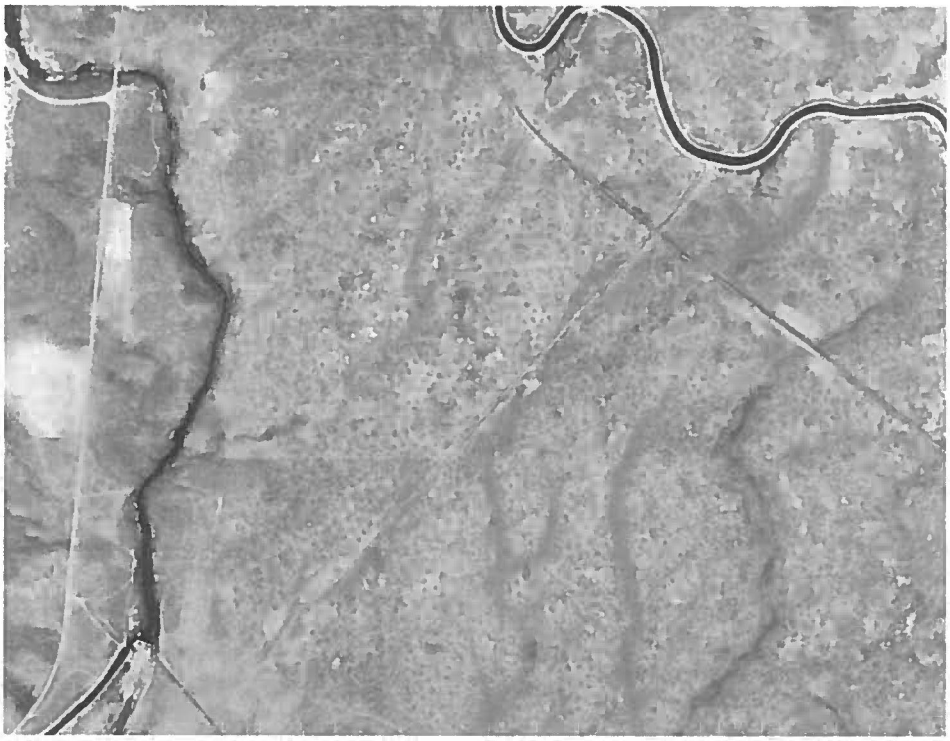
Rye Grass Bypass and Hydroelectric Project



Application for:
WaterSMART: Water and Energy Efficiency Grants for FY2023
Funding Opportunity No. R23AS00008
July 28, 2022

Submitted by:
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TECHNICAL PROPOSAL AND EVALUATION CRITERIA

EXECUTIVE SUMMARY

Date: July 28, 2022
Applicant Name: Big Wood Canal Company/American Falls Reservoir District #2
Applicant Type: Category A (Other Organization with Water or Power Delivery Authority)
Location: 18 miles North of Shoshone, Idaho in Lincoln County
Project Name: Rye Grass Bypass and Hydroelectric Project
Federal Funding Amount: $4,554,961 – [Funding Group III]

Big Wood Canal Company/American Falls Reservoir District No. 2 (BWCC/AFRD2) (a Category A applicant) will construct the Rye Grass Bypass and Hydroelectric Project, located in Lincoln County, Idaho, near the city of Shoshone (Latitude: 43.1755° N, Longitude: 114.3173° W).

The Rye Grass Bypass and Hydroelectric Project will divert up to 250 cubic feet per second (cfs) of irrigation water from a 5-mile reach of the Big Wood River, with large transmission losses, to the existing Richfield Canal. A new 5,950-foot-long, 5.8-foot-diameter steel pipeline will then return the flows back to the Big Wood River. A new hydroelectric facility will be built at the end of the pipeline to utilize the 109-foot elevation drop. The annual water savings from avoiding this high transmission loss area of the Big Wood River is estimated to be 7,620 acre-ft. The hydroelectric facility will have a capacity of 1,600 KW and is expected to produce an average of 3,670 MWHrs of clean renewable energy annually.

The proposed project construction is to be completed in 14 months with an anticipated start date of September 1, 2024 and completion date of October 31, 2025.

This facility is not located on a Federal facility.

PROJECT LOCATION

Provide detailed information on the proposed project location or project area including a map showing the specific geographic location.

The Rye Grass Hydroelectric is located in Lincoln County, Idaho approximately 18 miles north of the city of Shoshone. The powerhouse latitude is 43°10'30.7" N and longitude is 114°19'00" W. The vicinity map is shown in Figure 1 below.

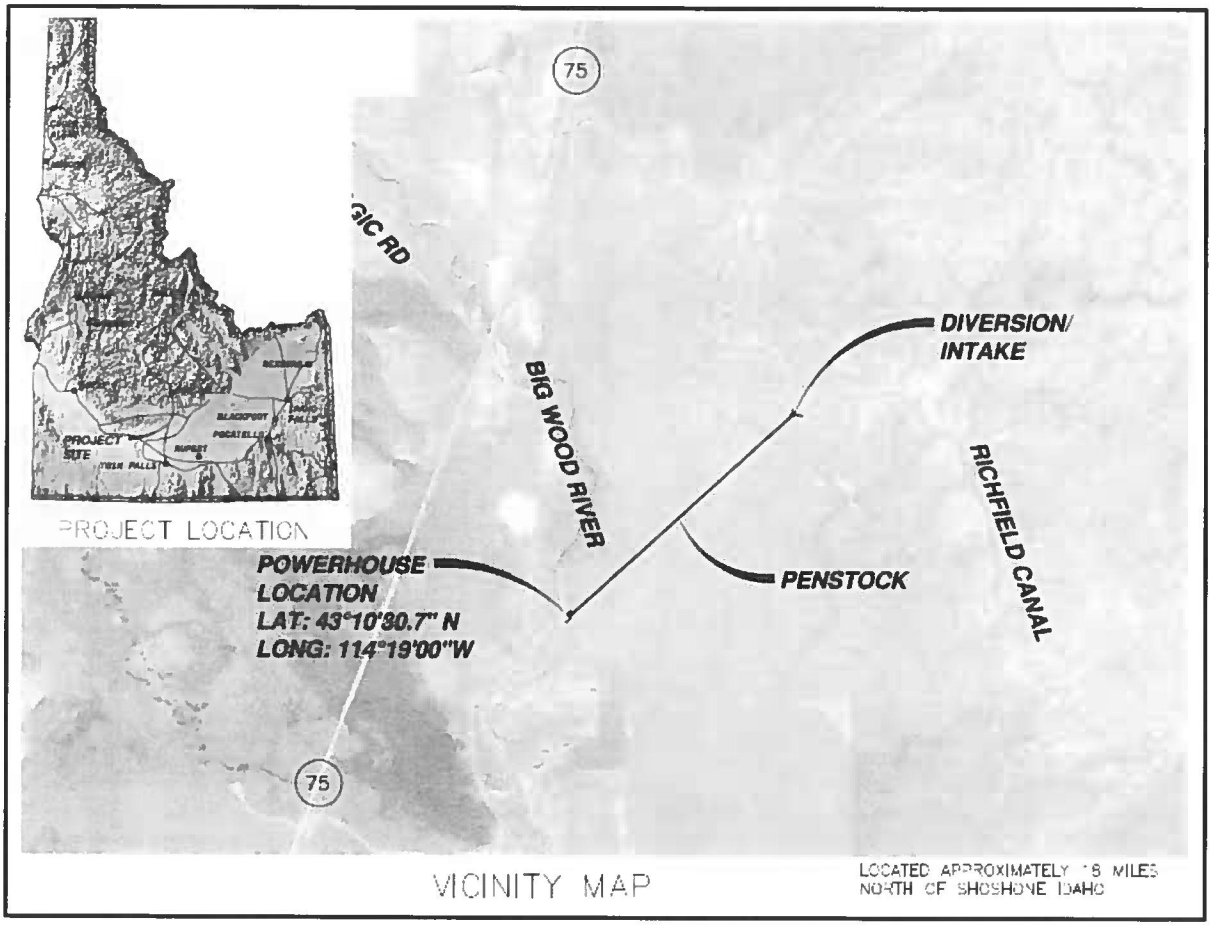

Figure 1 – Vicinity Map

TECHNICAL 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.

Existing Infrastructure

Currently 250 cfs of irrigation water associated with this project are released from Big Wood Canal Company's Magic Reservoir into the Big Wood River for approximately 7 miles before they are diverted into the Lincoln Bypass canal where it serves 8,481 irrigated acres. A portion of this 7-mile reach of the Big Wood River between the existing Richfield Diversion Structure and State Highway 75 has high transmission losses as studied and outlined in a 2012 Idaho Water Engineering report included as Attachment A.

Bypass System

The Rye Grass Bypass and Hydroelectric Project proposes to avoid this high transmission loss section of the Big Wood River by diverting irrigation flows into the existing Richfield Canal located parallel and upstream of the Big Wood River for approximately 5 miles. A new concrete intake structure and 5,950-foot-long, 5.8-foot-diameter steel pipeline will be built to return the irrigation flows to the Big Wood River just upstream of an existing diversion for the Lincoln Bypass canal. A new bypass structure with a gate will be constructed just downstream of the intake so flows can be correctly allocated to return to the Big Wood River or to continue down the Richfield canal. The intake structure will have a gate so the pipeline can be dewatered as needed. The intake structure will also have a trash screen and automatic trash rake to remove debris. A channel parallel to the pipeline will be constructed to bypass flows on the rare occasions the hydroelectric facilities need to shut off in an emergency which will prevent the Richfield Canal banks from overflowing. The Richfield Canal already has adequate freeboard to handle the increased flows from this project under normal operations so no improvements to the canal banks are required. The overall site plan is shown on Figure 2 below. The potential water savings are discussed in more detail in section E.1.1.

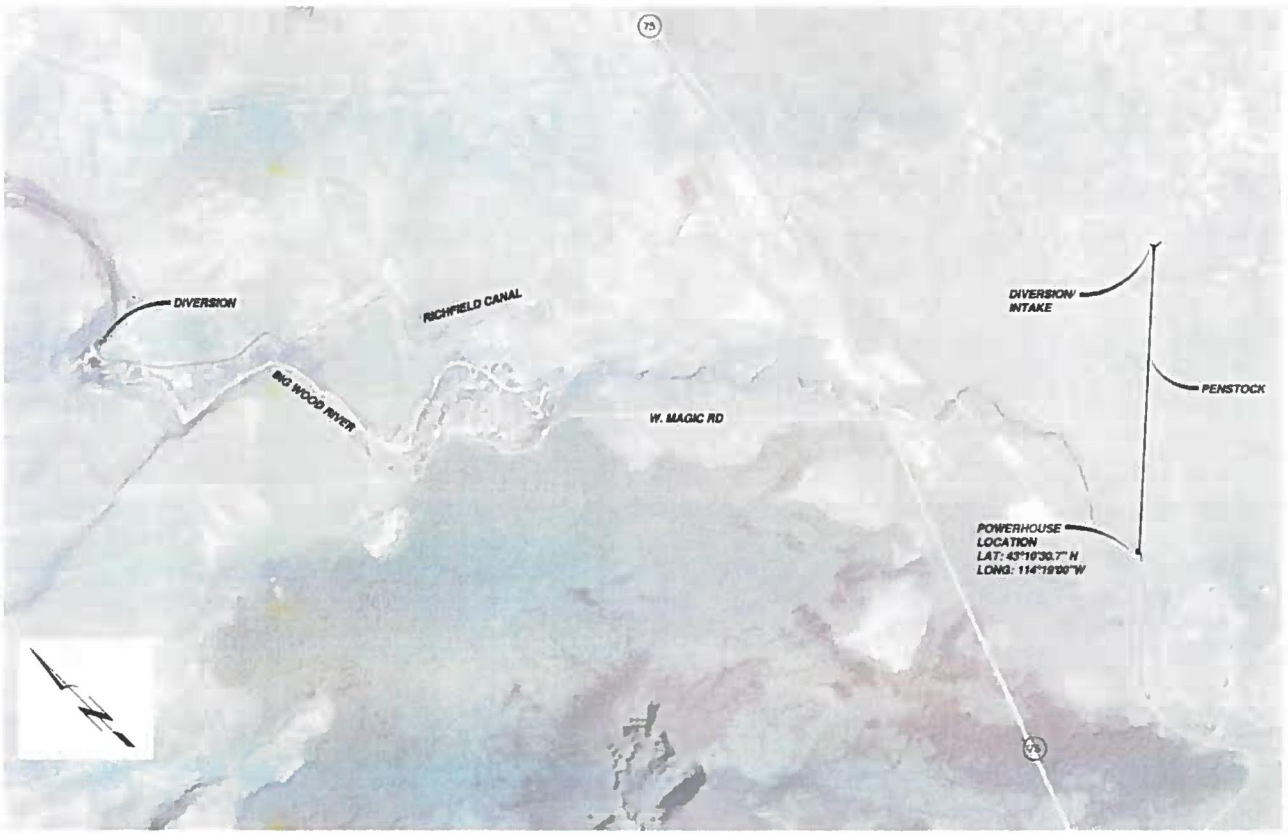

Figure 2 - Overall Site Plan (water flows left to right)

Hydroelectric Facilities

A new hydroelectric facility will be built at the end of the pipeline to utilize the 109-foot elevation drop for renewable power generation. A reinforced concrete powerhouse will be built at the end of the pipeline. The anticipated generation capacity, average annual generation, and benefits of green renewable energy are discussed in more detail in Section E.1.2.

Mechanical Equipment

Inside the powerhouse will be one 1,600 KW Kaplan Turbine and Synchronous Generator with a brushless excitor. The turbine wicket gates will operate hydraulically. The hydraulic power unit will be of American make – with accumulators for black shutdown. The governor will be digital. Level sensors (differential pressure) in the forebay will be utilized to provide information to the powerhouse programmable logic controllers (PLC) to maintain constant head in the upstream forebay and thus in the feeder canal.

Powerhouse Electrical Controls/Switchgear

Powerhouse controls will be utility grade. The switchgear/controls will be backed by 120 volt DC service battery system for operation of essential features during power outages, specifically turbine shutdown and maintenance of flow in the canal system. The control panel will be fitted

with an automatic telephone dialer to alert of alarm conditions. A dial-in signal will allow remote monitoring of the plant including critical variables (bearing temperature, voltage etc.) from any telephone.

Substation and Transmission Line

The power will be sold to Idaho Power Company. Idaho Power Company has an overhead 12.4 kV line approximately 1,600 feet from the powerhouse location. A new overhead line will be constructed to connect to the existing transmission line. A switchyard will be constructed at the powerhouse with a transformer capable of stepping up the power generated at 4,160 V to the interconnection voltage of 12.4 kV.

EVALUATION CRITERIA

E.1.1 Evaluation Criterion A: Quantifiable Water Savings

Up to 28 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.

1) ***Describe the amount of estimated water savings.*** *For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project. Please include a specific quantifiable water savings estimate; do not include a range of potential water savings.*

   The Rye Grass Bypass and Hydroelectric Project is anticipated to conserve 7,620 acre-ft annually.

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

   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 current losses are 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 known uses for the current losses.

   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?*

The seepage water is currently supporting a grove of cottonwood trees. Minimizing impacts to this habitat area will be considered during the preparation of the Environmental Assessment as part of Bureau of Land Management (BLM) easement process.

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

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

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

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

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

         An "Engineering Flow Measurement and Transmission Loss Report" was completed by Idaho Water Engineering, LLC in 2012 to measure the losses in this area of the Big Wood River (see Attachment A). Flow measurements were taken every day during the 2011 irrigation season (average water year) upstream and downstream of the area known for large transmission losses. Table 1 below shows the results of the measurements. The average transmission losses were 50 cfs or 23.0%. This resulted in losses of 8,318 acre-feet that irrigation season.

Table 1 - 2012 Transmission Loss Study Results

Date	Station 5 (near Richfield Canal Diversion) (cfs)	0.5 Miles Upstream of Highway 75 (cfs)	Transmission Losses (cfs)	Transmission Losses (acre-ft)	% Transmission Losses
7/14/2011	296	231	66	130	22.2%
7/15/2011	261	199	66	130	25.2%
7/16/2011	246	181	66	130	26.7%
7/17/2011	245	179	66	130	26.8%
7/18/2011	243	177	66	130	27.0%
7/19/2011	240	175	64	127	26.8%
7/20/2011	236	176	60	119	25.5%
7/21/2011	235	173	59	117	25.1%
7/22/2011	237	178	58	116	24.6%
7/23/2011	240	185	55	109	22.9%
7/24/2011	240	186	54	108	22.6%
7/25/2011	237	185	52	103	22.0%
7/26/2011	234	184	50	98	21.2%
7/27/2011	232	184	48	95	20.6%
7/28/2011	230	185	45	89	19.5%
7/29/2011	230	185	45	88	19.4%
7/30/2011	230	185	45	88	19.4%
7/31/2011	230	188	43	85	18.5%
8/1/2011	229	187	43	85	18.6%
8/2/2011	229	187	42	84	18.4%
8/3/2011	229	186	43	85	18.8%
8/4/2011	228	185	43	86	19.0%
8/5/2011	226	183	43	86	19.1%
8/6/2011	226	183	43	86	19.2%
8/7/2011	226	182	44	87	19.4%
8/8/2011	227	183	45	88	19.6%
8/9/2011	230	184	46	91	20.0%
8/10/2011	231	185	46	91	20.0%
8/11/2011	235	188	47	93	20.0%
8/12/2011	240	189	51	102	21.4%
8/13/2011	242	189	53	105	22.0%
8/14/2011	239	189	51	101	21.3%
8/15/2011	240	190	50	99	20.8%
8/16/2011	236	189	47	94	20.0%
8/17/2011	235	188	46	92	19.8%
8/18/2011	235	188	46	92	19.7%
8/19/2011	235	189	47	93	19.9%
8/20/2011	237	189	48	95	20.3%
8/21/2011	237	188	50	99	20.9%
8/22/2011	237	187	51	100	21.3%
8/23/2011	238	187	51	102	21.5%
8/24/2011	238	186	52	103	21.9%
8/25/2011	241	187	54	106	22.3%
8/26/2011	242	188	54	107	22.3%
8/27/2011	240	186	54	107	22.4%
8/28/2011	244	188	56	110	22.8%
8/29/2011	240	186	55	108	22.7%
8/30/2011	238	185	54	106	22.5%

Date	Station 5 (near Richfield Canal Diversion) (cfs)	0.5 Miles Upstream of Highway 75 (cfs)	Transmission Losses (cfs)	Transmission Losses (acre-ft)	% Transmission Losses
8/31/2011	240	186	55	109	22.8%
9/1/2011	240	186	54	107	22.5%
9/2/2011	236	184	52	103	21.9%
9/3/2011	236	185	51	102	21.7%
9/4/2011	234	183	51	101	21.7%
9/5/2011	233	184	49	98	21.2%
9/6/2011	233	184	49	97	21.1%
9/7/2011	229	181	47	94	20.7%
9/8/2011	218	173	47	94	21.8%
9/9/2011	210	166	47	94	22.5%
9/10/2011	208	165	47	94	22.8%
9/11/2011	208	165	47	94	22.8%
9/12/2011	207	15	47	94	22.8%
9/13/2011	207	165	47	94	22.9%
9/14/2011	204	164	47	94	23.2%
9/15/2011	201	162	47	94	23.6%
9/16/2011	200	163	47	94	23.6%
9/17/2011	201	163	47	94	23.6%
9/18/2011	200	163	47	94	23.7%
9/19/2011	195	160	47	94	24.3%
9/20/2011	184	151	47	94	25.7%
9/21/2011	181	150	47	94	26.1%
9/22/2011	180	149	47	94	26.3%
9/23/2011	178	148	47	94	26.6%
9/24/2011	180	150	47	94	26.3%
9/25/2011	174	147	47	94	27.2%
9/26/2011	180	153	47	94	26.3%
9/27/2011	177	152	47	94	26.7%
9/28/2011	175	151	47	94	27.1%
9/29/2011	174	150	47	94	27.2%
9/30/2011	174	150	47	94	27.2%
10/1/2011	174	152	47	94	27.1%
10/2/2011	174	153	47	94	27.2%
10/3/2011	174	154	47	94	27.3%
10/4/2011	173	156	47	94	27.3%
10/5/2011	101	100	47	94	47.0%
Average			50		23.0%
Total				**8,318**	

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.*

Flow measurements were taken every single day over the 2011 irrigation season. Detailed testing methods and results are shown in Attachment A. Please note that the study above was only for 3.4 miles or the 7 miles of the Big Wood River that will be bypassed. The remaining area is fractured basalt and has high seepage losses, but they have not been quantified at this time.

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 canal the water will be bypassed to the Richfield Canal for 5 miles. On May 25, 2022 BWCC/AFRD2 measured 575 cfs at the Richfield Canal Diversion (beginning of bypass). Approximately 11 miles downstream (6 miles downstream of the proposed project intake – end of bypass) the measurement was 564 cfs equating to a loss of 11 cfs or 1.9%. Due to the lack of robustness of this data, it was conservatively assumed that the 5 mile reach of the Richfield Canal that the water from this project would travel would result in the entire 1.9% of losses. This 1.9% loss was applied to the daily flows from the 2011 study and resulted in an annual loss of 697 acre-ft (see Table 2 below. Some water may need to remain in the Big Wood River to care for the local riparian areas that the bypass will affect. This will be determined as part of the Bureau of Land Management Easement Process and associated Environmental Assessment. No losses are anticipated from the steel pipeline. Therefore, the anticipated net water savings from this project would be 7,620 acre-ft annually.

Table 2 - Expected Post-Project Losses

Date	Station 5 (near Richfield Canal Diversion) (cfs)	Big Wood River Transmission Losses Avoided (acre-ft)	Richfield Canal Bypass Losses (1.9%) (acre-ft)	Net Water Savings (acre-ft)
7/14/2011	296	130	11	119
7/15/2011	261	130	10	121
7/16/2011	246	130	9	121
7/17/2011	245	130	9	121
7/18/2011	243	130	9	121
7/19/2011	240	127	9	118
7/20/2011	236	119	9	111
7/21/2011	235	117	9	108
7/22/2011	237	116	9	107
7/23/2011	240	109	9	100
7/24/2011	240	108	9	99
7/25/2011	237	103	9	94
7/26/2011	234	98	9	89
7/27/2011	232	95	9	86
7/28/2011	230	89	9	80
7/29/2011	230	88	9	80

Date	Station 5 (near Richfield Canal Diversion) (cfs)	Big Wood River Transmission Losses Avoided (acre-ft)	Richfield Canal Bypass Losses (1.9%) (acre-ft)	Net Water Savings (acre-ft)
7/30/2011	230	88	9	80
7/31/2011	230	85	9	76
8/1/2011	229	85	9	76
8/2/2011	229	84	9	75
8/3/2011	229	85	9	77
8/4/2011	228	86	9	78
8/5/2011	226	86	9	77
8/6/2011	226	86	9	78
8/7/2011	226	87	9	79
8/8/2011	227	88	9	80
8/9/2011	230	91	9	83
8/10/2011	231	91	9	83
8/11/2011	235	93	9	85
8/12/2011	240	102	9	93
8/13/2011	242	105	9	96
8/14/2011	239	101	9	92
8/15/2011	240	99	9	90
8/16/2011	236	94	9	85
8/17/2011	235	92	9	83
8/18/2011	235	92	9	83
8/19/2011	235	93	9	84
8/20/2011	237	95	9	86
8/21/2011	237	99	9	90
8/22/2011	237	100	9	91
8/23/2011	238	102	9	93
8/24/2011	238	103	9	94
8/25/2011	241	106	9	97
8/26/2011	242	107	9	98
8/27/2011	240	107	9	98
8/28/2011	244	110	9	101
8/29/2011	240	108	9	99
8/30/2011	238	106	9	97
8/31/2011	240	109	9	100
9/1/2011	240	107	9	98
9/2/2011	236	103	9	94
9/3/2011	236	102	9	93
9/4/2011	234	101	9	92
9/5/2011	233	98	9	89
9/6/2011	233	97	9	89
9/7/2011	229	94	9	85
9/8/2011	218	94	8	86
9/9/2011	210	94	8	86
9/10/2011	208	94	8	86
9/11/2011	208	94	8	86
9/12/2011	207	94	8	86
9/13/2011	207	94	8	86
9/14/2011	204	94	8	86
9/15/2011	201	94	8	86

Date	Station 5 (near Richfield Canal Diversion) (cfs)	Big Wood River Transmission Losses Avoided (acre-ft)	Richfield Canal Bypass Losses (1.9%) (acre-ft)	Net Water Savings (acre-ft)
9/16/2011	200	94	8	86
9/17/2011	201	94	8	86
9/18/2011	200	94	8	86
9/19/2011	195	94	7	87
9/20/2011	184	94	7	87
9/21/2011	181	94	7	87
9/22/2011	180	94	7	87
9/23/2011	178	94	7	87
9/24/2011	180	94	7	87
9/25/2011	174	94	7	87
9/26/2011	180	94	7	87
9/27/2011	177	94	7	87
9/28/2011	175	94	7	87
9/29/2011	174	94	7	87
9/30/2011	174	94	7	87
10/1/2011	174	94	7	87
10/2/2011	174	94	7	87
10/3/2011	174	94	7	87
10/4/2011	173	94	7	87
10/5/2011	101	94	4	90
Total		**8,318**	**697**	**7622**

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?*

Transit Loss Reductions = Average Annual Water Savings / River Mile Bypassed = 7,620 / 7.1 miles = 1,070 acre-feet per mile

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

Actual canal loss seepage reductions will be verified using the same methodology as the original study. The downstream measurement point will need to be moved to the Lincoln Bypass diversion structure where the bypassed water will return to the Big Wood River.

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

The new pipe is composed of steel with a cold tar enamel on the inside and a cold tar epoxy on the outside to resist corrosion, increase pipe longevity, and decrease water friction.

E.1.2. Evaluation Criterion B – Renewable Energy

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

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

Up to 20 points may be awarded for projects that include constructing or installing renewable energy components (e.g., hydroelectric units, solar-electric facilities, wind energy systems, or facilities that otherwise enable the use of renewable energy). Projects such as small-scale solar resulting in minimal energy savings or production will be considered under Subcriterion No. B. 2.

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

The capacity of the proposed project is 1,600 KW. There will be 109 feet of vertical drop to build water pressure in the new pipeline. The head losses are estimated to be 19 feet resulting in a net head of 90 feet. The design flow is 250 cfs. The capacity equation is shown below.

KW = [unit weight of water (lb/ft^3) * flow (cfs) * net head (ft) * turbine efficiency * generator efficiency * 0.746) / 550] * (1 – transmission/transformer losses)

KW = (62.4 lb/ft^3 * 250 cfs * 90 ft * 0.88 * 0.96 * 0.746)/550 * (1-0.005)

= 1,600 KW

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

The power generation can be calculated using the formula below and the KW formula in the section above. Note that the KW production varies throughout the year based on water flows available.

MWHr = KW * hours of generation / 1000

It is anticipated that the proposed project will generate an average of 3,670 MWHrs annually. This was calculated by using equation above and applying it to the last 5 years of daily flow records. Flow records dating back to 1964 were available, but it was more conservative to use the last 5 years because they reflect more recent irrigation demand trends (i.e. pivots) resulting in less water deliveries. See results of production model in Table 2 below. The excel spreadsheet where this daily data was calculated is available upon request.

Table 3 - Potential Hydroelectric Production (MWHrs)

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Total
2017	0	0	0	0	0	462	1,119	1,187	946	0	0	0	3,714
2018	0	0	0	127	991	1,049	1,118	1,125	764	0	0	0	5,174
2019	0	0	0	0	918	964	1,098	1,112	823	0	0	0	4,914
2020	0	0	0	42	831	904	991	1,099	38	0	0	0	3,905
2021	0	0	0	0	300*	365	0	0	0	0	0	0	664
Avg	**0**	**0**	**0**	**34**	**608**	**748**	**865**	**905**	**514**	**0**	**0**	**0**	**3,674**

*Production limited so at least 55% of the calendar year annual Net Energy during the months June, July, and August per Idaho Power Seasonal Hydro rules

The power from this project will be sold to Idaho Power under a standard Public Utility Regulatory Policies Act (PURPA) contract for seasonal hydropower. No negotiations are needed to secure this contract because this is a Qualifying Facility.

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

Not applicable.

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

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

  Hydropower is increasingly being recognized for its reliable, carbon-free contributions to the grid – with projects like this on existing water infrastructure having minimal environmental impacts. The Rye Grass Bypass and Hydroelectric Project will produce an additional 3,760 MWHrs annually of carbon-free energy. According to the EPA Greenhouse Gas Equivalencies Calculator this additional renewable energy generation is equal to a carbon dioxide-equivalent greenhouse gas emissions of 2,665 metric tons.

- *Expected environmental benefits of the renewable energy system.*

  As a non-water consuming, carbon-free resource, run-of-river hydroelectric projects have low impact on the surrounding water systems, but are very environmentally friendly. The Union of Concerned Scientists have recognized that run-of-river hydro is the most carbon-reducing of all renewable technologies. And, because it is not as intermittent as wind and solar, it allows for the inclusion of more of those resources to be integrated into the grid. This project would allow for an increase in what the plant can actually produce with available water, adding more carbon-free, stable energy to the grid and decreasing the need for fossil fuels – both in direct production and in balancing and allowing the addition of more wind and solar.

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

None.

- *Anticipated benefits to other sectors/entities*

  An additional benefit of this project is as a distributed energy source, decreasing transmission line losses. Currently, the energy required to power the large irrigation pumps in this rural agricultural area is carried over long distances, likely from a fossil fuel power plant. The farther the energy is transported, the higher the transmission energy losses.

  This hydroelectric facility's energy generation correlates directly with peak energy demand in the area. The facility's peak output is during the summer months when farmers are using high amounts of electricity to operate their irrigation pumps and residential/commercial buildings are using high amounts of electricity to operate air conditioners. This local consumption is well-matched to the facility's supply which increases the overall efficiency of the energy grid.

  Finally, the hydroelectric facility will economically benefit this rural, and economically disadvantaged area by purchasing many local supplies, hiring local electricians/mechanics during the rebuild and employing one full-time and one part-time operator.

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

  The hydroelectric facility will not consume any water.

E.1.2.2 Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

Up to 10 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 diversion.

The Rye Grass Bypass and Hydroelectric Project does not include increasing energy consumption efficiency.

E.1.3. Evaluation Criterion C—Sustainability Benefits

Up to 20 points may be awarded under this criterion. This criterion prioritizes projects that address a specific water and/or energy sustainability concern(s), including enhancing drought resilience, addressing the current and future impacts of climate change, and resolving water related conflicts in the region. In addition, this criterion is focused on the benefits associated with the project, including benefits to tribes, ecosystem benefits, and other benefits to water and/or energy supply sustainability.

Enhancing drought resiliency. *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that enhance drought resiliency, through this section and other sections above, consistent with the SECURE Water Act.*

Please provide information regarding how the project will enhance drought resilience by benefitting the water supply and ecosystem, including the following:

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

  This project would generate renewable, carbon-free energy. This would reduce reliance on fossil fuels for energy production. The resulting reduction in carbon emissions would contribute to combating climate change which would support ecological systems.

- *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).*

  See Section E.1.1. for details on water savings. Water savings from this project will remain in the Magic Reservoir for longer periods of time. The proposed project is in the Wood River Basin in South Central Idaho. The Wood River Basin is extremely flashy with about half the years suffering from flooding and half the years suffering from droughts. Magic Reservoir is the only surface storage available in the Wood River Basin. The Big Wood River below Magic Reservoir is becoming an increasingly popular fly-fishing Trout fishery according to Mike Peterson the fisheries director of the Magic Valley Region of the Idaho Fish and Game (208)324-4359. According to Mr. Peterson, Trout fishermen who flyfish the world-renowned Silver Creek Fishery just 25 miles from Magic Reservoir often fish the Big Wood River below Magic Reservoir when excessive area winds make fishing slow on Silver Creek. Extending the delivery season through efficiency projects keeps water in the reservoir longer which keeps the temperatures in the Big Wood River below Magic Reservoir colder. An extended season also keeps stream flows higher longer. Longer days of delivery and colder water temperatures create a better fishery.

- *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).*

  See section above. Specific projects impacts on species in the area will be evaluated during an environmental assessment.

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

  The project's ecosystem impacts will be evaluated during an environmental assessment.

- *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?*

  Yes, BWCC/AFRD2 have the storage water rights to reserve the saved water in the Magic Reservoir where they can better serve their water users, especially in drought years. The average days of delivery from Magic Reservoir is 100 days over the last 20 years with most years being extremes above 100 days and below 100 days. The delivery system below Magic Reservoir also suffers around 50% delivery losses system wide. If delivery losses could be cut in half due to efficiency improvement, it would mean the average delivery season in the future could possibly be extended to 125 days. The Rye Grass Bypass and Hydroelectric Project is the beginning of a concentrated effort to improve the duration of the delivery season and resiliency in the Wood River Basin. If the delivery season could be extended, the agriculture industry in the region could be more profitable.

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

This project is not intended to improve streamflows or aquatic habitat, therefore no plans to monitor improved streamflows or aquatic habitat benefits of the project have been proposed.

Addressing a specific water and/or energy sustainability concern(s). *Will the project address a specific sustainability concern? Please address the following:*

- *Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability, such as shortages due to drought and/or climate change, increased demand, or reduced deliveries.*

  The proposed project is in the Wood River Basin in South Central Idaho. The Wood River Basin is extremely flashy with about half the years suffering from flooding and half the years suffering from droughts. Magic Reservoir is the only surface storage available in the Wood River Basin. The average days of delivery from Magic Reservoir is 100 days over the last 20 years with most years being extremes above 100 days and below 100 days. The delivery system below Magic Reservoir also suffers around 50% delivery losses system wide.

- *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.*

Idaho produces 4.5 million MWh (36% of production) of non-renewable energy annually and produces almost 5.5 billion kg on CO2 per year. Idaho's energy consumption is about 248 million MWh, resulting in an annual energy deficit of about 48 million MWh. The burning of fossil fuels also adversely impacts air quality for many Idahoans, especially in Lincoln County. The utility in this area, Idaho Power, has set goals for 100-percent clean energy by 2045. (https://findenergy.com)

- *Please describe how the project will directly address the concern(s) stated above. For example, if experiencing shortages due to drought or climate change, how will the project directly address and confront the shortages?*

  The 7,620 acre-feet of annual conserved water from this project will help BWCC/AFRD2 reduce delivery losses and extend the irrigation season during years of drought. The 3670 MWHrs of annual renewable energy will reduce Idaho Power's reliance on fossil fuels by 2045 which is a known contributor to climate change.

- *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.*

  Conserved water from this project will remain in the Magic Reservoir using an existing storage water right. This water can be used to extend the irrigation season during years of drought.

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

  The water rights needed to use the conserved water in this manner already exist.

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

  The amount of conserved water that will be used for extending the irrigation season will depend on the water availability in Magic Reservoir from year to year. All of the water will be used during years of drought.

Other project benefits. *Please provide a detailed explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:*

(1) ***Combating the Climate Crisis:*** *E.O. 14008: Tackling the Climate Crisis at Home and Abroad, focuses on increasing resilience to climate change and supporting climate esilient development. For additional information on the impacts of climate change throughout the western United States, see:*

https://www.usbr.gov/climate/secure/docs/2021secure/2021SECUREReport.pdf. Please describe how the project will address climate change, including the following:

a. *Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.*

   Run-of-river hydroelectric projects produce carbon-free, renewable, non-water consuming energy while having a low impact on surrounding water systems. The Union of Concerned Scientists have recognized that run-of-river hydro is the most carbon-reducing of all renewable technologies. Additionally, hydroelectricity allows for integration of more intermittent energy sources such as wind and solar by providing reliable generation during low production conditions for wind and solar. Overall, an investment in carbon-free, renewable energy reduces the grid's reliance on fossil fuels that produce CO2, which is one of the leading causes of global climate change.

b. *Does this proposed project strengthen water supply sustainability to increase resilience to climate change?*

   The proposed project will strengthen water supply sustainability as discussed above which will allow the irrigators to be more resilient to future droughts caused by climate change. The project will increase resilience to climate change by generating power that does not produce CO2 and reducing the need to generate power from fossil fuels.

c. *Will the proposed project establish and utilize a renewable energy source?*

   Yes, the project will establish and utilize the Lincoln Bypass canal flows as a renewable energy source.

d. *Will the project result in lower greenhouse gas emissions?*

   The annual renewable energy production from the project will reduce the power grid's reliance on fossil fuels and lower greenhouse gas emissions. According to the EPA, Greenhouse Gas Equivalencies Calculator the estimated renewable energy generation for this project (3,670 MWh annually) is equal to 2,665 metric tons of carbon dioxide-equivalent greenhouse gas emissions.

(2) ***Disadvantaged or Underserved Communities:*** *E.O. 14008 and E.O. 13985 support environmental and economic justice by investing in underserved and disadvantaged communities and addressing the climate-related impacts to these communities, including impacts to public health, safety, and economic opportunities. Please describe how the project supports these Executive Orders, including:*

a. *Does the proposed project directly serve and/or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety through water quality improvements, new water supplies, new renewable energy sources, or economic growth opportunities.*

The finished project will directly serve an underserved community by providing economic growth opportunities. The largest industry in Lincoln County, Idaho is Farming. The 2019 Census shows that 15% of the Lincoln County workforce is employed in farming. The short water supply in 6 of the last 10 years has decreased profitability in the industry and decreases opportunities for the local community. The water and power conservation benefits of the project will help increase farming profitability and improve opportunities. The actual construction phase of the project will also provide economic opportunities by creating construction jobs in the area. Construction and Extraction occupations account for 7.85% of the jobs in Lincoln County.

b. *If the proposed project is providing benefits to a disadvantaged community, provide sufficient information to demonstrate that the community meets the disadvantaged community definition in Section 1015 of the Cooperative Watershed Act, which is defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the State, or the applicable state criteria for determining disadvantaged status.*

Median Household income in Lincoln County is $50,053 which is 85% of the Idaho household income of $58,915, so Lincoln County is considered a disadvantaged community.

c. *If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.*

The proposed project is in Lincoln County, Idaho. The 2020 U.S. Census shows that the population of Lincoln County, Idaho is 30.9% Hispanic. Hispanics can be considered an underserved community because the language barrier of older generations can prevent adequate services. The 2020 Census also states that 9.1% of the Lincoln County Population lives in poverty. Communities living in poverty can also be consider underserved because their income level limits their services. Lincoln County is also a rural county with a population of 5,342. Rural areas are

also often underserved, because they lack medical services as well as legal protection services.

(3) ***Tribal Benefits:*** *The Department of the Interior 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. Please address the following, if applicable:*

a. *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?*

Not applicable.

b. *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, or economic growth opportunities?*

The proposed project does not directly support tribal resiliency to climate change, but there are tribal lands in Northern, Southeast, and Southwest Idaho. Since climate change is not a localized event and may cover large areas, any reduction in energy demand in an area could affect the climate on a larger scale. Since the proposed project does address water and energy sustainability issues as described in Evaluation Criterion C: (Sustainability), the proposed project does support all people groups in the local area of Southern Idaho.

(4) ***Other Benefits:*** *Will the project address water and/or energy sustainability in other ways not described above? For example:*

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

No.

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

The local community will benefit from additional jobs during rehabilitation and completion of project facilities. Water users will benefit from conserved. Energy users will benefit from a local source of clean, renewable energy.

c. *Will the project benefit a larger initiative to address sustainability?*

Yes, the proposed project will benefit a larger initiative to address sustainability. Multiple water delivery organizations in the Wood River Basin are working together to solve the basin's water shortage issues. Through the winter of 2021/2022, the Wood River Basin Management Plan was developed through negotiations between ground water and surface water users. BWCC/AFRD2 was a part of those negotiations. An outcome of the plan was the development of the Conservation, Infrastructure and Efficiency Fund where funds are collected from water users and then redistributed to help build various conservation projects aimed at improving water delivery efficiencies.

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

Yes, the proposed project will help prevent a water related conflict. Water year 2021 was one of the driest on record in the Wood River Basin. Because of the severe drought, the Director of the Idaho Department of Water Resources curtailed ground water diversions for the first time in the state's history. Over 500 wells were curtailed. The curtailment brought about the Basin Management Plan and subsequent sustainability planning mentioned in the previous question. The proposed project is one of the projects developed from the sustainability planning.

E.1.4. Evaluation Criterion D – Complementing On-Farm Irrigation Improvements

Up to 10 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.*

A few nearby farmers may be able to utilize the new pressurized pipe for sprinklers or drip systems, but that has not been studied at this time.

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

No

- *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.*

  Not available at this time.

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

  Not available at this time.

Describe how the proposed WaterSMART project would complement any ongoing or planned on-farm improvement.

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

OR

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

  Not available at this time.

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.*

  Not available at this time.

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.

Not available at this time.

E.1.5. Evaluation Criterion E – Planning and Implementation

Up to 8 points may be awarded for these subcriteria.

E.1.5.1. Subcriterion E.1 – Project Planning

Points may be awarded for proposals with planning efforts that provide support for the proposed project.

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Does the project address an adaptation strategy identified in a completed WaterSMART Basin Study? Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place. Including a specific excerpt or a link to the planning document may also be considered where appropriate.

For more information on Basin Studies, including a list of completed basin studies and reports, please visit: www.usbr.gov/WaterSMART/bsp.

Provide the following information regarding project planning:

1) *Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.*

   No formal plans have been implemented, but BWCC/AFRD2 work very hard to prioritize funds for water saving projects in their jurisdiction and the boards of directors have agreed to prioritize this project for funding.

2) *Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*

   The delivery system below Magic Reservoir suffers around 50% delivery losses system wide. This project will conserve 7,620 acre-ft of water annually that will help meet BWCC/AFRD2's goal to reduce delivery losses by half.

3) *If applicable, provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed WaterSMART Basic Study or Water Management Options Pilot (e.g., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes).*

   Not applicable.

E.1.5.2. Subcriterion E.2 – Readiness to Proceed

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

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

- *Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description provided in Section D.2.2.4.; this section should focus on a summary of the major tasks to be accomplished as part of the project.*

The next steps for this project involve obtaining all necessary permits, easements, and agreements (see section below for details). Construction will begin in the fall after the irrigation canals have been drained for the season starting with excavation for the intake/bypass structure, pipeline, and powerhouse. Then the reinforced concrete intake/bypass and powerhouse structures will be constructed. The trash rack, trash rack drag chain, intake gate, and bypass gate will be installed through this process. The penstock will then be placed and welded between the intake and powerhouse structures. The turbine and generator will be installed along with any fabricated metal and ancillary equipment. Concurrently with the intake/powerhouse construction the transmission line and interconnection will be constructed by Idaho Power. The power plant will then be tested and commissioned.

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

  The project will require a BLM easement. An environmental assessment will be required as part of this process. It's anticipated this easement will take approximately 8 months to acquire. The project will then file for a FERC conduit exemption which is a very standardized process and usually takes 60 days to obtain. The project will also require an interconnection agreement with Idaho Power. This process requires interconnection studies and negotiations on what equipment will be necessary and takes approximately 1 year. A power purchase agreement with Idaho Power will be needed, but a standard PURPA contract for small seasonal hydropower so now significant amount of time is required to complete this.

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

  Sorenson Engineering, Inc. will design the project. Sorenson has designed 45 hydroelectric facilities and currently owns/leases and operates 20 facilities. At this time a production model for the hydroelectric facilities, hydraulic analysis of the existing Richfield Canal, and survey of the entire project area have been completed.

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

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

- *Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; 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?*

  The estimated project schedule is shown in Table 4 below.

Table 4 - Proposed Project Schedule

Activity	Start Date	End Date
Permitting, Easements, and Agreements		
Idaho Power Interconnection Agreement	Jan 2023	Dec 2023
Idaho Power – Power Purchase Agreement	Sept 2023	Nov 2023
BLM Easement	Jan 2023	Aug 2023
FERC Conduit Exemption	Sept 2023	Nov 2023
Project Design	Jan 2024	Aug 2024
Construction		
Excavate intake, pipeline, and powerhouse	Sept 2024	Dec 2024
Construct and powerhouse	Dec 2014	April 2025
Place and weld penstock	April 2025	July 2025
Install turbine and generator	May 2025	Sept 2025
Transmission and Interconnection	Feb 2025	Sept 2025
Testing and Commissioning	Oct 2025	Oct 2025

The expected timeline for environmental and cultural compliance was discussed with the Upper Snake Area Office. For the BLM easement an environmental assessment will be completed. Construction will not begin until September 2024. Therefore, it is anticipated that Reclamation's work for environmental compliance will be minimal and the timeline is favorable.

E.1.6 Evaluation Criterion F – Collaboration

Up to 6 points may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.

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

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

  There is widespread support from water users throughout the basin. As mentioned earlier in the application, the Wood River Basin Management Plan was developed over the winter of 2021/2022. The management plan was a cooperative effort of water users throughout the basin to solve basin wide problems. One of the outcomes of the management plan was the development of the Conservation, Infrastructure and Efficiency Fund. Municipals and Ground Water Districts contribute to the fund and monies from the fund can be used to improve delivery efficiencies throughout the system. At the time of this application, complete policies for fund distribution have not been developed, so no funds were requested from the fund for this project.

The Watermaster of Water District 37 which encompasses the Big and Little Wood River drainages in South Central Idaho wrote a letter of support included as Attachment B. BWCC/AFRD2 is the largest water user in their Water District and uses approximately 49% of the total water within the basin. With such a large percentage of delivery area, conservation efforts by BWCC/AFRD2 have a large impact on the basin.

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

  No.

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

  Yes, see Attachment B.

E.1.7. Evaluation Criterion G – Additional Non-Federal Funding

Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50% of the project costs. State the percentage of non-Federal funding provided using the following calculation:

Non-Federal Funding/Total Project Cost = 4,557,962/4,554,961 = 50%

E.1.8. Evaluation Criterion H – Nexus to Reclamation Project Activities

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

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

- *Does the applicant have a water service, repayment, or O&M contract with Reclamation?*

  Yes, AFRD2 has water service through the American Falls Reservoir, which is a Bureau of Reclamation project. AFRD2 has an O&M contract with Reclamation through the American Falls Reservoir.

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

  AFRD2 is a Reclamation contractor.

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

The proposed work will benefit AFRD2 which is a Reclamation project by improving the shared water supplies between BWCC/AFRD2

- *Is the applicant a tribe?*

  No.

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).

The project control's panel can display the maximum generational output (i.e. capacity) after the project is commissioned. A utility grade meter will measure actual annual generation of the project. This can be compared to the average annual generation prior to the improved control system. Actual canal loss seepage reductions will be verified using the same methodology as the original study. The downstream measurement point will need to be moved to the Lincoln Bypass diversion structure where the bypassed water will return to the Big Wood River.

PROJECT BUDGET

Budget Proposal and Funding Plan

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-part contributions, that are necessary to complete the project.

The Summary of Non-Federal and Federal Funding Sources is shown in Table 4 below. BWCC/AFRD2 will contribute 100% of the non-Federal cost share requirement. There are no third party in-kind costs. No cash requested or received from other non-Federal entities. No other pending funding requests currently.

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

Funding Sources	**Amount**
Non-Federal Entities	
1. BWCC/AFRD2	$4,554,962
2.	$0
3.	$0
Non-Federal Subtotal	$4,554,962
Requested Reclamation Funding	$4,554,961

The budget proposal should include detailed information on the categories listed below and must clearly identify all items of cost, including those that will be contributed as non-Federal cost share by the applicant (required and voluntary), third-party-in-kind contributions, and those that will be covered using the funding requested from Reclamation, and any requested pre-award costs.

The Total Project Cost is shown in Table 5 below.

Table 6 - Total Project Cost

Source	Amount
Costs to be reimbursed with the requested Federal funding	$ 4,554,961
Costs to be paid by the applicant	$ 4,554,962
Value of third-party contributions	$ 0
Total Project Cost	$ 9,109,923

Budget Narrative

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in Section B of the SF-424A. The types of information to describe in the narrative include, but are not limited to, those identified in the Budget Narrative Guidance attached to the Notice of Funding Opportunity (NOFO). Applicants may elect to use the Budget Detail and Narrative spreadsheet for their budget narrative (attached to NOFO). Costs, including valuation of third-party in-kind contributions, must comply with the applicable cost principles contained in 2 CFR Part §200, Section E – Costs Principles and be allowable (§200.403), allocable to the agreement (§200.405), and reasonable in amount (§200.404). Available at the Electronic Code of Federal Regulations (www.ecfr.gov).

The budget established for this project was prepared by the Project Manager, Ted Sorenson, P.E. The budget is based upon several past projects constructed, owned, and operated by Ted Sorenson, P.E. Sorenson has designed 45 hydroelectric facilities and currently owns/leases and operates 20 facilities. If selected for award, copies of quotes from past projects will be provided to support budgeted costs.

The budget detail and narrative are shown in Attachment C.

In addition, please ensure that the budget proposal includes any project costs that may be incurred prior to award. For each cost, describe: the project expenditure and amount; the data of cost incurrence; how the expenditure benefits the project. In no case will costs incurred prior to April 1, 2022, be considered for inclusion in the proposed project budget.

The budget proposal does not include any project costs that have been or may be incurred prior to April 1, 2022. No other pre-award costs are proposed at this time.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

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:

The proposed project will complete an environmental assessment as part of the process of obtaining a BLM easement. The project will comply with all environmental and cultural resource compliance requirements. Ground breaking activities are not scheduled until September 2024 so there will be adequate time to complete all this work.

REQUIRED PERMITS OR APPROVALS

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

The project will require a BLM easement. An environmental assessment will be required as part of this process. It's anticipated this easement will take approximately 8 months to acquire. The project will then file for a FERC conduit exemption which is a very standardized process and usually takes 60 days to obtain. The project will also require an interconnection agreement with Idaho Power. This process requires interconnection studies and negotiations on what equipment will be necessary and takes approximately 1 year. A power purchase agreement with Idaho Power will be needed, but a standard PURPA contract for small seasonal hydropower so now significant amount of time is required to complete this.

The Rye Grass Hydroelectric Rebuild Project does not include improvements any to Federal facilities.

OVERLAP OR DUPLICATION OF EFFORT STATEMENT

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

There is no overlap between the Rye Grass Bypass and Hydroelectric Project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel.

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

The Rye Grass Bypass and Hydroelectric Project proposal submitted for consideration under this program 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 – Federal or non-Federal.

CONFLICT OF INTEREST DISCLOSURE STATEMENT

Conflict of Interest Disclosure Per the Financial Assistance Interior Regulation (FAIR), 2 CFR §1402.112, you must state in your application if any actual or potential conflicts of interest exists at the time of submission.

No actual or potential conflicts of interest exists at the time of submission.

LETTERS OF SUPPORT AND LETTERS OF PARTNERSHIP

All U.S. states, local governments, federally recognized Indian Tribal governments, and nonprofit organizations expending $750,000 in U.S. dollars or more in Federal award funds in your organization's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse's Internet Data Entry System in accordance with 2 CFR §200 subpart F. U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

BWCC/AFRD2 was required to submit a Single Audit report for the most recently closed fiscal year (September 30, 2021). The EIN associated with that report is 82-0099260 or 82-0259993. The report is available through the Federal Audit Clearinghouse Website.

LETTERS OF SUPPORT

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

Stakeholders of the Rye Grass Hydroelectric Rebuild Project include the water users of BWCC/AFRD2. The BWCC/AFRD2 official resolution attached to this application can be considered a letter of support.

A letter of support the Water District Watermaster is included in Attachment B.

LETTERS OF PARTNERSHIP

Category B applicants must include 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 proposal (see Section C.1. Eligible Applicants). Letters of Partnership must be received by the application deadline for this NOFO—otherwise the applicant will be considered ineligible, and the proposed project will not be evaluated.

BWCC/AFRD2 is a Category A Applicant, therefore no letters of partnership are included.

OFFICIAL RESOLUTION

Include an official resolution adopted by the applicant'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 directions, governing body, or appropriate official who has reviewed and supports the application submitted.*
- *That the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.*

An Official Resolution verifying the information above and signed by the Presidents of Big Wood Canal Company and American Falls Reservoir District #2 will be sent to sha-dro-fafoa@usbr.gov after the August 1, 2022 board meetings, but before the 30 day post-application deadline.

UNIQUE ENTITY IDENTIFER AND SYSTEM FOR AWARD MANAGEMENT (SAM)

Reclamation will not make a Federal award to an applicant until the applicant has complied with all applicable Unique Entity Identifier (UEI) and SAM requirements and, if applicant has not fully complied with the requirements by the time the Reclamation is ready to make an award, Reclamation may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

Federal award recipients must also continue to maintain an active SAM.gov registration with current information through the life of their Federal award(s).

BWCC/AFRD2 is registered with System for Award Management (SAM). The Unique Entity Identifier is 070535414. BWCC/AFRD2 will continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency.