WaterSMART Grants

Water and Energy Efficiency Grants for Fiscal Year (FY) 2024 and FY 2025

Notice of Funding Opportunity No. R24AS00052

Funding Group I
Category A

Annabella Irrigation Company Pipeline Improvement Project Phase I

Annabella, Utah

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February 22, 2024

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Technical Proposal and Evaluation Criteria

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. Note: If you are a Category B applicant, you must include a letter from the Category A partner confirming that they are partnering with you and agree to the submittal and content of the application (see Section C.1 Eligible Applicants). See Section D.2.2.12 Letter of Partnership for additional information.*
- *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. Please note: this information will be used to create a summary of your project for our website if the project is selected for funding. For example, see the description below of a project selected for funding in FY 2023:*
- *State the length of time and estimated completion date for the proposed project (month/year).*
- *Whether or not the project is located on a Federal facility*

Date: Application due date is Thursday, February 22, 2024, at 4:00 p.m. MDT for FY 24 funding

Applicant: Annabella Irrigation Company; Annabella, Sevier County, Utah

Category: Category A

Project Title: Annabella Irrigation Company Pipeline Improvement Project

Project Summary:

The Annabella Irrigation Canal is an approximately 7-mile-long canal located in Annabella, Sevier County, Utah, and is managed by the Annabella Irrigation Canal Company (Annabella Irrigation). The canal is historical, having been constructed between 1872 and 1876. The irrigation season, during which the canal provides critical water to 2,284 acres, begins around April 1 each year and lasts until the beginning of October. It should be noted that Annabella Irrigation is allowed releases in March and November as well.

The canal collects weeds and debris during windstorms, which create chokepoints along with yard waste and household garbage littered into the canal by residents. The canal loses approximately 1,533 acre-feet of irrigation water to seepage annually, mostly in the unlined portions of the canal. Most of the unlined canal occurs through the city of Annabella. Additional water is lost via evaporation in the exposed portions of the canal. Portions of the canal are in a state of structural disrepair, presenting a major public safety hazard. The potential for falling and, potentially drowning (especially for children), at the canal is high during certain times of year. The proposed project seeks

to reduce seepage and evaporation losses as well as to improve public safety by piping the unlined portions of the Annabella Irrigation Canal where the water losses occur.

Approximate Length: 24 months

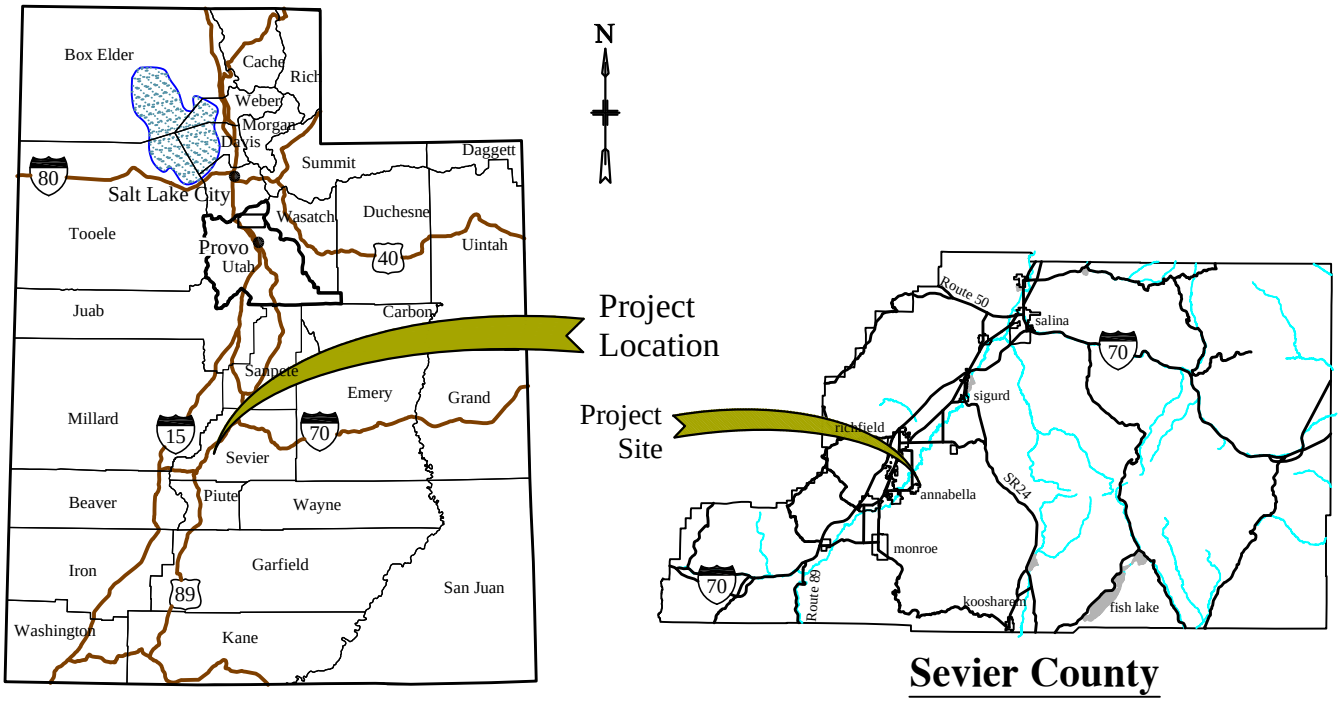
Completion Date: January 2027

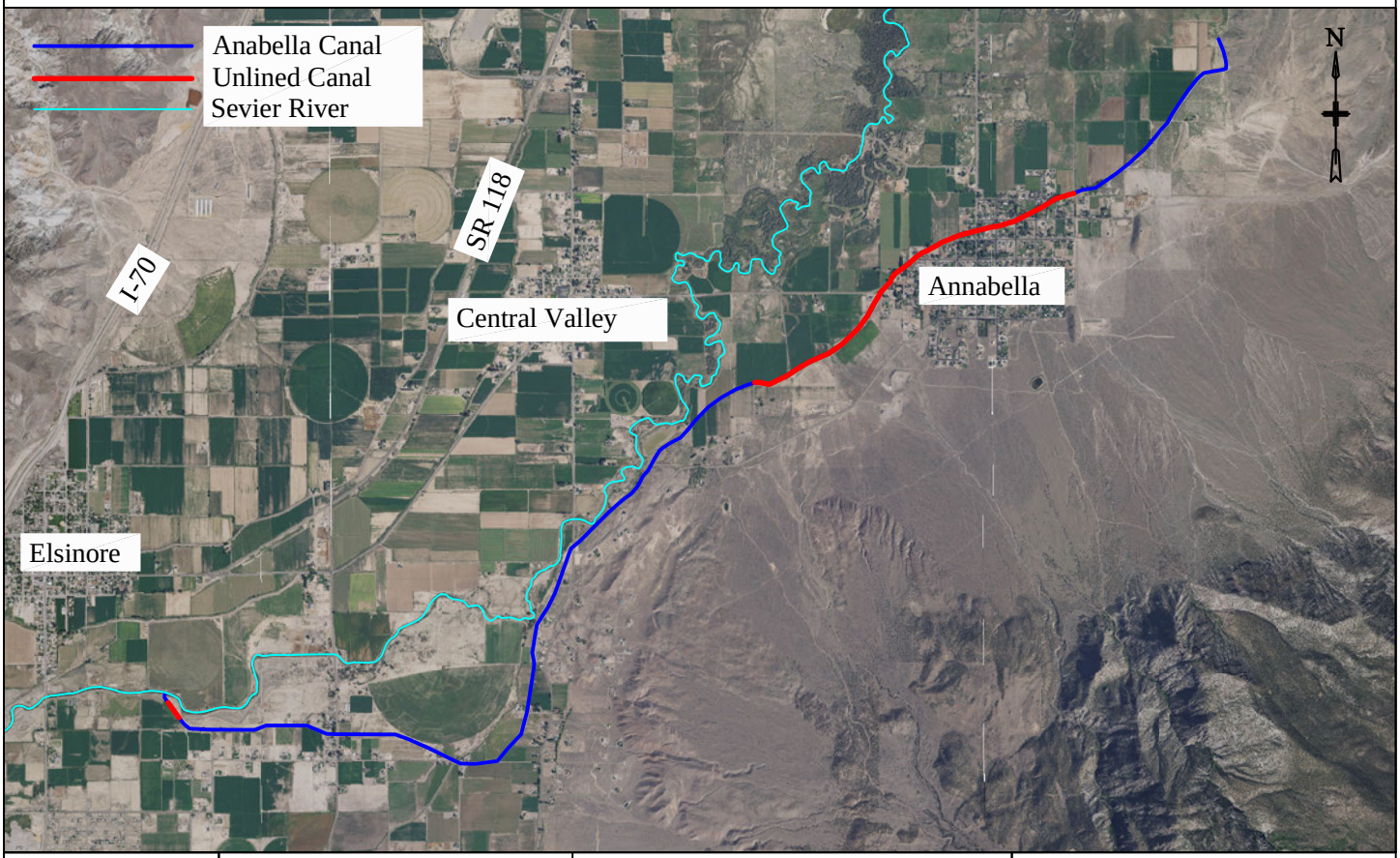
Federal Facility: The project is not located on a federal facility.

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 specific 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 Annabella Irrigation Company Pipeline Improvement Project is located in Sevier County, Utah approximately 5 miles southeast of Richfield, Utah. The project latitude is 38°42'30"N and longitude is 112° 3'35"W. The project location map below describes the approximate location of the project area.





FRANSON CIVIL ENGINEERS	DATE: February 20, 2024 SCALE: Location Map.dwg O:\23077 ANNABELLA IC Projects\Drawings LAYOUT: Layout1	Annabella Irrigation Canal Company	Figure 1 Annabella Canal Location

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.

Annabella Irrigation Canal Company (Annabella Irrigation) operates the Annabella Canal under the water right 63-3001 and is supplied from the Sevier River. The Annabella Canal conveys water to 2,284 acres. The Annabella Canal is 7 miles long. The upper 6 miles of the Annabella Canal is 7 feet wide at the bottom and falls 2.5 feet per mile. The canal then narrows, and the next 1 mile of the canal is 5 feet wide at the bottom and falls 2.5 feet per mile.

Most of the canal is concrete lined, however, two sections are unlined. One section is near Annabella Town and is approximately 10,400 feet long. The other section is near the beginning of the canal alignment and was originally lined with concrete, however, during a flooding event in 1983 500 feet of the canal was washed out. These unlined sections of the canal are shown in Figure 1.

It is proposed that 4,250 feet of the unlined sections of canal be piped as part of Phase I. The goal of Annabella Irrigation to pipe all unlined portions to conserve the water lost due to seepage. Phase I would prepare the design and NEPA compliance work to pipe all 10,900 feet of unlined canal and only construct 4,250 feet of the pipeline. The pipeline would be designed as a non-pressurized system, which would give the irrigation company the ability to pipe only portions of their canal. The proposed pipelines would vary from 36 to 48 inches in size. The pipe installed will be HDPE dual wall, smooth interior pipe, which is watertight. Concrete cleanout manholes will be installed every 400 feet and concrete boxes will be installed at each turnout location with control gates. The proposed pipelines follow the existing canal alignment, eliminating the need to acquire easements.

The Annabella Canal average annual diversion from the Sevier River is 5,377 acre-feet. The proposed project will save an estimated 1,008 acre-feet annually.

Evaluation Criteria

E.1.1 Evaluation Criterion A: Quantifiable Water Savings (25 points)

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

Water Savings

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 estimated amount of water that is expected to be conserved as a direct result of this project is 1,008 acre-feet of water. This water savings will be a result of piping unlined portions of the Annabella Canal, which will contain current water losses from canal seepage.

Table 1: Potential Annual Water Savings

Year	Annual Flow Diverted (AF)	Annual Seepage From Annabella Canal (AF)	Annual Water Savings (AF)
2023	7,035	2,111	1,319
2022	3,430	1,029	643
2021	3,844	1,153	721
2020	5,853	1,756	1,098
2019	6,724	2,017	1,261
Average	**5,377**	**1,613**	**1,008**

Current Water Losses

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

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

The water that will be conserved as a result of this project is currently seeping into the ground.

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?

There are no documented uses of the seepage losses from the Annabella Canal. Most likely, the seepage losses go into shallow groundwater where it is lost to evaporation and evapotranspiration.

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?

No known benefit occurs due to seepage losses from the Annabella Canal.

Support/Documentation of Water Savings

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

To quantify water savings from seepage, data from the irrigation company was analyzed using an inflow vs. outflow method to determine how much seepage was occurring. This data was compared to available saturated hydraulic conductivity (Ksat) data from the NRCS Web Soil Survey.[1] Using both the measurement data from the irrigation company and the soil data from the Web Soil Survey, it was determined that a conservative estimate of total water loss from the Annabella Canal due to seepage is 30%. It was determined that 62.5% of the total seepage in the canal was being lost in the unlined portions of the canal that are proposed to be piped. The Sevier River Water Users Association has made available Annabella Canal diversion flows since 2019. The annual diversions were averaged over the last five years to calculate the average annual diversion, seepage losses, and potential water saved from this piping project.

Inflow/Outflow Data

Annabella Irrigation measures water diverted out of the Annabella Canal to account for water each shareholder uses each irrigation season. At each diversion there is a measurement device. An example of one of these devices can be seen in Figure 2.

Figure 2: Parshall Flume at Diversion Along Annabella Canal

The diversions from the Annabella Canal were totaled and compared to the amount diverted from the Sevier River into the Annabella Canal. The Annabella Canal river diversion data is available

[1] https://websoilsurvey.sc.egov.usda.gov

online from the Sevier River Water Users Association.[2] Data showed some days with gains and some days with little water loss. An irrigation company uphill of the Annabella Canal has occasional wastewater flow that enters the canal, stormwater also enters the canal, and one shareholder has a personal spring that is used for irrigation that drains into the Annabella Canal occasionally. While there were no notes on the days these inflows occurred, it was felt that the low water loss days were due to these unmeasured inflows. A low estimate of seepage losses was given by the water master to be 5 cfs. To be conservative, days that had losses of 4 cfs or less were assumed to have some kind of inflow into the canal and these days were not used to calculate the average seepage losses in the Annabella canal.

Table 2:Annabella Canal Seepage Loss Based on Measurements[3]

Date	River Diversion (cfs)	Total Deliveries (cfs)	Water Loss (cfs)	Water Loss (%)
8/10/2023	12.40	16.25	-3.85	-31%
8/11/2023	20.00	15.75	4.25	21%
8/12/2023	19.70	15.00	4.70	24%
8/13/2023	20.00	18.00	2.00	10%
8/14/2023	20.30	15.75	4.55	22%
8/15/2023	20.20	17.75	2.45	12%
8/16/2023	20.00	16.75	3.25	16%
8/17/2023	20.00	19.75	0.25	1%
9/1/2023	20.00	12.50	7.50	38%
9/2/2023	19.80	12.50	7.30	37%
9/3/2023	19.90	16.50	3.40	17%
9/4/2023	20.10	12.25	7.85	39%
9/5/2023	20.10	12.25	7.85	39%
9/6/2023	19.80	15.25	4.55	23%
9/7/2023	14.50	15.25	-0.75	-5%
Average	**19.98**	**13.91**	**6.07**	**30%**

Seepage Loss Based On Soil

A seepage loss analysis based on soil was done to confirm measurement data. First, the canal was broken into sections based on which soil the canal was in and whether the canal section was lined or unlined. If the section was unlined, the soil Ksat value from the Web Soil Survey was used for the

[2] http://sevierriver.org/rivers/central

[3] Data shown in red was not used in the average.

seepage rate. If the section is lined, a seepage rate of 0.12 inches per hour was used. This is based on a concrete-lined canal seepage study that was performed.[4]

The width of the canal was considered the wetted perimeter, which is a simplifying and conservative assumption. The length of the canal segments was then used to obtain an area of seepage. This area was multiplied by the seepage rate assigned to the corresponding soil in that canal section to obtain a seepage flow rate. This calculated flow rate represents the water loss when that section of canal is delivering water.

Not all sections of the canal carry water all year, however, a lot of the deliveries are toward the end sections, requiring the upper sections to be full all the time. Each segment of the canal was multiplied by a factor based on the percentage of time the canal was carrying water. For example, the upstream sections of the canal would be full 100% of the time, while the end section of canal would only be delivering water when the last turnout is taking water. Table 3 shows the values used to calculate the seepage for each section of the canal.

The lines highlighted in Table 3 correspond to the unlined sections of the canal that will be piped as part of the project. This corresponds to 62.5% of the total seepage losses in the canal.

Table 3: Annabella Canal Seepage Loss Based on Soils

Pipe Section	Unlined/Lined	Soil	Length (ft)	Width of Canal (ft)	Percent of Time Full	Seepage Rate (in/hr)	Calculated Seepage (cfs)
1	Lined	134	145	7.00	100%	0.12	0.003
2	Unlined	134	500	7.00	100%	46.73	3.786
3	Lined	134	764	7.00	100%	0.12	0.015
4	Lined	132	4,661	7.00	100%	0.12	0.091
5	Lined	133	1,289	7.00	100%	0.12	0.025
6	Lined	132	1,561	7.00	100%	0.12	0.030
7	Lined	133	739	7.00	100%	0.12	0.014
8	Lined	133	1,047	7.00	100%	0.12	0.020
9	Lined	108	5,716	7.00	100%	0.12	0.111
10	Lined	103	2,484	7.00	100%	0.12	0.048
11	Lined	132	3,631	7.00	100%	0.12	0.071
12	Unlined	132	1,955	7.00	100%	1.21	0.384
13	Unlined	108	1,419	7.00	90%	4.00	0.828
14[5]	Unlined	168	6,319	7.00	80%	4.00	3.277

[4] https://www.researchgate.net/publication/343255615_Analysis_of_seepage_loss_from_concrete_lined_irrigation_canals_in_Punjab_Pakistan

[5] In Phase I, half of Pipe Section 14 will be piped

Pipe Section	Unlined/Lined	Soil	Length (ft)	Width of Canal (ft)	Percent of Time Full	Seepage Rate (in/hr)	Calculated Seepage (cfs)
15	Unlined	132	735	5.00	70%	1.21	0.072
16	Lined	132	391	5.00	60%	0.12	0.003
17	Lined	168	846	5.00	50%	0.12	0.006
18	Lined	132	1,524	5.00	30%	0.12	0.006
19	Lined	168	468	5.00	20%	0.12	0.001
20	Lined	132	1,338	5.00	5%	0.12	0.001
Total Canal Seepage Losses (cfs)							**8.8**
Seepage Losses from Proposed Piped Sections (cfs)							**5.5**

Average Annual Water Loss and Potential Savings

The total seepage loss based on the soil analysis came out to be 8.8 cfs. This represents a 44% seepage loss based on a 20 cfs river diversion. The average diversion for the Annabella Canal is 20 cfs. The more conservative amount of 30% seepage losses that was determined from the irrigation company's measurement data will be used. Table 1 in the previous section shows the 2019–2023 diversion data for the Annabella Canal. The average annual water loss from seepage is approximately 1,613 acre-feet.

Expected water savings from piping the unlined sections (highlighted in Table 3) were determined to be 62.5% of the average annual seepage losses. The potential annual water savings as a direct result of implementing this piping project is 1,008 acre-feet.

Project Types

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

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

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

The potential annual water savings as a direct result of implementing this piping project is 1,008 acre-feet. Expected water savings from piping the unlined sections were determined to be 62.5% of the average annual seepage losses. This percentage was determined as the result of the seepage loss analysis based on soils and direct measurement. More support and documentation can be found in the previous section.

$$Water\ Savings = Average\ Annual\ Seepage\ x\ 62.5\% = 1{,}613\ \text{AF x } 0.625 = 1{,}008\ \text{AF}$$

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

Two methods of analysis were performed. An inflow/outflow analysis was performed using measurement data from the irrigation company. The second method was an analysis based on the saturated hydraulic conductivity of the soils along the canal alignment. The inflow/outflow method resulted in an estimated 30% of seepage losses. The soil method resulted in an estimated 44% of seepage losses. The more conservative value of 30% was used and applied to the average annual diversion totals from 2019 to 2023. More support, documentation, and results can be found in the previous sections.

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

The proposed piping of sections of the Annabella Canal are expected to result in negligible post-project seepage losses due to enclosing the system with impermeable pipe with watertight joints.

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

The anticipated annual transit loss reductions in terms of acre-feet per mile are shown in Table 4. There will be 740 acre-feet of water saved per mile on unlined canal piped.

Table 4: Transit Loss Reductions

	Length (miles)	Water Loss (AF)	AF of Water Loss per Mile
Lined	5.0	81	16
Unlined/Not Piped	1.2	524	424
Unlined/Piped	0.8	1,008	1212
Total	**7.1**	**1613**	**227**

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

The reduction in canal seepage losses will be verified by continued measurements of flow at each turnout and comparison to inflow recorded at the monitoring station at the head of the canal. Matching amounts indicate successful seepage loss reductions.

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

Materials used to enclose the system include 36- to 48-inch HDPE smooth interior wall and corrugated exterior wall N-12 pipe with a Manning's roughness coefficient of 0.012. Concrete diversion boxes and manhole locations will be determined during design. Control gates will be installed at every diversion box to divert water to each turnout. The diversion boxes will comply with industry-accepted standards in accordance with the Natural Resources Conservation Service.

(2) ***Municipal Metering***

Not applicable for this project.

(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.

We know there will be improved operational efficiency due to a piped system reacting faster to flow changes resulting in fewer unintended spills at the end of the canal. This improvement in water control and measurement is expected to save water.

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.

While current operational losses are expected to decrease, actual quantifiable savings were not calculated.

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?

Currently, there are measurement devices at each turnout along the Annabella Canal. Each of the turnouts along the proposed piping project will be updated. It is expected that the accuracy will be improved significantly.

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

Flow measurement devices have not been designed at this time.

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

We know there will be improved operational efficiency due to a piped system reacting faster to flow changes resulting in fewer unintended spills at the end of the canal. This improvement in water control and measurement is expected to save water.

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

Actual water savings will be verified by comparing the inflow from the Sevier River and comparing to the delivery measurements at each turnout.

(4) ***Turf Removal***

Not applicable for this project.

(5) ***Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles***

Not applicable for this project.

(6) ***High-Efficiency Indoor Appliances and Fixtures***

Not applicable for this project.

(7) ***Commercial Cooling Systems***

Not applicable for this project.

E.1.2 Evaluation Criterion B: Renewable Energy (20 Points)

E.1.2.1 Subcriterion B.1: Implementing Renewable Energy Projects Related to Water Management and Delivery

Not applicable. This project does not install any new renewable energy capacity.

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

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

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project.

- *If quantifiable energy savings are 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.*

It is estimated that 7,536 kWh/year will be saved from project implementation. It is expected that piping the unlined sections of the Annabella Canal will improve the time it takes to fill the canal. Currently, it takes 24 hours for water to reach the end of the canal. As water is saved from seepage and the transit time is improved, it is expected that pumps along the Annabella Canal will run more efficiently and more smoothly. A common operating condition that results in a drop in pump

efficiency is when water drawdown occurs.[6] The Annabella Canal conveys irrigation water to 2,284 acres. Approximately 55% of these acres (1,256 acres) use private pumps. When a pump loses dynamic head from the canal level dropping or runs dry and needs to restart, the estimated efficiency loss is approximately 1% based on typical pump curves. The duty value for this area of Utah is 3 acre-feet annually per acre. Water needs to be lifted 100 ft or 43 psi for sprinkler irrigation. It takes 146 kWh to lift one acre-foot 100 ft with a 70% efficient pump.[7] It takes 144 kWh to lift one acre-foot 100 ft with a 71% efficient pump. Calculations are shown below.

$$Existing\ Energy\ Usage = 1{,}256\ acres\ x\ \frac{3\ acre-feet}{acre/year}\ x\ \frac{146\ kWh}{acre-feet} = 550{,}128\ \frac{kWh}{year}$$

$$Projected\ Energy\ Usage = 1{,}256\ acres\ x\ \frac{3\ acre-feet}{acre/year}\ x\ \frac{144\ kWh}{acre-feet} = 542{,}592\ \frac{kWh}{year}$$

$$Energy\ Savings = 550{,}128 - \ 542{,}592 = 7{,}536\ \frac{kWh}{year}$$

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

The total CO_2 equivalent emissions that will be saved from project implementation have been estimated to be 2,215 kg/year. These emission savings are from fuel reduction used to maintain and monitor the canal as well as energy savings from improved pump efficiencies.

By enclosing the open canal, the frequency of physical monitoring and site visits can be reduced. A diesel off-road truck with an efficiency of 10 miles per gallon is assumed.

$$Diesel\ Saved = 5\ \frac{miles}{trip}\ x\ 2\ \frac{trips}{week}\ x\ 17\ \frac{weeks}{year}\ x\ \frac{gallons}{10\ miles} = 17\ \frac{gallons}{year}$$

Maintaining the canal sections involves 24 hours of shepherding the water down the canal and cleaning out sediment and debris with a backhoe. It is expected that 50% of the hours will be cut back by piping the unlined sections of the canal as part of the project. It is assumed that the backhoe consumes 5 gallons of diesel per hour.

$$Diesel\ Saved = 12\ \frac{hours}{year}\ x\ 5\ \frac{gallons}{hour} = 60\ \frac{gallons}{year}$$

Using the EPA simplified GHG Emissions Calculator, the total CO_2 equivalent emissions that will be saved from saving 77 gallons of diesel is 15 kg/year. Using the same EPA calculator, the total CO_2 equivalent emissions that will be saved from saving 55,380 kWh/year is 2,200 kg/year.

[6] https://extension.colostate.edu/topic-areas/agriculture/irrigation-pumping-plant-efficiency-4-712

[7] https://cetulare.ucanr.edu/files/82040.pdf

- *If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?*

Piping the unlined sections of the Annabella Canal is expected to improve the time it takes to fill the Canal. Currently, it takes 24 hours for water to reach the end of the canal. As water is saved from seepage and the transit time is improved, it is expected that pumps along the Annabella Canal will run more efficiently and more smoothly. Calculations are shown above.

- *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.*

Energy saving originates from increasing the efficiency of small individual pumps at various locations along the canal alignment.

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

Not applicable to this project.

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

By enclosing the open canal, the frequency of physical monitoring and site visits can be reduced. This decreases vehicle travel by an estimated two trips per week at five miles per trip for 17 weeks during the year. A diesel off-road truck with an efficiency of 10 miles per gallon is assumed.

$$Diesel\ Saved = 5\ \frac{miles}{trip}\ x\ 2\ \frac{trips}{week}\ x\ 17\ \frac{weeks}{year}\ x\ \frac{gallons}{10\ miles} = 17\ \frac{gallons}{year}$$

- *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).*

Some sensors will need to be installed as part of the SCADA system. The water measurement system may implement solar as the power source for these sensors.

E.1.3 Evaluation Criterion C: Sustainability Benefits (15 points)

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

Resilience and Sustainability Benefits.

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

As can be seen in Figure 3 below, Sevier County, Utah has experienced extreme and even exceptional drought conditions in recent years. In fact, 2021, 2022, and 2023 all experienced the most severe drought conditions in the area since 2000.

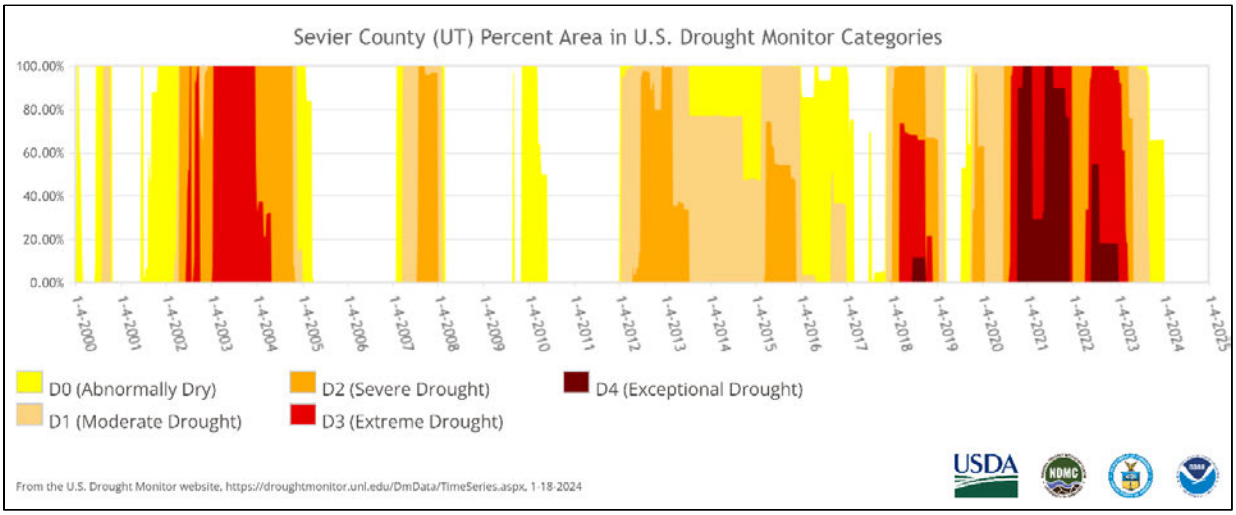


Figure 3: Sevier County Percent Area in U.S. Drought Monitor Categories

- *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).*

It can be reasonably predicted that drought duration and frequency will continue to increase in the foreseeable future, requiring local irrigation districts, such as the applicant, to adapt. This assumption is supported by a recent climate-informed analysis, namely the Fifth National Climate Assessment (Chapter 2, "Climate Trends") which suggests that drought occurrences in the Western United States will increase in the coming years.

- *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.*

As shareholders within Annabella Town limits run out of surface irrigation provided by the Annabella Canal, some turn to using culinary water for lawn and yard irrigation. The culinary system relies on groundwater pumping in the summer months. Energy sustainability is adversely impacted by heavy reliance on groundwater pumping in the area, particularly when surface irrigation water is low. Energy will be saved via a reduction in groundwater pumping during the late irrigation season. Because the piping of the canal will reduce seepage and evaporation losses, the canal will be able to supply water later into the growing season and reduce the demand for pumping during the late season, therefore reducing energy consumption and, in turn, greenhouse gas emissions in the area. This reduction, although small, is one of many similar actions being implemented in projects across the country that, taken cumulatively, will help offset the adverse effects of climate change.

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

By reducing the seepage and evaporation losses in the canal, the project will increase the supply of irrigation water later into the growing season and will reduce the local demand for groundwater pumping. This will result in a direct reduction in fossil fuel pollution and improve energy sustainability in the region.

- *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?*

The project will result in more efficient management of the water supply. As a result of the saved water currently lost to seepage and evaporation, water managers will be able to provide water later into the growing season and will be able to establish a more accurate and reliable method of budgeting water throughout the year. This will allow farmers to grow crops later into the season and to have more reliability in the duration of the year in which they will be supplied with irrigation water. This can be measured by observing the increase in crop yields that should be associated with a longer irrigation season.

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

Where the conserved water will go will vary from year to year. It will depend on rainfall during the irrigation season and available storage. The conserved water will first be used to address shortages that occur in the late season. It is also expected that conserved water will remain in the Piute Reservoir some seasons, which adds greater flexibility in the use of the water. Stored water could be used for multiple purposes, including improved stream flows in the Sevier River.

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

Not applicable to this project.

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

The project will help to prevent water-related conflicts within the canal company and Annabella Town. Conflicts can arise within the canal company regarding water scarcity. The implementation of canal piping will allow for more available irrigation water and decrease conflicts that arise from drought water years. Conflicts are ongoing over road crossings installed by Annabella Town that reduce the capacity of the canal. Piping the open canal would alleviate the conflict will Annabella Town.

This project will also set an example to other canal companies and water districts in the region that implementing conservation measures is a worthwhile course of action.

Ecological Benefits. *Please provide information regarding how the project will provide ecosystem benefits, including the following:*

- *Will the project benefit species (e.g., federally threatened, or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).*

There is the potential for suitable habitat to occur for the following species identified using the USFWS ECOS IPaC system on January 18, 2024: Ute Ladies'-Tresses (Spiranthes diluvialis), Yellow-billed Cuckoo (Coccyzus americanus), and Monarch Butterfly (Danaus plexippus). A full evaluation of impacts to these Federally listed species will be completed during the environmental compliance process. There has been a final critical habitat designated for the Yellow-billed Cuckoo in the area, however, the project does not overlap with this habitat. While the project does not have any component directly tied to the protection of a specific species, the possibility of increased water quantity in the Sevier River will benefit the native aquatic ecosystem including any protected species that may be present.

- *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.).*

This project will keep water in the system for longer periods. By piping the Annabella Irrigation Canal, water which would normally be lost to seepage and evaporation will be conserved and be available for use later into the growing season. Currently, irrigation water supply is very limited during the late irrigation season, especially during years of drought. The system has historically run out of water before the end of the growing season. While the exact period in which water will be available later into the season will vary from year to year, the general increase in irrigation water supply will result in increased crop yields and higher agricultural productivity.

Additionally, because of the way releases are made from nearby Otter Creek, there are times when canal companies with bigger diversions divert water and Annabella Irrigation Company will have no diverted water in the middle of the growing season while they wait for the river commissioner to update the releases into the Sevier River. During these times, the canal dries up and it takes a significant amount of time to fill it again. By piping the canal, the irrigation company would be able to improve water delivery time to the shareholders in situations like these.

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

While the project does not have any component tied to the protection of a specific species, the increased volume of water in the Sevier River will benefit the native aquatic ecosystem including any protected species that may be present.

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

Enclosing/piping the canal will have a direct benefit to the local ecosystem in multiple ways. First, disturbances associated with open channel canals such as erosion and sedimentation will be reduced. Second, nutrient loading into the water as a result of erosion will also be reduced, resulting in the overall improvement of local water quality at discharge points. The reduction of open channel disturbances from annual cleaning of the canal will also provide greater protection of existing riparian corridors along the length of the canal and allow additional native botanical species to take root.

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

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

The project will increase resilience to climate change by conserving agricultural water for use later in the year. Simply having more water to manage allows farmers and water managers to make more climate-informed decisions during the irrigation season. For example, in years of severe drought, water managers would be able to better allocate water throughout the entirety of the growing season rather than having their supply be nearly depleted by the end of the season. Additionally, the pipeline will ensure most of the water that is distributed to water users is not lost in transmission and is utilized for its intended purpose. Because of these things, the project will increase local drought resiliency, water budgeting, and will provide residents with an adaptable water system to combat the impacts of climate change.

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

This project seeks to improve ecological resilience to climate change. By efficiently using the water, irrigators can maintain production while diverting less water. More efficient use of water in the project area will keep more water in the ecosystem which will serve as a critical buffer against the impacts of climate change in the future.

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

The air quality of Annabella will likely be improved by the project as demand for groundwater pumping will be reduced during the later growing season. This will reduce the level of greenhouse gas emissions which, when taken cumulatively with other regional, state, and national efforts to reduce fossil fuel emissions, contribute to the reduction of climate pollution on a significant scale.

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

The project does not include green or sustainable infrastructure designed to improve the climate resilience of the local community.

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

As project stakeholders witness the benefits from the proposed project it can be used as an example for future projects in the area, making resilience to climate change and sustainability an essential component considered for similar projects.

E.1.4 Evaluation Criterion D: Disadvantaged Communities, Insular Areas, and Tribal Benefits (15 points)

E.1.4.1 Subcriterion D.1: Disadvantaged Communities

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

- *If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool.*

According to the CEJST, the tract containing the project area (Tract No. 49041975200) is partially disadvantaged, particularly the lands of Federally recognized tribes that cover less than 1% of the tract are considered disadvantaged. The tribe referred to in this tract is the Paiute Tribe. The tract is in the 94th percentile for expected population loss rate, 90th percentile for projected wildfire risk, and there are one or more abandoned mine lands in the tract that can contribute to legacy pollution.

This project will not directly benefit the disadvantaged community as it comprises less than 1% of the total CEJST tract and is not present within the area to be affected by the project measures. This being said, there will be no adverse impacts to the existing disadvantaged population as a result of the project and there will be potential indirect benefits that will come in the form of local economic growth resulting from increased agricultural productivity and crop yields. Therefore, while there may not be any direct benefits to disadvantaged populations, there remains potential for indirect

benefits as a result of the project and an assurance that no adverse impacts will occur to the existing disadvantaged population in the CEJST tract.

E.1.4.1 Subcriterion D.1: 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 project does not directly serve or benefit a Tribe. The Paiute Tribe is not located in the vicinity of the project measures and will not be directly impacted. The project will not increase water supply sustainability or access to renewable energy for an Indian Tribe.

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

Not applicable to this project.

- *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?*

While the project does not place any specific emphasis on improving Tribal resilience to climate change or drought, the project will improve the resilience of the local community. This could lead to the indirect support of Tribal communities that may implement similar efforts to improve infrastructure as well as climate change and drought resiliency after seeing the success of this project.

The proposed project does not involve any Reclamation activity with a Tribe or interaction with any of Reclamation's Tribal trust responsibilities.

E.1.5 Evaluation Criterion D: Complementing On-Farm Irrigation Improvements (8 points)

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

- *Describe any planned or ongoing projects by farmers/ranchers that receive water from the applicant to improve on-farm efficiencies.*
  - *Provide a detailed description of the on-farm efficiency improvements.*
  - *Have the farmers requested technical or financial assistance from NRCS for the on-farm efficiency projects, or do they plan to in the future?*

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

The majority of shareholders serviced by the Annabella Canal have improved irrigation methods from surface to sprinkle.

- *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.*

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

The proposed WaterSMART project would complement potential on-farm improvements by creating a more reliable source of water. This project will make water available that is currently being lost due to seepage. Because the water will be available to shareholders, more shareholders will likely invest in on-farm improvements. The efficiency of existing private pumps diverting out the Annabella Canal is also expected to increase from a more stable water supply, which would decrease pump cycling and dynamic head drops.

- *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.*

If an on-farm project takes place, an increase in agricultural efficiency from 40% to 75% can be expected.[8] The water conserved due to improved efficiency would likely be used later in the year to increase agricultural yield. For each share implementing on-farm improvements, 0.42 acre-feet of water is expected to be saved annually. Annabella Irrigation has a total of 4,568.5 shares in the company and diverts 5,377 acre-feet on average annually. This means approximately 1.2 acre-feet per share is available. The calculation for how many acre-feet of savings per share is shown below.

$$Savings = 1.2\ AF\ x\ (1 - 0.4) - 1.2\ AF\ x\ (1 - 0.75) = 0.72\ AF - \ 0.30AF = 0.42\ AF$$

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.

Figure 4 shows a map of the water service area boundaries for Annabella Irrigation.

[8] https://extension.usu.edu/crops/research/irrigation-water-loss-and-recovery

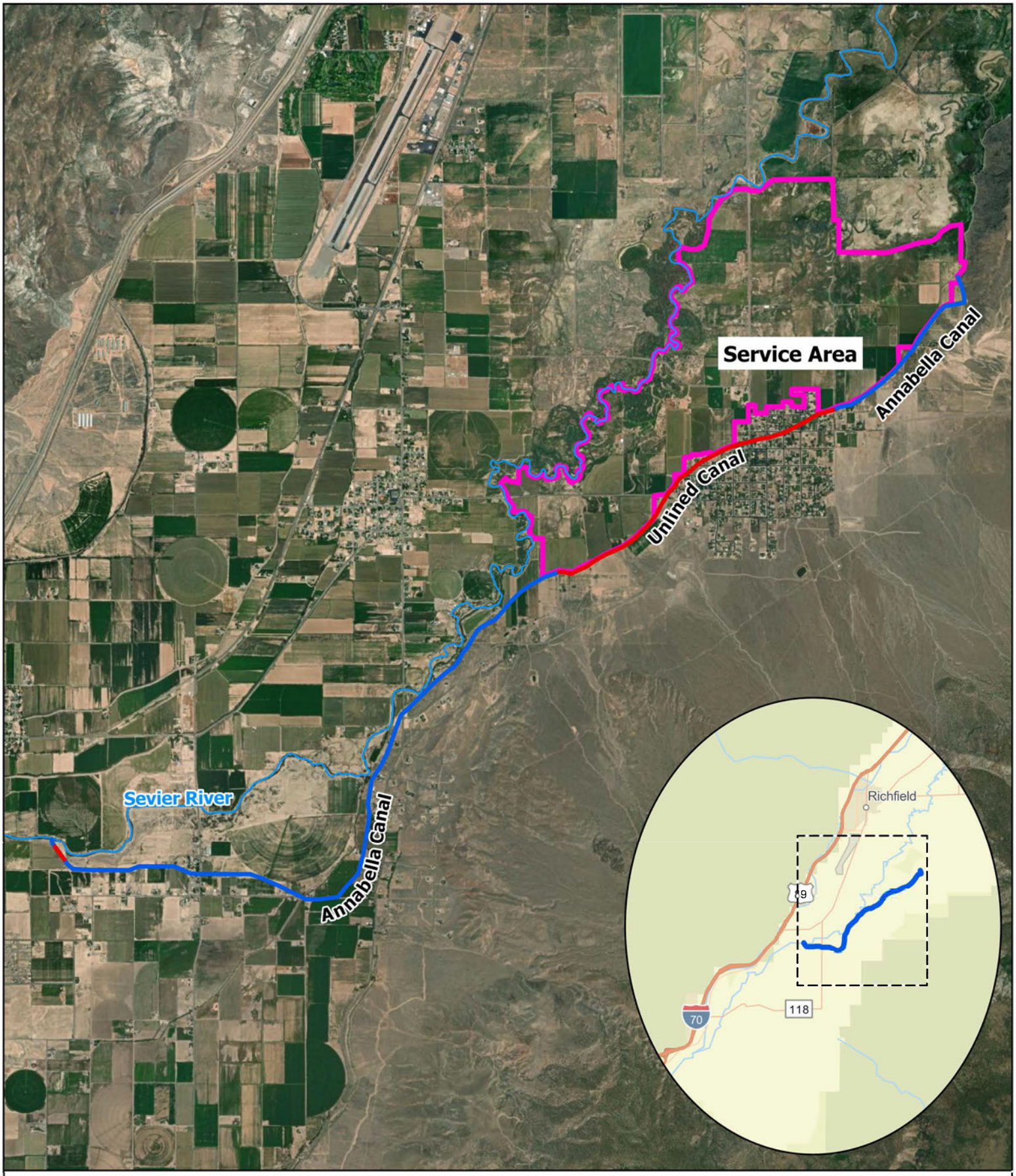


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Figure 4: Water Service Area Map

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E.1.6 Evaluation Criterion F: Readiness to Proceed (8 points)

Up to 8 points may be awarded for this criteria.

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

Secure Funding

Annabella Irrigation plans to acquire funding through the Utah Board of Water Resources in the form of a low-interest loan to cover its cost share. Annabella will also apply for a grant through the Utah Department of Agriculture and Food's Agriculture Water Optimization Program. When Annabella learns of the status of the grant applications and knows how much grant funding will be available, they will apply to the Utah Board of Water Resources for a loan to cover the remaining cost share. All funding partners require the applicant to provide a portion of the project funding so Annabella will be providing some of the project costs through cash generated through assessments and/or in-kind contributions. Funding is anticipated to be approved by the end of 2024.

Categorical Exclusion/Environmental Assessment

The local Reclamation office has been notified about the project and expected time for NEPA compliance is no more than a year for an Environmental Assessment. It will be less time if a Categorical Exclusion is sufficient for the EA process.

Engineering/Design

Engineering design has been completed to 30%. This includes alignments and pipe sizing. Figure 5 shows the proposed piped sections and turnout locations.

Project Bidding

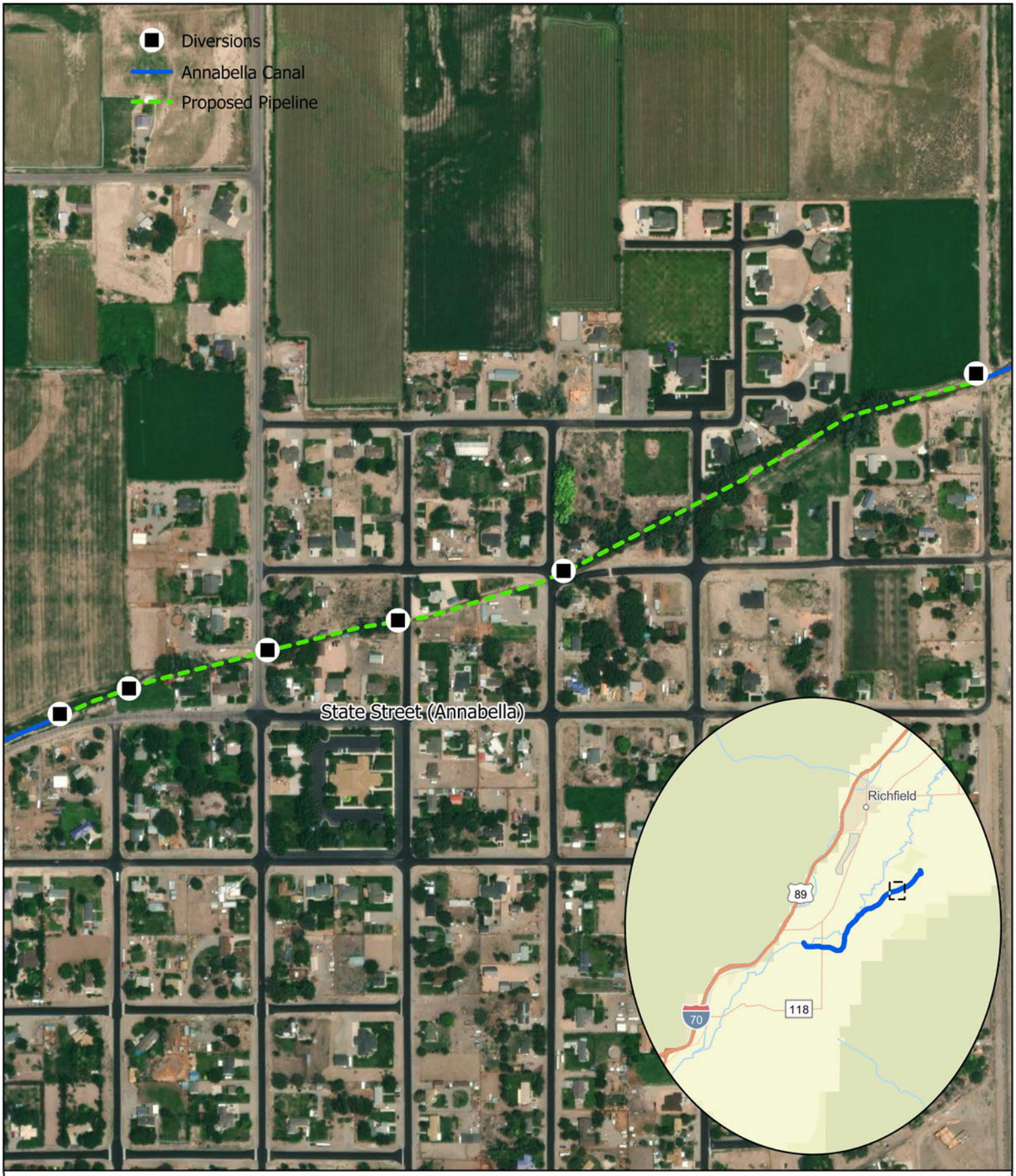
Annabella Irrigation will follow its contractor procurement process by requesting bids and qualifications from contractors. Bids will be evaluated for completeness and the most qualified contractor selected to perform the construction. Once the contractor is selected, the contract price will be negotiated by starting with the contractor's price submitted with their bid.

Project Construction

The project will be constructed in two irrigation off seasons. The first part of construction is planned between December 2025 and March 2026. The second part of construction is planned between October 2026 and December 2026. This will ensure that the project will not disrupt the irrigation season for shareholders.

Final Reporting

Final reporting will be completed as required by Reclamation if funding is approved. As part of the funding through the Utah Department of Agriculture and Food, Annabella Irrigation will be required to report water measurement data for 3 years post-construction.



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Annabella Canal

Figure 5: Project Map

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

The following permits may be required depending on what is learned during NEPA compliance and design process:

- Stream Alteration Permit: complete the application and submit it for review. 60 days for review and approval

- Clean Water Act Section 404 compliance and consultation is expected. This will most likely take six months depending on the number of jurisdictional wetlands and the status of current WOTUS definitions.

- UPDES compliance with a Stormwater Pollution Prevention Plan (SWPPP), NOI, NOT, and inspections. This will take place during construction as part of the contractor's compliance requirements.

- Clean Water Act Section 401 compliance is expected. This will normally take place in the months between design and construction, with ongoing water quality monitoring during construction.

- SHPO historical/cultural compliance. An MOU will be required during the EA process and must be completed before construction.

- Water Rights documentation of compliance. This will be completed at the same time as the design.

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

The project has been designed to 30% to create a cost estimate. A water loss study has been performed, the unlined sections of canals have been identified, an alignment for piping has been drafted, and the pipes have been sized according to the required capacities in each section of the canal.

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

The board of Annabella Irrigation has already approved the project. Board members spoke with each shareholder to determine their support for the project. All shareholders were supportive of submitting this application and construction of 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.*

All funding is expected to be approved by December 2024 at which point project design will begin. The design and permitting efforts will be completed at the same time as environmental compliance. Environmental compliance is expected to take approximately 12 months. Environmental compliance may be completed in a shorter period. In this case, the design would also be completed in the same shorter window.

- *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?*

Communication with the local Reclamation office about the project took place in February 2024 and the expected timeline for environmental and cultural compliance is expected to be 12 months.

Milestone	Date
Notice of Funding	May 2024
Funding Secured	Dec 2024
Design and Permitting	Dec 2024 to Dec 2025
NEPA compliance	Dec 2024 to Dec 2025
Project Bidding	Dec 2025
Project Construction	Dec 2025 to Mar 2026
Project Construction	Oct 2026 to Dec 2026
Project Closeout	Jan 2027

E.1.7 Evaluation Criterion G: Collaboration (5 points)

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

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

- *Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?*
- *What is the significance of collaboration/support?*
- *Will this project increase the possibility/likelihood of future water conservation improvements by other water users?*

Support for this project is widespread in the area and includes Annabella Irrigation Canal water users, Annabella Town, Sevier County, the Utah Department of Agriculture and Food, and the Utah Division of Water Resources.

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

The project will support multiple sectors with the primary sector receiving benefits being the agriculture sector. However, the environmental sector will also benefit through improvements to water quality and the public safety sector will also benefit as a result of the reduced falling/drowning risk in the canal, which is a particularly worrisome issue concerning children.

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

Letters of support from Sevier County, the Utah Department of Agriculture and Food, the Utah Division of Water Resources, Annabella Town residents, property owners adjacent to the Annabella Canal, and Annabella Irrigation shareholders may be found in Appendix A.

E.1.8 Evaluation Criterion H: Nexus to Reclamation (4 points)

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

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

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

No, the application 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?*

Not applicable to this project.

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

Not applicable to this project.

- *Is the applicant a Tribe?*

The Applicant is not a Tribe.

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 performance metric for project conservation improvements will be a record of delivered flow and measured diversions. The difference between these two amounts will quantify the total amount of conveyance losses. With the enclosure of the unlined portions of the canal, the recording of irrigation deliveries will be much more accurate.

Budget Narrative

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

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

Pre-Award Costs

Pre-award costs are those incurred prior to the effective date of a Federal award where such costs are necessary for efficient and timely performance of the scope of work. Such costs are allowable only to the extent that they would have been allowable if incurred after the date of the Federal award.

Eligible pre-award costs associated with the proposed project must be incurred after the posting date of this funding opportunity and are limited to costs related to the planning and design of the project including, but not limited to, engineering and design, modeling, environmental and cultural studies, and permitting. If the proposed project is selected, the pre-award costs will be reviewed 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 funding opportunity.

Project Cost Restrictions

Proposal costs. The costs for preparing and submitting an application in response to this funding opportunity, including developing data necessary to support the proposal, are not eligible project costs and must not be included in the project budget.

Monitoring costs. Long-term (i.e., more than six months) post-construction monitoring is considered normal operation and maintenance, and the costs are the responsibility of the applicant.
Other project costs. The costs for the purchase of water or land, or to secure an easement other than a construction easement, are not eligible project costs under this funding opportunity.

Environmental and Regulatory Compliance Costs

Depending on the potential impacts of the project, Reclamation may be able to complete its compliance activities without additional cost to the successful applicant. Where environmental or cultural resources compliance requires significant participation by Reclamation, Reclamation will add a line item for costs incurred by Reclamation to the budget during development of the financial assistance agreement and cost shared accordingly (i.e., withheld from the Federal award amount). Any costs to the successful applicant associated with compliance will be identified during the process of developing a final project budget for inclusion in the financial assistance agreement.

Indirect Costs

You may include indirect costs that will be incurred during the development or construction of a Project, which will not otherwise be recovered, as part of your Project budget. Show the proposed rate, cost base, and proposed amount for allowable indirect costs based on the applicable cost principles for your organization. It is not acceptable to simply incorporate indirect rates within other direct cost line items.

If you do not have a current Federal negotiated indirect cost rate, your budget may include a de minimis rate of up to 10 percent of modified total direct costs. For further information on modified total direct costs, refer to 2 CFR§200.1.

If you do not have a federally approved indirect cost rate agreement and are proposing a rate greater than the de minimis 10 percent rate, include the computational basis for the indirect expense pool and corresponding allocation base for each rate. Information on "Preparing and Submitting Indirect Cost Proposals" is available from the Department's IBC, Office of Indirect Cost Services, at ibc.doi.gov/ICS.

If the proposed project is selected for award, the successful applicant will be required to submit an indirect cost rate proposal with their cognizant agency within 3 months of award. The Federal awarding agency that provides the largest amount of direct funding to your organization is your cognizant agency for indirect costs, unless otherwise assigned by the White House Office of Management and Budget (OMB). If the Department is your organization's cognizant agency, the

IBC will negotiate your indirect cost rate. Contact the IBC by phone 916-930-3803 or email at ICS@ibc.doi.gov. Visit their website ibc.doi.gov/ICS, for information regarding email submission forms.

Organizations must have an active Federal award before they can submit an indirect cost rate proposal to their cognizant agency. Failure to establish an approved rate during the award period renders all costs otherwise allocable as indirect costs unallowable under the award. Recipients may not shift unallowable indirect costs to another Federal award unless specifically authorized to do so by legislation.

Environmental and Cultural Resource Considerations

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

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

Construction of the proposed project would minimally impact the surrounding environment. Soil disturbance would be limited to the current canal alignment. Air quality could be temporarily impacted due to construction machinery emissions and dust because of soil disturbance. Best practices will be implemented to reduce the impact on air quality. Water quality will be improved by piping the Annabella Irrigation Canal because of the reduction in erosion and sedimentation issues that currently occur along the banks of the existing earthen canal.

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

A USFWS ECOS IPaC Species Report was generated on January 18, 2024. Three ESA species were identified as potentially having habitat in or near Annabella Town, the Yellow-billed Cuckoo (*Coccyzus americanus)*, the Monarch Butterfly (*Danaus plexippus*), and the Ute Ladies'-tresses (*Spiranthes diluvialis*). There is no critical habitat in the project area for any of these species. It is not anticipated that project activities would affect any of the species listed in the IPaC. However, before construction begins, a registered environmental consultant will perform all required surveys to ensure no species are present within the project 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.

Currently, it is not expected that there are any wetlands or surface waters that fall under the CWA inside the project boundaries. Before construction begins, a registered environmental consultant will perform all required surveys to ensure no protected aquatic resources are affected.

When was the water delivery system constructed?

The Annabella Irrigation Canal is historical, having been constructed between spring, 1872 and spring, 1876.

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.

Yes, portions of the existing canal and turnouts will be removed and replaced with a piped system. The canal was constructed between 1872 and 1876, and individual turnouts have been modified and updated throughout the years. No records are available that detail when structures have been modified.

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 specialist at the local Reclamation office was consulted in February of 2024 and provided the following information about NRHP eligible sites in/near the project area:

- 42SV2732 – Monroe Canal – Eligible for the NRHP under Criterion A
    - This resource crosses the project area.
- 42SV2571 – Annabella Canal – Eligible for the NRHP under Criterion A and C
    - This is the canal that would be piped. The piping would be considered an adverse effect and mitigation will need to be discussed and carried out. Reclamation has a Programmatic Agreement with the Utah SHPO that can be used to streamline mitigation.

A cultural resource survey will be conducted in the project area as well during the NEPA process. Mitigation options will be discussed and coordinated with USBR's cultural and archaeological resource specialists.

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

No known archeological sites in the proposed project area. This will be verified as part of the cultural resources survey that will be conducted during the environmental review process.

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

The project will not have a disproportionate or adverse effect on any environmental justice communities. See E.1.4 of the technical proposal.

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

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

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

No, the project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native species known to occur in the area.

Required Permits or Approvals

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

See response in section E.1.6 Evaluation Criterion F in the technical proposal for full list of permit requirements.

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.

No overlap between the proposed project and other efforts exists. When all planned funding is secured, Annabella Irrigation will be responsible for at least 10% of total project costs.

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.

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.

No conflict of interest has been identified.

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.

No conflict of interest has been identified. Any that arise will be communicated to the appropriate parties.

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.

No lobbying will take place.

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).

There are no conflicts of interest identified for this project.

Uniform Audit Reporting Statement

All U.S. states, local governments, federally recognized Indian Tribal governments, and nonprofit 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.

Annabella Irrigation Company was not required to submit a Single Audit report.

Certification Regarding Auditing

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.

Disclosure of Lobbying Activities (if applicable)

If applicable, a fully completed and signed SF-LLL: Disclosure of Lobbying Activities form is required if the applicant has made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered

Federal action. ***This form cannot be submitted by a contractor or other entity on behalf of an applicant.***

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 are included in Appendix A.

Letter of Partnership

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

Letter of Partnership is included in Appendix A.

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.

The signed Official Resolution is shown in Appendix B.

Letters of Funding Commitment

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

- *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.

Annabella Irrigation is planning to obtain a loan through the Utah Board of Water Resources and apply for a grant through the Utah Department of Agriculture and Food Agricultural Water Optimization Grant Program. Letters from these organizations have been included in Appendix A.

Appendix A

Letters of Support and Partnership

State of Utah

SPENCER J. COX
Governor

DEIDRE M. HENDERSON
Lieutenant Governor

Department of Natural Resources

JOEL FERRY
Executive Director

Division of Water Resources

CANDICE A. HASENYAGER
Division Director

February 14, 2024

Richard Clark, President
Annabella Irrigation Company
PO Box 311
Annabella, Utah 84711

Subject: WaterSMART Grant Application – Annabella Irrigation Company

Mr. Clark:

The Utah Division of Water Resources understands that the Annabella Irrigation Company is seeking federal funds through the Bureau of Reclamation's WaterSMART grant program. The project will install about 11,000 feet of pipeline to replace an unlined canal.

The Division's mission is to plan, conserve, develop and protect Utah's water resources. Over the years, the Division has funded many 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.E.
Project Funding Section Manager

1594 West North Temple, Suite 310, PO Box 146201, Salt Lake City, UT 84114-6201
telephone (801) 538-7230 • TTY (801) 538-7458 • *www.water.utah.gov*

Hannah Freeze
Agricultural Water Optimization Program Manager
Utah Department of Agriculture & Food
4315 S 2700 W
TSOB South Building, Floor 2
Taylorsville, UT 84129

Re: Annabella Irrigation Company Pipeline Project

To whom it may concern:

Annabella Irrigation Company has provided me with information about their proposed canal enclosure project in Annabella, Utah. They are seeking to pipe the unlined portions of the Annabella Canal. Franson Civil Engineers estimates that this piping project would save 1,008 acre-feet of water annually. The estimated project cost is $1,251,000 to pipe 4,250 feet of canal. Annabella Irrigation Company is seeking federal funds through the Bureau of Reclamation's WaterSMART grant program to pipe portions of the company's Annabella Canal. They are also seeking State Funds through the Utah Department of Agriculture and Food (UDAF) Agricultural Water Optimization Grant (AWOG).

As the program manager of the Agricultural Water Optimization Program, we are encouraged by Annabella Irrigation Company's desire to improve the existing Annabella Canal. Canal piping projects that eliminate seepage losses are the types of projects that are funded through AWOG. It is common for these types of projects to be funded up to 50%. The funding cap is $1,000,000 per application period. Our next application round is expected to open in the fall of 2024 and funding would be available by spring 2025. Applicants will need to spend the funds typically within 2 years although extensions may be requested. Applicants are required to contribute at least 10% to the total project costs. Contributions can be in-kind work.

Well funded projects are more likely to succeed and UDAF funds similar projects that have federal cost share amounts. We look forward to seeing the Annabella Irrigation Company's application in the next funding cycle.

Sincerely,

Hannah Freeze 2/20/2024
Name (Printed) Date

Hannah Freeze Digitally signed by Hannah Freeze
Date: 2024.02.20 07:36:39 -07'00'
Signature

SEVIER COUNTY

February 20, 2024

Sevier County Commission
250 North Main Street
Richfield UT 84701

Re: Annabella Irrigation Canal Project

To Whom It May Concern:

We understand that the Annabella Irrigation Company is seeking federal funds through the Bureau of Reclamation's WaterSMART grant program to pipe portions of the company's Annabella Irrigation Canal. I am writing this letter to express the Commission's support for this project. All three commissioners support this effort.

As a local government interested in responsible use of water resources, we are encouraged by Annabella Irrigation Company's desire to improve the existing Annabella Canal which runs through Annabella Town. These improvements will enhance water conservation and improve water delivery efficiencies.

Sincerely,

Scott Johnson, Commission Chair

February 20, 2024
Date

Scott Johnson
~~Signature~~ Print

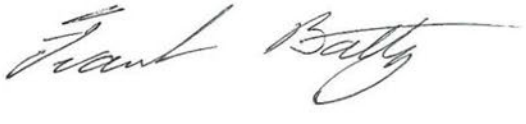
Annabella Irrigation Canal Company
P O Box 125
Annabella, UT 84711

Layne Jensen
Franson Civil Engineers
1276 South 820 East Suite 100
American Fork, UT 84003

Re: Annabella Irritation Canal Project

Annabella Canal Company held a stock holders' meeting in January, 2024 and piping a portion of our canal was discussed. The stock holders in attendance agreed that piping the canal would be beneficial in multiple ways as it would save water and also provide an increased safety factor. Around 40 years ago, a child fell into the canal and was drowned and we don't want this to ever happen again. Stock holders requested more information on possible grants to help with financing the project.

We are working with Franson Engineers and they came up with a rough price estimate for piping the unlined portion of the Annabella Canal throughout the town of Annabella and requested our permission to go ahead and file for grants. The presidency of the canal company wanted to make sure that stock holders are in agreement so stockholders were contacted by phone in order to explain the grants and our estimated financial obligations for project completion. Stock holders unanimously agreed to go ahead with the project. This consists of 1582 shares with 170 stock holders. Stockholders understand that the project would be funded by a state grant and a federal grant with the remaining cost from a loan from Utah Water Resources.

Frank Batty, 

Vice President, Annabella Irrigation Canal Company

To whom it may concern:

I am writing this letter in favor of piping the canal system in Annabella Utah. I am a property owner that has the canal running through my property. I believe that piping the canal will enhance safety, beauty and water conservation in the area.

I have served as a Law Enforcement Officer in the area for the past 21 years. The canal has always been a safety concern for children in the area. We have had deaths due to drownings on this canal. Due to the canal running through town there are many children that take an interest in the water. There are open ducts and pipes that run under roadways that make it especially high risk for entrapment and drowning. I have responded to many calls for young missing children where the canal has been the first area of search. I strongly feel that by piping the canal in this area it will be a great benefit to public safety in the city.

Thank you for your consideration in the funding of this project. As a resident of Annabella and a property owner you have my full support in the funding and construction of this project.

Sincerely, Matt McLean

Matt McL

2-17-24

To whom it may concern,

As a water user of the Annabella Irrigation system I am in very much support of this Grant Program to Pipe portions of the canal that runs through the town of Annabella not only will it conserve water but it Will be delivered quicker and most of all it will give safety of children, so as a user I would encourage the Annabella Irrigation Co. to do the improvements that will enhance water conservation and safety.

Sincerely,

Stephanie Morgan 02/16/2024

Stephanie Morgan

February 17, 2024

To Whom It May Concern,

My name is Scott Adams. I am a property owner along the Annabella Canal. I am very much in favor of piping the Annabella Canal.

It would be so much safer for our community.

Thank you

Scott Adams

Appendix B

Signed Official Resolution

OFFICIAL RESOLUTION
OF THE
Annabella Irrigation Company

RESOLUTION NO. 2024 - 1

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has announced the *WaterSMART Water and Energy Efficiency Grants* in order to prevent water supply crises and ease conflict in the western United States, and has requested proposals from eligible entities to be included in the WaterSMART Program, and

WHEREAS, the Annabella Irrigation Company has need for funding to complete Annabella Irrigation Company Pipeline Improvement Project.

NOW, THEREFORE, BE IT RESOLVED that the Annabella Irrigation Company Board of Directors agrees and authorizes that

1. FThe Annabella Irrigation Company Board of Directors has reviewed and supports the application submitted.

2. FThe applicant is capable of providing the amount of funding and/or in-kind contributions, specified in the funding plan; and

3. FIf selected for a WaterSMART Grant, the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

DATED: 2-16-24

Richard Clark, President
Annabella Irrigation Company