4. Evaluation Criterion D – Severity of Actual or Potential Drought Impacts to be Addressed by the project

Whether there are public health concerns or social concerns associated with current or potential drought conditions (e.g., water quality concerns including past or potential violations of drinking water standards, increased risk of wildfire, or past or potential shortages of drinking water supplies? Does the community have another water source available to them if their water service is interrupted?).

The new well and booster pump are essential to ensure continued public health and safety, economic viability for the 61 Class B agriculture users, seven dairies and the Walmart Distribution Center, and the overall economy. The agriculture users, dairies, and Walmart Distribution Center employ over 250 people. With the Baker Springs production dropping, WCW would have to cut water delivery to all its users. WCW's service area is predominantly an unincorporated area with little to no other culinary water access. With the drought, the impending loss of culinary water supplies, and shrinking Spring production, WCW is in crisis. They have put a moratorium on all new developments and are seriously considering more extensive restrictions on outdoor water use.

As previously stated, Baker Springs has produced less than 36 percent over the past five months of what was observed during the same five-month period in 2017. Without this new well, WCW's culinary water consumers will be in a world of hurt. All components of this project will help make up for the loss in the Spring and help WCW prepare for ongoing and potential drought impacts.

- Whether there are ongoing or potential environmental impacts (e.g., impacts to endangered, threatened or candidate species or habitat).
 N/A.
- Whether there are local or economic losses associated with current drought conditions that are ongoing, occurred in the past, or could occur in the future (e.g., business, agriculture, reduced real estate values).
 Utah's breadbasket, Box Elder County, is a \$37 million agricultural industry that is feeling the effects of the drought, with Box Elder farmers having to reduce water allotments. The last few years of drought have dried up Utah's southern farmlands, and livestock herds shriveled urban lawns and gardens and shrunk the Great Salt Lake to the point that Antelope Island isn't an island. It is estimated that Box Elder farmers will be cut by 40 percent of their usual water allotment this year. Last year, farmers had to cut back and fallow some land, and ranchers had to reduce their herds.

Box Elder County is the state's leading producer of total grain production, including wheat, barley, oats, and corn, with their neighbor, Cache County, being second. Box Elder is also a state leader in the number of acres planted for wheat, barley, and oats. It produces 59 percent of the state's winter wheat crop; this adds up to \$37 million a year for about 1,000 farms.

Larry Lewis, a spokesman for the Utah State Department of Agriculture, said, "Revenues for the state's agriculture industry as a whole are down \$250 million in 2021. Farmers who haven't gone out of business are going into debt to keep going."

The Bear River Migratory Bird Refuge is also in trouble. Refuge director Al Trout said, "the refuge has rights to water in the Bear River, but others have older rights, and 'there's no such thing as a Christian in the world of water rights."

That means people with earlier rights will likely get it all. Typically, there is a "return flow" water that runs off of farmers' lands after irrigating that goes back to the river. Still, this has been reduced over the past few years as farmers are trying very hard to minimize runoff to save their crops—leaving the Refuge with very little water.

Whether there are other drought-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict).

West Corinne Water Company provides culinary water for drinking and outdoor watering, agriculture, and industrial use. They had to restrict outdoor water last year and will again this year. This causes contention and conflict between users because neighbors think others are using too much water on their lawns or overusing it on farms and dairies. Complaints happened, and conflict

occurred. Last year, WCW did not monitor or penalize people unless it was an excessive use. This year, WCW is developing Drought Water Rates. These rates will be implemented and there will be considerably higher fees for those who use large amounts of water on their lawns.

Describe existing or potential drought conditions in the project area.

Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Please describe existing or recent drought conditions, including when and the period of time that the area has experienced drought conditions (please provide supporting documentation, [e.g., Drought Monitor, droughtmonitor.unl.edu]).

Box Elder County is in extreme drought as of May 24, 2022, according to the U.S Drought Monitor. Figure 5 is from the NIDIS Drought.gov.



Figure 5 Box Elder County Drought Conditions 2022

 Describe any projected increases to the severity or duration of drought in the project area resulting from changes to water supply availability and climate change. Provide support for your response (e.g., reference a recent climate informed analysis, if available).

Drought continues to stress the state's natural resources impacting wildlife, rangeland, recreation, and the state's reservoir storage. According to the U.S. Drought Monitor, 99 percent of the state is in the second and third-worst categories: severe and extreme drought. Utah's reservoir levels are 10 percent lower than they were last year. The Utah Department of Natural Resources publishes a monthly Drought Update, and the following information was from their May 5, 2022 Update:

- Statewide snow water equivalent (SWE), or how much water would be in the snowpack if it melted, peaked at 12 inches. This is 75 percent of our water year's typical median peak of 16 inches.
- Twenty-two of Utah's largest 45 reservoirs are below 55 percent of available capacity, and overall statewide storage is 60 percent of capacity. This time last year, reservoirs were about 67 percent of capacity, and the snowpack was 25 percent below average and did not refill our reservoirs.
- Of the 96 measured streams, 56 are flowing below normal despite spring runoff, and five streams are flowing at record low conditions. Due to low snowpack, streamflows are expected to be lower than normal, which means reservoirs won't fill as they normally would.
- Current drought conditions have created drier fuels, increasing the chance of a wildfires starting. To date, 97 wildfires in the state of Utah have burned approximately 256 acres. Out of the 97 wildfires this year, 88 have been human caused.
- Wildlife impacts are happening after several years of drought and are still facing ongoing extreme drought conditions statewide, which significantly impact deer survival rates. Utah Division of Wildlife Resources recommended decreasing deer hunting permits for the 2022 season.

E.1.5. Evaluation Criterion E – Project Implementation

Describe the implementation plan of the proposed project. Please 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: design, environmental and cultural resources compliance, permitting, construction/installation.

WCW has a completed Water Master Plan and a Drought Resiliency Plan. They have modeled the system and projected the amount of solar power they could generate with this project. Thirty percent design is completed, and WCW has obtained the property and easements and is in negotiation for additional easements to enhance the pipeline's alignment from the well to the tank.

Milestones and Schedule:

Planning: Master Plan and Modeling. May 2021 – March 2022. Completed, waiting on Final Approval from the June 13, 2022 Board meeting, and Preliminary Evaluation Report (PER) for Utah Division of Drinking Water (DDW) has been started and will be submitted by June 30, 2022

Property Easements and Design: Over 30 percent of the design has been developed to guide purchasing the property and obtaining easements. January – May 2022. *Additional easements are being negotiated from March 2022 to the present (expect this to be completed by July 2022)*

Funding Agreement: Estimated January/February 2023

Environmental: Kick-off NEPA January/February 2023 and FONSI issued September 2023

Final Design: Design Complete September 2023

Bidding: Project Bidding October 2023

Construction: Drill Well and Equip the Well and Piping to the Tank, November 2023 – July 2024; Booster Pump Station, July 2024 – March 2025; SCADA Setup, March – May 2025; Solar Array, May – June 2025; Construction Closeout, June – November 2025.

Describe any permits that will be required, along with the process for obtaining such permits. For the well and waterline:

- The Preliminary Evaluation Report from the Utah Division of Drinking Water has been started and will be submitted by June 30, 2022.
- Well drilling plan has been started and will require approval from the Utah Division of Water Rights (DDW) after the design is complete but before construction starts.
- Well equipping plan approval from DDW will be required after the design is complete but before construction starts.
- Building permit from Box Elder County obtained by the contractor.

For the pump station:

- Plan approval from DDW will be required after the design is complete but before construction starts.
- Building permit from Box Elder County obtained by the contractor.

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

Thirty percent design was completed for the Preliminary Evaluation Report from the Utah Division of Drinking Water and property and easement purchase.

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

WCW has raised water rates to pay for a loan they have to apply for from the Board of Water Resources to fund building the new 2-million-gallon water tank and for funding to match this grant request.

E.1.6. Evaluation Criterion F – Nexus to Reclamation

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

- Does the applicant have a water service, repayment, or O&M contract with Reclamation? No.
- 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.

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

WCW provides water to 61 agriculture users and seven dairies. Without this project, these users would have to go to Bear River Canal Company (BRCC) for water. Many in WCW's large service area receive BRCC water, and BRCC receives water through Cutler Reservoir. Cutler Reservoir belongs to PacifiCorp, which has senior rights to the flows stored in Hyrum Reservoir, a Reclamation Project. This project will reduce the need to draw additional water from Hyrum Reservoir to provide water to the 61 Claas B agriculture users and seven dairies.

 Is the applicant a Tribe? No.

Project Budget

Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.

WCW's non-Federal share of project costs will come from their impact fees and depreciation savings account and will be supplemented with a loan request from the Division of Water Resources (DWRe). WCW has made an application, and their project will be reviewed at the August 2022 DWRe Board meeting with an expected award at their December 2022 meeting.

Please identify the sources of the non-Federal cost share contribution for the project, including:

Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments).

WCW will use funds from their impact fees and depreciation savings account and obtain a loan from DWRe.

- Any costs that will be contributed by the applicant.
 WCW is required to bring 15 percent of the loan requested from DWRe, which amounts to \$375,300.
- Any third-party in-kind costs (i.e., goods and services provided by a third party).
 N/A.
- Any cash requested or received from other non-Federal entities. N/A.
- Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied.
 As stated above, WCW will use its impact fees and depreciation savings account and request a

As stated above, WCW will use its impact fees and depreciation savings account and request a loan from DWRe. The DWRe funds nearly 100 percent of the loans requested from them.

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

- The project expenditure and amount. N/A.
- The date of cost incurrence. N/A.
- How the expenditure benefits the project.
 N/A.

Budget Proposal

Table 1 – Total Project Cost Summary

Source	Amount
Costs to be reimbursed with the requested Federal funding	\$2,000,000
Costs to be paid by the applicant	\$2,510,000
Value of third-party contributions	\$0.00
Total Project Cost	\$4,510,000

Table 2 – Non-Federal and Federal Funding Sources Summary

Funding Sources	Amount
Non-Federal Entities	
1. WCW	\$375,300
2. DWRe (Loan)	\$2,134,700
Non-Federal Subtotal	\$2,510,000
Requested Reclamation Funding	\$2,000,000

Table 3 – Budget Proposal

Budget Item Description	Computation		Quantity	Total
	\$/Unit	Quantity	Туре	Cost
Salaries and Wages				\$0.00
Fringe Benefits				\$0.00
Travel				\$0.00
Equipment				\$0.00
Supplies and Materials				\$0.00
Contractual/Construction			-	\$4,510,000
Engineering and Design				\$600,274
Engineering	\$300,138/ 8%	1	EA	\$300,137
Construction Administration	\$300,138/ 8%	1	EA	\$300,137
Construction				\$3,759,726
Mobilization	\$277,906	1	EA	\$277,906
Drill 400 ft well with 16"	\$1,950	400	LF	\$780,000
well casing and screen				
CMU well house, 700 gpm capacity, with standby generator, chlorination and SCADA equipment	\$2,015	468	SF	\$943,020
10" C900 PVC waterline	\$110	4,200	LF	\$462,000
Furnish, place, and compact pipe foundation material	\$25	300	TON	\$7,500
Furnish, place, and compact pipe bedding material	\$21	300	TON	\$6,300
Furnish, place, and compact backfill material	\$25	3,600	TON	\$90,000
12kW Solar Array	\$53,000	1	EA	\$53,000
CMU booster station, 2,000 gpm capacity, three	\$1,900	600	SF	\$1,140,000

pumps/motors, with standby generator, and SCADA equipment				
Other				\$150,000
Other	\$150,000/4%	1	EA	\$150,000
Тс	\$0.00			
Indirect Costs				\$0.00
Type of rate	Percentage	\$base		\$0.00
Total Est	\$4,510,000			

Budget Narrative

Salaries and Wages

No WCW staff salaries or wages will be included; all services will be contracted. WCW's staff time will be over and above the project's cost.

Fringe Benefits

No fringe benefits will be required.

Travel

No travel will be necessary.

Equipment

Equipment will be part of the contracted portion of the project.

Materials and Supplies

Materials and Supplies will be part of the contracted portion of the project and documented as required.

Contractual

To determine unit costs included in the cost estimate for this project, WCW relied upon their Drought Resiliency Plan. Contract unit prices from similar projects recently completed were used by an engineering firm to estimate those costs. WCW will follow its procurement policy and bid out the construction portion of the project to several prequalified construction companies. The contractual costs shown are estimates for each component to design and build WCW's Culinary Water Well and Booster Pump project and other items. Generally, the low bidder will be selected based on a determination of acceptable qualifications.

Third-Party In-Kind Contributions

N/A.

Environmental and Regulatory Compliance Costs

The total environmental review cost is 4% of the total cost at \$150,000. Reclamation indicated that a 4% on this type of project should be enough if Environmental Assessment is required. However, it may be possible to do a Categorical Exclusion for this project which would be at a lesser cost.

Other Expenses

The Environmental cost is listed in this section of the budget.

Indirect Costs

No indirect costs are included.

Total Costs

Applicant: \$2,510,000

Reclamation: \$2,000,000

Total: \$4,510,000

Environmental and Cultural Resources Compliance

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.

Impacts will be those associated with constructing and equipping the proposed well and booster pump station. In the past, similar projects have had minimal impacts. The surface vegetation will be restored upon completion of the project.

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? WCW is unaware of any impacts concerning threatened or endangered species in this area.

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. WCW is not aware of any wetlands in the area.

When was the water delivery system constructed? WCW's culinary water system was built in 1955.

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. N/A.

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.

A cultural resource inventory will be completed as part of the submitted environmental document(s).

Are there any known archeological sites in the proposed project area? WCW is not aware of any impacts to or locations of archeological sites.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations? N/A.

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

N/A.

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?

N/A.

Required Permits and Approvals

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

For the well and waterline:

- The Preliminary Evaluation Report from the Utah Division of Drinking Water has been started and will be submitted by June 30, 2022.
- Well drilling plan has been started and will require approval from the Utah Division of Water Rights (DDW) after the design is complete but before construction starts.
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Existing Drought Contingency Plan

See Attachment D Drought Resiliency Plan.

Letters of Project Support and Letters of Partnership

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

Letters of Project Support have been included from the following, found in Attachment E Letters of Support.

- Bear River Water Conservancy District

Official Resolution

The Official Resolution for WCW's Culinary Well and Booster Pump project will be submitted within 30 days after the application deadline.

Overlap or Duplication of Efforts Statement

WCW has no other federal funding considerations for this project or any other project this year.

Conflicts of Interest Disclosure

WCW has no actual or potential conflict of interest at the time of submission.

Uniform Auditing Reporting Statement

WCW has not previously received federal funds and has not expended any federal funds last year. Therefore, they were not required to submit a Single Audit report for the most recently closed fiscal year.

Certification Regarding Lobbying

WCW does not retain a lobbyist. They will be self-certifying with the GG – Certification for Lobbying form.



WEST CORINNE WATER PROJECT LOCATION

WaterSMART: Drought Resiliency Project Grant



June 2022



WaterSMART: Drought Resiliency Project Grant

June 2022



Bear River Water Conservancy District 102 West Forest Street Brigham City, UT 84302 435-723-7034

BOARD OF TRUSTEES

ROGER FRIDAL CHAIRMAN DAVID FORSGREN VICE CHAIRMAN CHARLES HOLMGREN FINANCIAL CHAIRMAN

June 7, 2022

Steve Norman, President West Corinne Water Company 4050 West Hwy 13 Po Box 37 Corinne, UT 84037

Dear Mr .Norman,

Bear River Water Conservancy District (BRWCD) is pleased to write in support of the West Corinne Water Company (WCWC) grant application being submitted to The Bureau of Reclamation for a WaterSMART: Drought Resiliency Projects Grant. We appreciate your efforts to increase your system's resilience to the impacts of the ongoing drought by increasing water supply and storage capacity while also improving your operational flexibility and overall water management. It is my understanding that WCWC is undertaking a great effort to meet immediate and future water needs in your vast service area.

BRWCD recognizes the importance of drought resiliency within our often water-short basin. The water saved through these improvements will benefit water users and the regional environment and will create a more drought resilient water delivery system that helps provide security to water rights and sources. BRWCD appreciates your leadership and example of a proactive water supplier serving a large area in Box Elder County.

We strongly support your grant application and appreciate the advancements it will make in water savings and improving water efficiencies in the area.

Sincerely,

Carl W. Mackley, P.E.

Carl W. Mackley, P.E. General Manager Bear River Water Conservancy District

JAY CAPENER JEFFREY SCOTT MARK LARSON RICHARD DAY DENNIS J BOTT NEIL CAPENER JOSEPH SUMMERS JAY CARTER

CARL MACKLEY, P. E. GENERAL MANAGER