

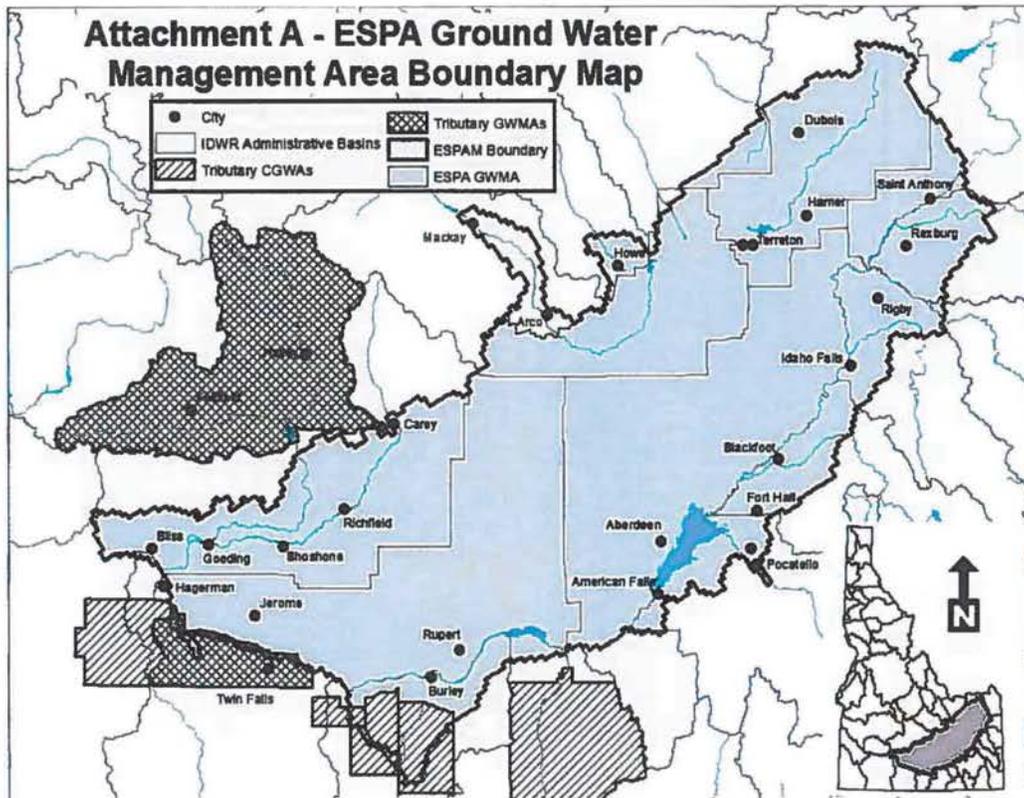
WaterSMART

Drought Response Program: Drought Resiliency Projects (FY 2019)

Funding Opportunity Announcement No. BOR-DO-19-F003
Funding Group I (up to \$300,000.00 per agreement)

Mid-Snake Recharge Injection Wells Project

Paul and Murtaugh, Idaho



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March 26, 2019

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Technical Proposal and Evaluation Criteria

Executive Summary

The executive summary should include:

- *The date, applicant name, city, county, and state*
- *A one paragraph project summary that specifies the work proposed, including how funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA*
- *State the length of time and estimated completion date for the proposed project*
- *Whether or not the project is located on a Federal facility*

Date: March 26, 2019
Applicant: A&B Irrigation District / Twin Falls Canal Company (Idaho)
Project Title: Mid-Snake Recharge Injection Wells Project

Project Summary:

The A&B Irrigation District (A&B) and Twin Falls Canal Company (TFCC) are joining to implement the Mid-Snake Recharge Injection Wells Project near the cities of Paul and Murtaugh, Idaho. The project consists of the construction of six (6) deep injection wells to recharge the Eastern Snake Plain Aquifer (ESPA) with available surface water from the Snake River. Four wells would be drilled adjacent to A&B's existing pipeline that extends off its Pumping Plant #2. Two wells would be drilled off of TFCC's Main Canal near Milner Dam. The wells would be connected to the conveyance systems by pipelines. The ESPA was recently designated as a groundwater management area by the Idaho Department of Water Resources (IDWR). Recharging the ESPA will improve ground water supplies and hydraulically connected springs and reach gains to the Snake River, thus helping improve water supplies in subsequent drought years. The proposed recharge will likely be implemented through the State of Idaho's recharge program conducted by the Idaho Water Resource Board (IWRB) which is an action specifically supported by the State's Comprehensive Aquifer Management Plan (CAMP) adopted by IWRB and the Idaho Legislature. The recharge program has a goal of 250,000 acre-feet annually and the increased capacity made available through this project will assist in meeting that goal and protecting against drought, both for groundwater and surface water users. Notably, reach gains in the American Falls reach specifically fill Reclamation's American Falls Reservoir, which is a critical storage reservoir on the Snake River for irrigation purposes. Increasing reliability of fill of this reservoir will benefit the entire Upper Snake Reservoir System and help enhance water availability for spaceholders in Reclamation's Minidoka and Palisades Projects.

Approximate Length: 24 Months
Completion Date: Begin Fall 2019 complete Summer/Fall 2021
Federal Facility: The Project is located on a Federal facility, Reclamation's Minidoka Project North Side Pumping Division (A&B Irr. Dist.) and on the Twin Falls Canal Company's irrigation project.

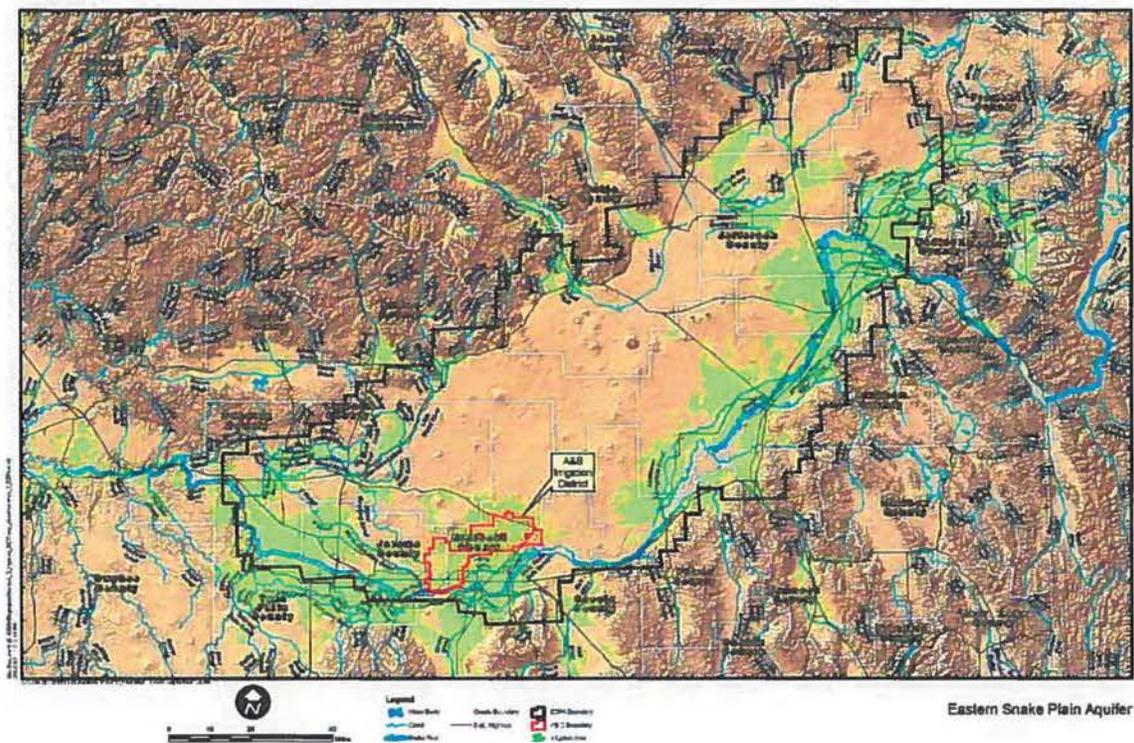
Background Data

A&B Irrigation District:

The A&B Irrigation District (A&B or District) was formed by the landowners of the Northside Pumping Division of the Minidoka Project, (Figs. 1 & 2) a federal irrigation reclamation project, to operate and maintain the project and to repay to the United States the construction costs of the project. The District was organized pursuant to Idaho law and entered into a repayment contract with the U.S. Bureau of Reclamation (Reclamation) in 1962. The District operates two units, Unit A with a surface water delivery system at the Snake River, and Unit B with deep groundwater wells in the Eastern Snake Plain Aquifer (ESPA). Reclamation provides reserved power to the District by contract through the Bonneville Power Administration's southern Idaho pool. The depth of ground water levels and available water supply is directly correlated to energy use within A&B.

Area Map

Figure 1- Regional Map (Southern Idaho, A&B Irrigation District)



A&B Irrigation District Information

Sources of Water Supply

The District relies upon surface water from the Snake River (storage and natural flow) as well as groundwater from the Eastern Snake Plain Aquifer (ESPA). The District diverts and delivers surface water from two pumping stations on the Snake River located above Milner Dam near Burley, Idaho. The District also delivers groundwater diverted from over 180 deep wells in the ESPA. Water is delivered through open laterals and/or pipelines depending upon the location.

To supplement natural flow rights, the District has water storage rights in American Falls and Palisades Reservoirs, which are both Reclamation facilities. Table 1 below summarizes the District's storage rights at these two Reclamation facilities.

Table 1. District Storage Rights at Reclamation Facilities

Storage Facility	A&B Storage Rights (acre-feet)	Total Facility Storage Capacity (acre-feet)
American Falls Reservoir	46,826	1,672,590
Palisades Reservoir	90,800	1,200,000

The District has both surface and groundwater rights and delivers water to the landowners upon demand. When a delivery system is limited by capacity the District goes "on allotment" and delivers a pro rata share of the available water to the original acres. The District's primary surface and groundwater rights are summarized in Table 2.

Table 2. District Primary Water Rights and Entitlements

Type	Source	Flow Rate or Volume	Priority Date
Natural flow	Snake River	267 cfs	April 1, 1939
Natural flow	Snake River	240 cfs ¹	November 21, 1955
Natural flow	Snake River	29.5 cfs	February 11, 2015
Groundwater	ESPA	1,100 cfs	September 9, 1948
Groundwater	ESPA	31 cfs	April 1, 1962

¹ Water right 01-2060 in the name of U.S. Bureau of Reclamation, used in combination with the surface water rights held in the District's name.

Current Water Uses, System Summary, and Water Delivery Summary

The District provides water for irrigation uses to a total irrigated land area of approximately 82,000 acres of highly fertile and productive agricultural land in Jerome and Minidoka Counties. The District's landowners primarily grow corn, wheat, barley, alfalfa hay, potatoes, sugar beets, dry beans, and peas. Information regarding the District's delivery systems from both the Snake River (Unit A) and the ESPA (Unit B) are generally described below.

The following is general information about the District's Unit A delivery system:

Area Irrigated	15,923.9 acres
Length of Main Canal	4.5 miles
Length of Pipelines	19 miles
Length of Laterals	49 miles
Number of Laterals	6
Number of Turnouts	159
Number of Water Users	180
Number of Watermasters	1
Number of ditchriders	3
Irrigation Season	March 15 – November 15
Diversion Rate	310 cfs (maximum at peak delivery)

The following is general information about the District's Unit B delivery system:

Area Irrigated	66,686.2 acres
Length of Laterals	74.4 miles
Length of Pipelines	33 miles
Number of Laterals	41
Number of Turnouts	1006
Number of Water Users	542
Number of Watermasters	1
Number of ditchriders	6
Irrigation Season	March 15 – November 15
Diversion Rate	(per well) 2 cfs to 12 cfs (4 cfs average)

Ground water levels have been recorded on Unit B regularly since the project was initiated in the 1950s. Long term ground water level data show a pattern of persistent and severe decline that has worsened in recent decades. Although levels have stabilized and increased in areas over the past few years, beginning in the 1970s, the ground water levels start on a downward trend with lower ground water levels during each subsequent dry period. The ground water level decline is the greatest in the western area of Unit B with recorded declines averaging about 30 feet with many wells showing declines of 50 to 60 feet and a few wells showing declines of greater than 60 feet. In the center of Unit B ground water level drawdown averages about 23 feet with a maximum drawdown of about 40 feet. In the eastern area of Unit B the average drawdown is about 27 feet with a maximum drawdown of about 40 feet.

The declining ground water levels in Unit B have caused impacts by reducing the saturated well interval and dewatering the well and pumps. The declines have also caused reduced pumping rates and reduced headgate deliveries to the landowners. As ground water levels decline in a well, more power is needed to pump water up from greater depths and the amount of water that can be pumped decreases (unless the pump motor size is increased and/or the pump configuration is improved). At some point, if ground water levels continue to decline, the pump bowls and intake may become dewatered and the pump may cavitate. Further, in some cases the declines may force the abandonment of a well. A&B abandoned 7 wells in the early 1990s and converted the lands to a surface water supply in order to maintain irrigation deliveries. Despite deepening efforts, including to depths over 800 feet, no additional water could be secured.

The declining ground water levels throughout the ESPA over time have also caused reductions in reach gains to the Snake River, particularly during summer months and peak times of the irrigation season. The declining reach gains have reduced water supplies to natural flow rights and storage supplies in the Upper Snake River Basin, notably at American Falls Reservoir. Maintaining and improving reach gains in the Snake River, including in the Near Blackfoot to Minidoka reach may also be important for water quality, fish and wildlife resources, and threatened or endangered species (Snake River physa, downstream of Minidoka Dam).

Since the A&B Irrigation District relies upon both surface and groundwater for irrigation purposes, maintaining and enhancing ground water levels is imperative to ensure a water supply for all landowners within the District. Further, maintaining sufficient aquifer levels is crucial for energy and pump efficiency across the irrigation project. Consequently, recharging water in good water years for subsequent use in drought years is a wise water policy for the District.

Twin Falls Canal Company:

TFCC was established in 1909 and is located in south central Idaho in Twin Falls County with its headquarters located in the City of Twin Falls. TFCC serves water users in Murtaugh, Kimberly, Hansen, Filer, Buhl, Castleford, and Twin Falls, with a total project service area of approximately 50 miles long by 15 miles wide.

Sources of Water Supply

The primary source of water supply available to TFCC is natural flow from the Snake River. Water is diverted at Milner Dam on the Snake River, regulated at Murtaugh Dam, and split between the High Line Canal and the Low Line Canal at the Forks Diversion. Murtaugh Lake, a reregulating reservoir on the canal system, is located approximately 8 miles downstream of Milner Dam.

To supplement natural flow rights, TFCC has water storage rights in Reclamation's Minidoka Project at American Falls and Jackson Lake Reservoirs. Table 3 summarizes TFCC storage rights and these two Reclamation facilities.

Table 3. TFCC Storage Rights at Reclamation Facilities

Storage Facility	TFCC Storage Rights (acre-feet)	Total Facility Storage Capacity (acre-feet)
American Falls Reservoir	151,185	1,672,590
Jackson Reservoir	97,183	847,000

Water Rights

TFCC has water rights for and delivers up to 3/4 miner's-inch per share. TFCC delivers a proportionate share of the water supply for each share of stock. TFCC water rights are summarized in Table 4.

Table 4. TFCC Water Rights and Entitlements

Type	Source	Flow Rate or Volume	Priority Date
Natural flow	Snake River	3,000 cfs	October 11, 1900
Natural flow	Snake River	600 cfs	December 22, 1915
Natural flow	Snake River	180 cfs	April 1, 1939

Current Water Uses, System Summary, and Water Delivery Summary

The TFCC system provides water for irrigation uses only to a total irrigated land area of 202,691 acres of highly fertile and productive agricultural land. TFCC's service area has not changed since the mid-1980s. TFCC has not expanded beyond its historical service area boundaries and has no plans to expand. Figure 3 (p. 11) shows the service area for the TFCC. The main crops produced on the farmland served by the TFCC are corn, wheat, barley, alfalfa hay, potatoes, sugar beets, dry beans, and peas.

Table 5. Summary of TFCC System

Category	Value
Area Irrigated	202,691 acres
Length of major canals	110 miles
Length of laterals*	1,000 miles
Number of laterals*	450

Number of water users	over 4,600
Number of shares	202,691
Number of service gates*	5,300
Irrigation Season	April 1-October 31
Diversion	Per demand up to 3,800 cfs

*Note: Approximations

Twin Falls Canal Company's natural flow water right was granted on October 11, 1900 for 3,000 cfs of water. Later natural flow water rights brought TFCC up to 3750 cfs of maximum diversion at Milner Dam on the Snake River. This natural flow water right is junior to most natural flow water rights above Blackfoot, as almost all of the canals above Blackfoot have water rights prior to 1900. Because of this relatively junior priority to Snake River water Twin Falls Canal Company has historically suffered numerous water years with late summer water shortages prior to the construction of Jackson Lake Dam (1915) and American Falls Dam (1927). To alleviate shortages TFCC purchased 250,000 acre feet of storage in these two reservoirs when they were completed.

Since that time TFCC annually diverts roughly 1.1 million acre feet and experienced very few water shortages until about the 1970s. From about 1960 to the present about 1 million acres of groundwater pumping was developed on the Eastern Snake River Plain and this groundwater use began steadily lowering groundwater levels and consequently also reduced flows from the artesian springs that supply a large part of TFCC's water supply. This reduction in spring flows and reach gains has resulted in TFCC using nearly all of its storage in many years, and in reduced allocations to TFCC farmers many times over the past 25 years. Allocations were reduced in 1992, 1994, 2001, 2002, 2003, 2004, 2005, 2007, and 2013.

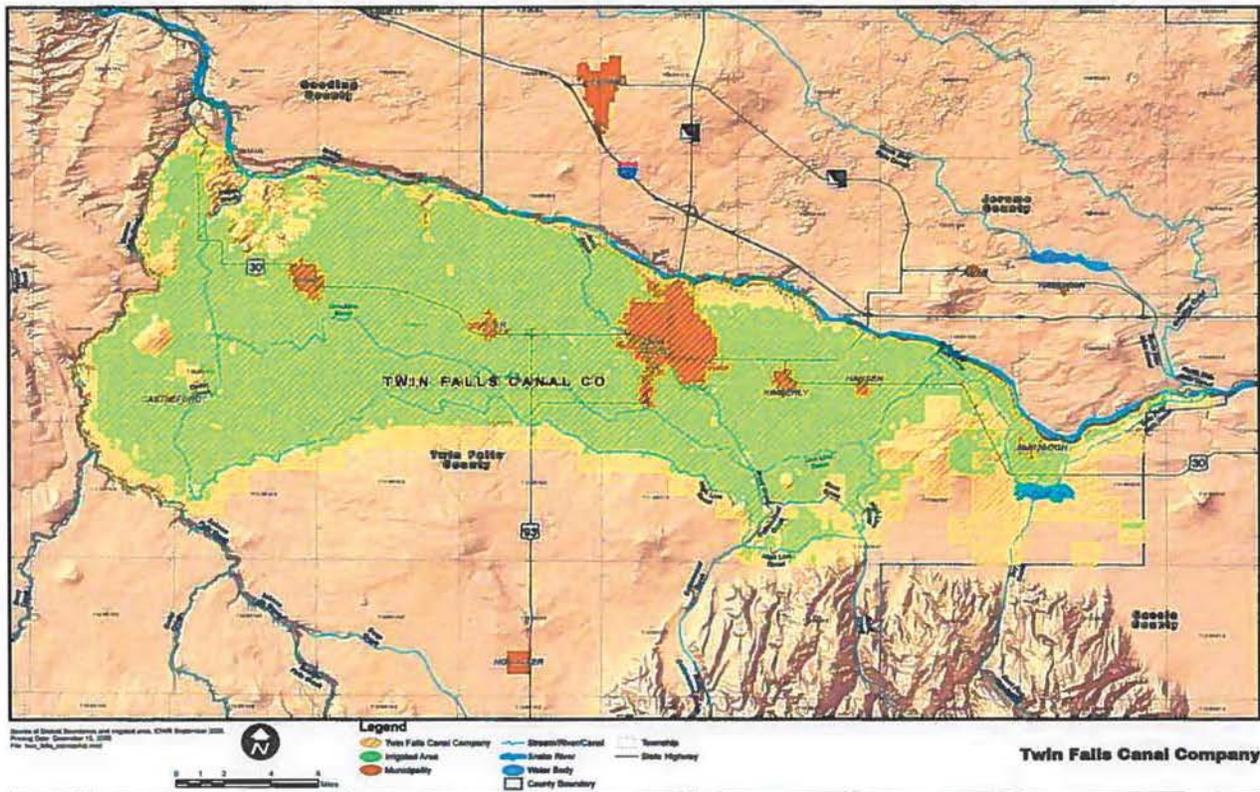
In 2005, a Water Call was filed against Groundwater Users on the Snake River Plain by TFCC and 6 other canal companies below American Falls. After years of court decisions, mostly favorable to TFCC, a Settlement Agreement was signed that required Groundwater Users to reduce pumping by 13%, and to supply 50,000 acre feet per year to the seven lower valley canal companies. TFCC used 30,000 acre feet of this water to avoid a severe late season shortage in 2015. In addition to the legal fight to protect our water rights, we have also spent millions of dollars in conservation and efficiency improvements to our system. These have included numerous automated structures improved with cost-share help from Bureau of Reclamation Water Conservation Program, and a \$1.5 million re-regulating reservoir TFCC built in 2013 with the help of a BOR Water Smart Grant. This recharge project will help protect against droughts by helping replenish surface water supplies that are tributary reach gains to the Snake River from the ESPA.

Working Relationships with U.S. Bureau of Reclamation

A&B entered into a repayment contract with Reclamation in 1962. A&B operates and maintains the Northside Pumping Division of the Minidoka Project (a Reclamation project). The District also holds storage space in American Falls and Palisades Reservoirs (operated by Reclamation). A&B receives its reserved power to operate the irrigation project from Reclamation. A&B works with Reclamation on an annual basis regarding ordering its power as well as operating and maintain the reservoirs that hold A&B's storage water supplies.

TFCC has a long, successful partnership record with Reclamation. Current ongoing partnerships with Reclamation include TFCC's storage rights in American Falls Reservoir and Jackson Reservoir. Historically, TFCC partnered with Reclamation through their Water Conservation Program, beginning in 1996, to complete numerous automation upgrades. Through this program, projects with a total cost of up to \$50,000 qualified for a 50 percent federal cost share. Through 2007, TFCC completed approximately 30 projects for a total cost of over \$1,000,000, with a federal match of over \$500,000. Additionally, TFCC was awarded a \$300,000 grant through the WaterSMART: Water and Energy Efficiency Grants for Fiscal Year (FY) 2013 (Reclamation Funding Opportunity Number R13SF80003) for the Kinyon Pond Reregulating Reservoir.

Figure 3: Twin Falls Canal Company Map



Project Location

Provide detailed information on the proposed project location or project area including a map showing the specific geographic location. For example, {project name} is located in {state and

The A&B Irrigation District portion of the Mid-Snake Recharge Injection Wells Project is located approximately 4 ½ miles west and 2 ½ miles north of the City of Paul in Minidoka County, Idaho. The latitude is 43°37'30.98"N and the longitude is 113°52'20.47"W.

The Twin Falls Canal Company portion of the Mid-Snake Recharge Injection Wells Project is located approximately 6 miles northeast of the City of Murtaugh in Twin Falls County, Idaho. The latitude is 42°31'17.06"N and the longitude is 114°02'57.35"W.

Fig. 4: Google Earth Image of the Project Locations Relative to Milner Dam on Snake River.



Technical Project Description and Milestones

The technical project description should describe the work in detail, including specific activities that will be accomplished. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal.

Summary

The project will consist of the development of six (6) deep injection wells into the ESPA, with four (4) off of an existing pipeline on the A&B project and two (2) off the TFCC main canal near Milner Dam. Pipelines will be installed off of each delivery system to carry the water directly to the injection wells. Both A&B and TFCC have extensive experience in trenching and installing the necessary pipelines and equipment needed to convey the water to the wellheads. The well drilling will be conducted by a local licensed well driller. A&B and TFCC will provide the necessary designs for the project.

Milestones would include completion of NEPA compliance (likely 6 months), purchase of all materials (likely 1-2 months) and then actual construction and drilling of the wells, which would likely be completed within an 18-month timeframe, depending upon the driller's availability and coordinating with A&B and TFCC crews. A&B and TFCC will budget for the non-federal funds and have those available as needed throughout the course of the project.

Recharge Wells on A&B Irrigation District

The portion of the project being proposed on the A&B project would develop four (4) new 12" deep well recharge injection wells and the installation of two (2) 12" PVC pipelines of approximately 700' each and one 15" PVC 1400' pipeline that would connect the other two wells in series.

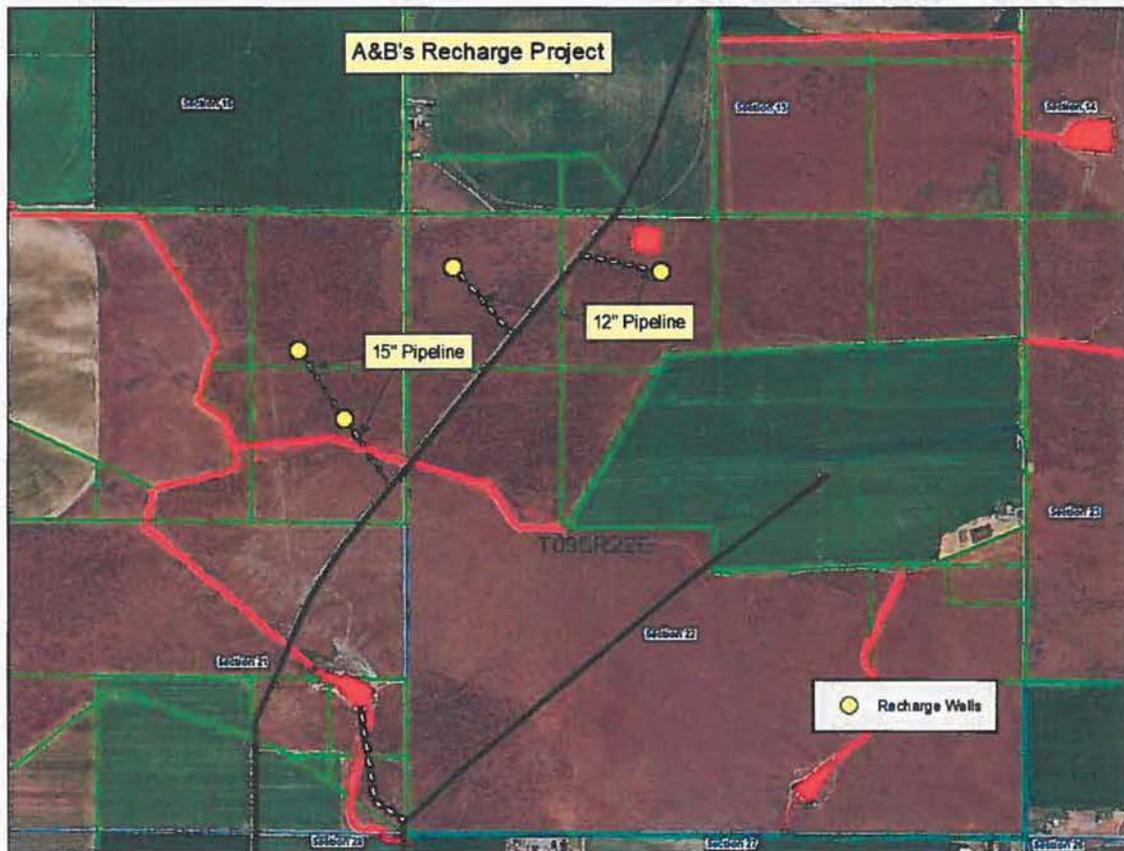
A&B currently has an existing 30" surface water delivery PVC pipeline at this location. The plan would be to tap into this existing pipeline in three locations and install galvanized steel repair fittings that would accommodate the connecting of the new 12" and 15" sub-feeder pipelines. These new lines would be buried to the location of the new recharge injection wells to be drilled. At the point of connection with the wells, galvanized steel transitions would be constructed to allow the recharge water to be measured at the point of connection to the recharge wells.

All the pipelines installation would be performed by A&B Irrigation District crews and equipment along with the construction of the pipe metal transitions. The drilling of the recharge wells would be contracted out to a local licensed well driller.

The timing of the recharge would typically be early to mid-March to the end of May depending on the Idaho Water Resource Board's recharge water right being in priority and hard freezing temperature conditions to allow a safe operation of the pipeline system.

When in operation the project design would allow for a maximum injections flow rate of 30 cfs.

Figure 5: Recharge Injection Wells on A&B Project



Recharge Wells on TFCC Project

As for the portion of the project on the Twin Falls Canal Company, TFCC will be building all-weather access roads, clearing, grading and preparing the site, and installing two new headgates into the TFCC main canal to supply water to the pipelines to the two large injection wells. TFCC crews will also be trenching, installing and backfilling approximately 300 ft of 20" 100 psi underground pipe from the two headgates to the two (2) 20" injection wells. The drilling of the recharge wells would be contracted out to a licensed well driller. The rest of the in-kind services will be surveying, project inspection, bookkeeping. TFCC crews will assist with the well drilling, welding, and flow meter installation as needed.

Recharge at this site of the project would typically occur from early November through late spring (likely May and June some years).

Figure 6: Recharge Injection Wells on TFCC Project



Performance Measures

All applicants are required to propose a method of quantifying the benefits of their proposed Project once it is implemented. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of the Project.

A&B and TFCC will measure performance by measuring all water diverted and recharged at the six (6) injection wells. Water measurements are reported to both Water District 01 and IWRB. Benefits will be quantified by groundwater modeling with IDWR's Eastern Snake Plain Aquifer Model (ESPAM 2.1) and actual measurements of ground water levels. IWRB has modeled various sites on the ESPA, the well sites for this project will be similar to MP 31, Lake Walcott, and SWID. See **Appendix E**. Recharge accomplished through IWRB's recharge program is tracked daily and weekly and monthly reports are compiled by IWRB staff.

Evaluation Criteria

Evaluation Criterion A: Project Benefits (40 points)

Up to 40 points may be awarded based on the expected drought resiliency benefits of the proposed project. Proposals containing a well-supported and detailed description of both quantifiable and qualitative benefits will receive the most points under this criterion.

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

This project is expected to recharge approximately 14,800 acre-feet (AF) annual volume to benefit groundwater levels thereby increasing the Eastern Snake Plain Aquifer (ESPA) and hydraulically connected surface water supplies to be used in drought years. The ESPA has been historically overdrawn, resulting in lowered groundwater levels and reach gains to the Snake River and springs. In drought years, the drawing down of the ESPA is exacerbated. By injecting available surface water (typically flood waters) from the Snake River or localized flood waters in excess water years, this project will help fortify the ESPA region's water supply and prevent wasting of water that is available in good water years. Once the infrastructure is in place, the project can recharge water for as many years as there is water available. There is no foreseeable sunset on this project. Water that is recharged is expected to stay in the aquifer as modeled in IWRB's technical report (see **Appendix E**) as the locations of this project are close to the MP 31, Lake Walcott, and SWID modeling locations.

- *Will the project make additional water supplies available?*

Yes, this project is expected to make additional water supplies available. By utilizing flood waters from the Snake River or localized flood waters, this project would recharge water that would otherwise flow downstream and remain unused. Water recharged in the aquifer is expected to be available in subsequent years, including during drought conditions.

- *If so, what is the estimated quantity of additional supply the project will provide and how was this estimate calculated?*

When in operation the project design would allow for an anticipated maximum injection flow rate of 30 cfs at the A&B wells. If recharge could occur for 60-75 days when the Idaho Water Resource Board's recharge right is in priority, at 30 cfs it would equal 3,500 to 4,500 acre feet of recharge annually, with an average of 4,000 acre-feet. TFCC's portion of the project would consist of two large (20") injection wells, each capable of recharging 15 cfs, for a total of 180 days per year when in operation. This project would equal 10,800 AF in average annual recharge volume. The above estimates are based upon 1 cfs = 2 acre-feet per day.

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

N/A. Water recharged to the aquifer is available to A&B's wells as well as other groundwater users in the region. Water not diverted is expected to increase area spring flows and reach gains to the Snake River, where the water will be diverted by surface water users including TFCC and A&B.

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

Although the total water recharged (about 14,800 AF/yr) may not represent a large part of either A&B's or TFCC's total water supplies, the water is important in drought years, particularly if it helps A&B groundwater wells or TFCC natural flow supplies in the Snake River, which in drought years are made up wholly of reach gains from the aquifer during most of the irrigation season.

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

This project will improve the management of water supplies by making use of otherwise wasted flood waters and water during excess water years. This otherwise wasted water will be used to help stabilize the ESPA which has been historically overdrawn.

- *If so, how will the project increase efficiency or operational flexibility? N/A*
- *What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? N/A*
- *How will the project increase efficiency or operational flexibility? N/A*
- *What percentage of the total water supply does the water better managed represent? How was this estimate calculated? N/A*
- *Provide a brief qualitative description of the degree/significance of anticipated water management benefits. N/A*

- *Will the project make new information available to water managers? If so, what is that information and how will it improve water management? N/A*
- *Will the project have benefits to fish, wildlife, or the environment? If so, please describe those benefits.*

See answer to Environment/Wildlife Projects below and Evaluation Criterion C: Environment.

Environmental/Wildlife Projects

- *What are the types and quantities of environmental benefits provided, such as the types of species and their numbers benefited, acreage of habitat improved, restored and protected, or the amount of flow provided? How was this estimate calculated?*
- *What is the status of the species of interest (i.e. endangered, threatened, etc.)? How has the drought impact the species?*

The Banbury Springs Limpet, an endangered species, and the Bliss Rapids Snail, a threatened species, both rely upon tributary spring flows from the Eastern Snake Plain Aquifer in the Thousand Springs area. In years of drought the spring flows are reduced thereby impacting not only the habitat itself, but also the water quality of the springs no longer diluted through sufficient quantity. Recharging available water into the aquifer will benefit spring flows, particularly during drought years.

- *If the proposed project will benefit federally listed threatened or endangered species please consider the following elements:*
 - *Is the species subject to a recovery plan or conservation plan under the ESA?*
 - *What is the relationship of the species to water supply?*
 - *What is the extent of the proposed project that would reduce the likelihood of listing, or would otherwise improve the status of the species?*
 - *Is the species adversely affected by a Reclamation project?*

Both species are subject to a recovery plan developed by FWS under the ESA. In both recovery plans, stabilizing water levels has been identified as necessary for the survival and protection of the species. The project would increase the water available as habitat for the endangered species. Recharging water into the ESPA, which is hydraulically connected to the relevant spring flows, helps stabilize water availability at the springs in drought years.

Evaluation Criterion B: Drought Planning and Preparedness (15 points)

For purposes of evaluating this criterion, please:

- *Attach a copy of the applicable drought plan, or sections of the plan, as an appendix to your application. These pages will not be included in the total page count for the application.*

See **Appendix F** – ESPA CAMP Plan.

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

In 2006, the Idaho Legislature found that “extended drought, changes in irrigation practices, and ground water pumping have resulted in reduced spring discharges and reach gains from the ESPA” and “have resulted in insufficient water supplies to satisfy existing beneficial users.” 2006 Idaho Sess. Laws 1392 (S.C.R. No. 136). The Legislature then requested the creation of an aquifer management plan. The resulting ESPA Comprehensive Aquifer Management Plan (CAMP) states that a “proactive management of water supplies will help address variability in climatic conditions, including drought.” One of the main objectives of CAMP is to improve aquifer levels with a focus on stabilization and potential enhancement. Without these efforts there is an increased likelihood of ground water curtailment resulting from insufficient water availability. This project goes toward providing additional quantities for recharge to improve aquifer levels thereby bolstering groundwater supplies helping fortify Idaho against future droughts.

The ESPA CAMP is adopted by IWRB and the Legislature as part of the State Water Plan as well. Groundwater recharge is a specific tool to address drought, as noted in the SWP.

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

Yes. The Idaho Water Resource Board (IWRB) was tasked with developing the ESPA CAMP by the Idaho State Legislature. IWRB created a framework which called for an advisory committee to prepare and recommend a plan to the IWRB. In collaboration with the Governor of Idaho, the IWRB appointed stakeholder representatives to the ESPA Advisory Committee. All meetings were open to the public and all materials were freely available to ensure the process was transparent, inclusive, and collaborative.

- *Does the drought plan include consideration of climate change impacts to water resources or drought?*

Yes. As stated above, the ESPA CAMP recognizes that the proactive management of water supplies will help address variability in climatic conditions. CAMP also sets forth an adaptive management strategy that can change to meet uncertain future conditions, like those posed by climate change. CAMP is focused on long-term water supply management which aims to stabilize and improve aquifer levels, spring flows, and river flows across the Eastern Snake Plain.

The Idaho State Water Plan also explicitly addresses climate variability and emphasizes the need to plan for the potential impacts of climate variability including increased surface and ground water storage. See **Appendix G** (Excerpts of State Water Plan).

- *Describe how your proposal drought resiliency project is supported by and existing drought plan.*

One of the explicit objectives of CAMP is to increase recharge to the aquifer. This project seeks to use recharge waters, and flood waters to help stabilize the ESPA.

The Idaho State Water Plan calls for an increase in aquifer recharge to enhance ground and surface water supplies, which will help maintain desirable aquifer levels. The Plan states that recharge can be used as an adaptive mechanism for minimizing the impacts of variability in climate conditions resulting from climate change. This project increases ground water storage.

- *Does the drought plan identify the proposed project as a potential mitigation or response action?*

CAMP does not address specific projects as potential mitigation, but, as stated above, one of the main objectives is to increase recharge to the aquifer. This plan fits squarely within that stated objective and provides additional capacity to recharge the ESPA at critical locations.

- *Does the proposed project implement a goal or need identified in the drought plan?*

Yes, the projects propose increasing recharge to the ESPA, one of the identified objectives in CAMP.

- *Describe how the proposed project is prioritized in the referenced drought plan.*

This project would fall under one of the five stated objectives of CAMP. Managed aquifer recharge is the second water budget adjustment mechanism listed in CAMP. Reducing withdrawals from the ESPA and increase recharge activities are key to long-term stability in the region.

Evaluation Criterion C: Severity of Actual or Potential Drought Impacts to be addressed by the Project (15 points)

Up to 15 points may be awarded based upon the severity of actual or potential drought impacts to be addressed by the project. Proposals that address more urgent needs and more severe drought impacts will receive higher priority consideration on this criterion than proposals that address less significant needs and impacts.

Describe the severity of the impacts that will be addressed by the project:

Agriculture:

Without any action, Idaho foresees an escalation of conflict between water users. There will be an increased likelihood of ground water curtailment and litigation at great expense to the agriculture industry, as food processing and aquaculture facilities depend on an ample supply of ground water. More scarcity in the water supply will increase the

costs for Idaho's agriculture sector which will ripple through the economy limiting growth and adversely impacting the economy of the state. Agriculture is the largest segment of the local economy and the largest consumptive user of water. The value of the goods and services produced in the ESPA region was estimated at \$14.9 billion in 2012, a value of approximately 33 percent of all the goods and services produced in the State of Idaho. Idaho's Magic Valley region, much of which is within the ESPA is ranked as a top 12 U.S. manufacturing community, and Idaho is the 3rd largest milk producing state in the country. Idaho's aquaculture industry raises 75% of the nation's trout. Drought would not only harm all of these sectors, but the impact to trout is two-fold because of the recreational value of the industry as well.

Environment:

Springs discharging from the ESPA sustain fish and wildlife habitat and provide water quality benefits. Without sufficient recharge activities, in drought years, these springs could run dry, reducing or even eliminating habitat for Idaho's fish and wildlife. The Bliss Rapids Snail, a threatened species, and Banbury Springs Limpet, an engendered species, both rely on sufficient flows from aquifer-fed springs. The U.S. Fish and Wildlife Service has recommended stabilizing water levels as part of the recovery plan developed to protect these species. Aquifer recharge activities, like this project will help stabilize the water levels and protect these endangered species' habitats. Furthermore, there is a direct, positive correlation between increased water quantity and water quality. The increase quantity serves to dilute the water supply lessening the impacts of pollutants. In drought years, without action to recharge the ESPA, there will be less water quantity thereby increasing the impact of pollutants on fish and wildlife.

Hydropower:

Hydroelectric power generation are also dependent of river flows that are augmented and sustained by sufficient ESPA groundwater levels. Without action, water will become more expensive for industry which will result in increased power costs causing limited opportunities for economic and community growth. Hydropower provides the bulk of Idaho's power, contributing significantly to the state's low electric rates. Hydropower from the ESPA-Snake River system alone provides roughly half the state's electricity. Without drought resiliency projects like aquifer recharge, the flows in the Snake River, and other hydropower sources will decline thereby causing Idaho to rely of less sustainable and cheap energy sources. This will increase costs across the board.

Recreation and Tourism:

During previous years, drought was so severe that the Idaho Department of Fish & Game called for a salvage order which allowed those with an Idaho fishing license to catch, using any means possible, as many fish as they can. This was in response to a drought that would have dried up the streams, killing all the fish therein. Droughts can impact tourism in southern Idaho too as depleted river flows impact boating, fishing, and other aquatic activities.

- *Describe existing or potential drought conditions in the project area.*

Idaho has been victim to several intense droughts over the past couple decades. The U.S. Drought Monitor found that the longest drought in Idaho lasted 258 weeks starting on January 30, 2001 and ending on January 3, 2006. This drought peaked with D4 drought in December 23, 2003 affecting 40.78% of land in Idaho. D4 is exception drought which results in widespread crop and pasture losses, and shortages of water creating water emergencies. The most recent serious drought happened in 2013 and ended in 2016, which culminated in major crop and pasture losses and widespread water shortages and restrictions in use. The ESPA Region was equally impacted in these recent droughts, and the threat of future droughts is always present.

Because of water resource scarcity, the Idaho Department of Water Resources (IDWR) designated the ESPA as a Ground Water Management Area (GWMA), which represents an aquifer approaching a “critical condition.” A copy is attached as **Appendix H**. Within that Order, IDWR stated that the ESPA storage and spring discharges declined due to ground water pumping, decreased incidental recharge, and droughts. (Order at 7). Between 1952 and 2013, the ESPA storage decreased by 13 million AF, and spring flows that provide habitat for the endangered and threatened Banbury Springs Limpet and Bliss Rapids Snail, decreased by 1,500 cfs. *Id.* Just between 1980 and 2013, the aquifer lost six million AF. *Id.* at 8.

- *Is the project in an area that is currently suffering from drought or which has recently suffered from drought? Please describe existing or recent drought conditions, including when and the period of time that the area has experienced drought conditions (please provide support for your response (e.g., reference a recent climate change analysis, if available).*

As recently as August 2018, about 31 percent of Idaho experienced a moderate drought. The National Oceanic and Atmospheric Administration recently issued a climate prediction showing a worsening outlook for drought in this coming summer.

Evaluation Criterion D: Project Implementation (10 points)

Up to 10 points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement. Applicants that describe a detailed 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. Please also see Section C.3.3 regarding eligible lengths of projects for this FOA.

- *Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

It is expected that both portions of the project could proceed during the non-irrigation season, beginning in the fall of 2019. A&B will work with Reclamation to complete NEPA compliance work as well. The well drilling will have to be completed with an available well driller. It is expected that the trenching, piping, connections to the delivery systems, and well drilling can all be

completed within two (2) years. The project may be phased depending upon the well driller availability.

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

Both Twin Falls Canal Co. and A&B Irrigation District will need to apply for injection well permits with Idaho Department of Water Resources.

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

A&B and TFCC will complete the necessary design work for the diversion points and pipelines to the wells. A&B and TFCC have extensive experience completing similar projects and will complete the necessary designs for each portion of the project.

- *Describe any new policies or administrative actions required to implement the project. N/A*
- *Describe how the environmental compliance estimate was developed. Has the compliance costs been discussed with the local Reclamation office?*

The NEPA compliance estimate was provided by local Reclamation staff at the Heyburn, Idaho office. The estimate was provided based upon similar prior projects.

Evaluation Criterion E: Nexus to Reclamation (10 points)

Up to 10 points may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity. Describe the nexus between the proposed project and a Reclamation project or activity, including:

- *How is the proposed project connect to a Reclamation project or activity?*

The proposed wells on the A&B portion of the project would be located on Reclamation withdrawn lands for the Minidoka Project North Side Pumping Division.

- *Will the project benefit any tribe(s)?*

Yes. Waters recharged that improve spring flows and reach gains in the American Falls area will benefit the Shoshone-Bannock Tribes.

- *Does the applicant receive Reclamation project water?*

Yes, both A&B and TFCC are spaceholders in Reclamation projects.

- *Is the project on Reclamation project lands or involving Reclamation facilities?*

Yes. The proposed wells on the A&B project would be located on Reclamation withdrawn lands.

- *Is the project in the same basin as a Reclamation project or actives?*

Yes. The project is located in the Upper Snake River Basin where Reclamation has several projects.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

The A&B portion of the project is tied to Reclamation since it will be completed on Reclamation's withdrawn lands located in the Minidoka Project North Side Pumping Division (i.e. the A&B Irrigation District). The Applicant is the irrigation district that operates and maintain the project through its contract with Reclamation. The TFCC portion of the project is tied to TFCC that is a Reclamation spaceholder in the Minidoka Project (American Falls and Jackson Lake reservoirs). The project will benefit Reclamation storage facilities in the Upper Snake River Basin above Milner Dam.

Evaluation Criterion F: Department of the Interior Priorities (10 points)

1: Creating a conservation stewardship legacy second only to Teddy Roosevelt

The project supports a conservation legacy by using available surface and flood flows to recharge the aquifer to be to beneficial used later, including during drought conditions. This project helps redress the historic depletion of the ESPA and promotes an efficient and adaptive strategy to combat future and existing drought in Idaho. The project is supported by Idaho's State Water Plan and the ESPA CAMP plan.

2: Utilizing our natural resources

The project supports a wise use of existing water resources, namely the Eastern Snake Plain Aquifer which supplies groundwater to other Reclamation projects including the Falls Irrigation district and Fremont-Madison Irrigation District. Further, the ESPA is hydraulically connected to the Snake River. Water saved in the aquifer stands to directly benefit Reclamation's storage operations at American Reservoir. Furthermore, the Snake River system provides roughly half of Idaho's power. Without that hydropower, Idaho's sustainable energy generation will decline causing an increased reliance on other energy sources that could be used elsewhere. Without adequate hydropower, Idaho's security and economic needs will not be met. Aquifer recharge projects will help stabilize the ESPA and help sustain hydropower production in the State.

3: Modernizing our infrastructure

The project demonstrates a wise use of infrastructure for multiple purposes. Both A&B and TFCC use their conveyance systems to deliver water for irrigation purposes. This project adds dedicated recharge injection wells to use the infrastructure to protect against future droughts. By establishing infrastructure that focuses on saving water and stabilizing historically depleted aquifers, this project, by facilitating private sector efforts to recharge excess water for drought years, addresses future American needs by utilizing our domestic resources in the most cost-effective and sustainable manner. America needs to conserve its water resources when available, this project proposes just that.

Project Budget

The project budget includes:

- (1) Funding plan and letters of commitment*
- (2) Budget proposal*
- (3) Budget narrative*

Project costs for environmental and cultural compliance and engineering/design that were incurred or are anticipated to be incurred prior to award should be included in the proposed project budget. If the proposed project is selected, the awarding Reclamation Grants Officer will review the proposed pre-award costs to determine if they are consistent with program objectives and are allowable in accordance with the authorizing legislation. Proposed pre-award costs must also be compliant with all applicable administrative and cost principles criteria established in 2 Code of Federal Regulations (CFR) Part 200, available at www.ecfr.gov, and all other requirements of this FOA.

Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability. Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources. Letters of commitment shall 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*

Commitment letters from third party funding sources should be submitted with your application. If commitment letters are not available at the time of the application submission, please provide a timeline for submission of all commitment letters. 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 make funds available for an award under this FOA until the recipient has secured non-Federal cost-share. Reclamation will execute a financial assistance agreement once non-Federal funding has been secured or Reclamation determines that there is sufficient evidence and likelihood that non-Federal funds will be available to the applicant subsequent to executing the agreement.

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

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

A&B and TFCC plan to contribute \$380,000 (60%) in qualifying match funding and in-kind services. This funding will be available at the start of the project. There are no other contingencies

with this funding. This funding will be used for construction materials, NEPA compliance, labor, fringe benefits, construction costs, and other contractual costs.

- *Any costs that will be contributed by the applicant*

A&B and TFCC plan to cover all costs associated with the Project through monetary funds and their in-kind costs/services.

- *Any third party in-kind costs (i.e., goods and services provided by a third party)*

No third-party in-kind costs are planned for this project.

- *Any cash requested or received from other non-Federal entities.*

At the time of application, no additional funds have been requested or received from other non-Federal entities.

- *Any pending funding requests (i.e. grants or loans) that have not yet been approved, and explain how the project will be affected if such funding is denied.*

At the time of application, no additional funds have been requested or received. The Project is expected to be completed with the funding being requested from Reclamation. Should this funding not be awarded, the project will most likely be delayed until enough funds can be obtained.

Table 6: Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. A&B Irr. Dist. / Twin Falls Canal Co.	\$380,000.00
Non-Federal Subtotal	\$380,000.00
Other Federal Entities	
1. None	\$0
Other Federal Subtotal	\$0
REQUESTED RECLAMATION FUNDING	\$250,000.00

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

None of the costs associated with the Project have been incurred prior to the anticipated funding award.

Budget Proposal

The total project cost (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 in-kind contributions, that are necessary to complete the project.

*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. Unit costs must be provided for all budget items including the cost of services or other work to be provided by consultants and contractors. Applicants are strongly encouraged to review the standards for procurement transactions for Federal awards found at 2 CFR §200.317 through §200.326 before developing the budget proposal.*

It is also strongly advised that applicants use the budget proposal format shown below in Table 2 or a similar format that provides this information. If selected for award, successful applicants must submit detailed supporting documentation for all budgeted costs.

See Budget Proposal in **Appendix C**.

The total estimated project cost is \$630,000.00. The cost estimate was prepared based on projected labor and equipment requirements using historical records from previous similar projects completed by A&B and TFCC, material quotes from suppliers, input from well drillers, A&B and TFCC labor rates, and the November 2016 US Army Corps of Engineers Construction Equipment Ownership and Operating Expense Schedule, Region VIII (EP 1110-1-8). Table 7 provides a summary of the estimated project costs.

Table 7: Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$250,000.00
Costs to be paid by the applicant	\$380,000.00
Value of third-party in-kind contributions	\$0
TOTAL PROJECT COST	\$630,000.00

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, all items included in the budget proposal. The types of information to describe in the narrative include, but are not limited to, those listed in the following subsections. Costs, including the valuation of in-kind contributions, must comply with the applicable cost principles contained in 2 CFR Part §200, available at the Electronic Code of Federal Regulations (www.ecfr.gov).

Salaries and Wages

Indicate the Project Manager and other key personnel by name and title. The Project Manager must be an employee or board member of the applicant. Other personnel should be indicated by title alone. For all positions, indicate salaries and wages, estimated hours or percent of time, and rate of compensation. The labor rates must identify the direct labor rate separate from the fringe rate or fringe cost for each category. All labor estimates must be allocated to specific tasks as outlined in the applicant's technical project description. Labor rates and proposed hours shall be displayed for each task.

The budget proposal and narrative should include estimated hours for compliance with reporting requirements, including final project and evaluation. Please see Section F.3.2. Program Performance Reports for information on types and frequency of reports required.

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

On the A&B portion of the project, the Project Manager will be Dan Temple, manager of the District. It is anticipated that he will spend 10 hours performing managerial tasks associated with the project, pay request processing, observing project progress, and purchasing construction materials. This accounts for up to 1 site visit each week for observing the progress of the work and purchasing and delivering construction materials. Other employees are mentioned by their titles with their associated task hours and responsibilities shown in the Table 8 below.

On the TFCC portion of the project Brian Olmstead, general manager of the Twin Falls Canal Company, and will be providing similar Project Manager services for its portion of the project. The attached budget (**Appendix C**) details the labor hours, equipment hours, and the administrative hours for the project on TFCC's portion. The estimates are also detailed in Table 9 below. TFCC will be building all-weather access roads, clearing, grading and preparing the site, and installing two new headgates into the TFCC main canal to supply water to the injection sites. TFCC will also be trenching, installing and backfilling approximately 300 ft of 20" 100 psi underground pipe from the two headgates to the injection sites. The rest of the in-kind services will be surveying, project inspection, bookkeeping. TFCC crews will assist with the well drilling, welding, and flow meter installation as needed.

Table 8: A&B Irrigation District Recharge Injection Wells Project Task Hours

TITLE	Rate \$/HOUR	TASK HOURS	TASK DESCRIPTION
Project Manager	\$45.68	10	Project planning, implementation and oversight of project
Project Assist.	\$38.67	20	Track all administrative records and costs
Project Foreman	\$27.57	320	Manage field work and direct construction crews in accordance with engineering plans. Report work progress and payroll
Equipment Operator	\$20.80	340	Operate associated equipment to complete pipeline installations
Construction Crew	\$20.38	1072	To construct and assemble all connecting pipe transitions and install buried pipelines

Table 9: Twin Falls Canal Co. Recharge Injection Wells Project Task Hours

TITLE	Rate \$/HOUR	TASK HOURS	TASK DESCRIPTION
Project Manager	\$48.47	16	Project planning, implementation and oversight of project
Project Assist.	\$31.92	60	Track all administrative records and costs, work with foreman
Project Foreman	\$36.34	60	Manage field work and direct construction crews in accordance with engineering plans. Report work progress and payroll.
Equipment Operator	\$30.07 – \$37.45	180	Operate associated equipment to complete pipeline installations.
Construction Crew	\$25.06 - \$30.30	192	To construct and assemble all pipe transitions, headgates, and install buried pipelines

Fringe Benefits

Identify the rates/amounts, what costs are included in this category, and the basis of the rate computations. Federally approved rate agreements are acceptable for compliance with this item.

The below table shows the categories of the fringe benefits and their associated costs for each employee.

Table 10: A&B Fringe Benefits Table

Hourly Rate	Position					Percentage
	Project Manager	Project Assistant	Project Foreman	Equipment Operator	Construction Crew	
Hourly Rate 2019	\$45.68	\$38.67	\$27.57	\$20.80	\$20.38	
Retirement	\$5.17	\$4.38	\$3.12	\$2.35	\$2.31	11.32%
Group Health Insurance	\$3.92	\$3.98	\$3.98	\$4.23	\$3.98	16.90%
Vacation and Sick Leave	\$0.88	\$0.74	\$0.53	\$0.40	\$0.39	10.00%
Holidays	\$1.58	\$1.34	\$0.95	\$0.72	\$0.71	3.46%
State Unemployment Insurance	\$0.24	\$0.24	\$0.24	\$0.24	\$0.24	0.39%
Life Insurance	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	0.31%
Worker's Compensation	\$1.02	\$1.02	\$1.02	\$1.02	\$1.02	4.86%
Total Fringe Benefit	\$12.89	\$11.78	\$9.92	\$9.04	\$8.73	
Hourly Rate with Fringe Benefits	\$58.57	\$50.45	\$37.49	\$29.84	\$29.11	

Table 11: TFCC Fringe Benefits Table

Employee Name	wages	retirement	insurance	PTO/holiday	Unemployment	WC	ss/medicare
Kevan Birrell	\$ 19.76	\$ 2.24	\$ 3.92	\$ 2.13	\$ 0.27	\$ 0.66	\$ 1.51
Victor Chavez	\$ 19.96	\$ 2.26	\$ 3.96	\$ 2.15	\$ 0.28	\$ 0.67	\$ 1.53
Aaron Christensen	\$ 16.71	\$ 1.89	\$ 3.32	\$ 1.80	\$ 0.23	\$ 0.56	\$ 1.28
Dave Crawford	\$ 24.73	\$ 2.80	\$ 4.91	\$ 2.66	\$ 0.34	\$ 0.83	\$ 1.89
Brandon Gentert	\$ 20.60	\$ 2.33	\$ 4.09	\$ 2.22	\$ 0.28	\$ 0.69	\$ 1.58
Eddy Griggs	\$ 25.95	\$ 2.94	\$ 5.15	\$ 2.79	\$ 0.36	\$ 0.87	\$ 1.99
Brian Olmstead	\$ 48.47	\$ 5.49	\$ 9.62	\$ 5.22	\$ 0.67	\$ 1.62	\$ 3.71
Kimberly Rankin	\$ 23.15	\$ 2.62	\$ 4.60	\$ 2.49	\$ 0.32	\$ 0.78	\$ 1.77
Clay Robinson	\$ 36.34	\$ 4.11	\$ 7.21	\$ 3.91	\$ 0.50	\$ 1.22	\$ 2.78
Kim Walters	\$ 24.21	\$ 2.74	\$ 4.81	\$ 2.61	\$ 0.33	\$ 0.81	\$ 1.85
Louis Zamora	\$ 31.92	\$ 3.61	\$ 6.34	\$ 3.44	\$ 0.44	\$ 1.07	\$ 2.44

Employee Name	Total Wages	retirement	insurance	pto/holiday	unemploy	WC	ss/medicare
Kevan Birrell	\$ 30.49	11.32%	19.85%	10.77%	1.38%	3.35%	7.65%
Victor Chavez	\$ 30.80						
Aaron Christensen	\$ 25.79						
Dave Crawford	\$ 38.16						
Brandon Gentert	\$ 31.79						
Eddy Griggs	\$ 40.05						
Brian Olmstead	\$ 74.80						
Kimberly Rankin	\$ 35.73						
Clay Robinson	\$ 56.08						
Kim Walters	\$ 37.36						
Louis Zamora	\$ 49.26						

Travel

Identify the purpose of each anticipated trip, destination, number of persons traveling, length of stay, and all travel costs including airfare (basis for rate used), per diem, lodging, and miscellaneous travel expenses. For local travel, include mileage and rate of compensation.

It is anticipated that there will be numerous trips per week for the life of the construction activities at each project site for project management operations and materials delivery. A&B and TFCC are not seeking reimbursement for pickup travel time.

Equipment

If equipment will be purchased, itemize all equipment valued at or greater than \$5,000. For each item, identify why it is needed for the completion of the Project and how the equipment was priced. Note: if the value is less than \$5,000, the item should be included under materials and supplies.

If equipment is being rented, specify the number of hours and the hourly rate. Local rental rates are only accepted for equipment actually being rented or leased.

If the applicant intends to use their own equipment for the purposes of the project, the proposed usage rates should fall within the equipment usage rates outlined by the United States Army Corp of Engineers (USACE) within their Construction Equipment Ownership and Operating Expense

Schedule (EP 1110-1-8) at www.publications.usace.army.mil/USACE-Publications/Engineer-Pamphlets/u43545q/313131302D312D38.

Note: If the equipment will be furnished and installed under a construction contract, the equipment should be included in the construction contract cost estimate.

No equipment purchases are planned for the Project. The Applicant will be using its equipment for the work or contracting for well drilling. Equipment rates are included for each Project Budget in **Appendix C**.

Materials and Supplies

Itemize supplies by major category, unit price, quantity, and purpose, such as whether the items are needed for office use, research, or construction. Identify how these costs were estimated (i.e., quotes, invoices from a previous similar project, engineering estimates, or other methodology).

Note: If the items will be furnished and installed under a construction contract, the materials/supplies should be included in the construction contract cost estimate.

The materials and supplies for each project are listed under Project Budget in **Appendix C**. All materials and supplies costs were sourced from similar projects previously completed in the area by A&B and TFCC.

Contractual

Identify all work that will be accomplished by consultants, or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. For each proposed contract, identify the procurement method that will be used to select the consultant or contractor and the basis for selection.

The NEPA compliance work will be contracted to a consultant that has worked with A&B in the past and has experience with the NEPA process. From similar previous projects, the estimated cost for NEPA compliance on a project similar to this project is around \$45,000. A&B obtained this estimate from local Reclamation staff at the Heyburn, Idaho office.

Well drilling is estimated to cost \$418,958 through a local licensed contracted well driller.

Third-Party In-Kind Contributions

Identify all work that will be accomplished by third-party contributors or volunteers, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task.

No third-party contributions are expected on the Project.

Environmental and Regulatory Compliance Costs

Prior to awarding financial assistance, Reclamation must first ensure compliance with Federal environmental and cultural resources laws and other regulations ("environmental compliance").

Every project funded under this program will have environmental compliance costs associated with activities undertaken by Reclamation and the recipient.

This work will be contracted to a consultant with experience in the NEPA compliance process. Cost for this item is included in the corresponding Project Budget in **Appendix C**.

Other Expenses

Any other expenses not included in the above categories shall be listed in this category, along with a description of the item and why it is necessary. Profit or fees are not allowed.

A&B and TFCC have included \$1,106 in contingencies related to environmental compliance.

Other Expenses

Indirect costs are costs incurred by the applicant for a common or joint purpose that benefit more than one activity of the organization and are not readily assignable to the activities specifically benefitted without undue effort. Costs that are normally treated as indirect costs include, but are not limited to, administrative salaries and fringe benefits associated with overall financial and organizational administration; operation and maintenance costs for facilities and equipment; and, payroll and procurement services. If indirect costs will be incurred, identify the proposed rate, cost base, and proposed amount for allowable indirect costs based on the applicable cost principles for the applicant's organization. It is not acceptable to simply incorporate indirect rates within other direct cost line items.

If the applicant has never received a Federal negotiated indirect cost rate, the budget may include a de minimis rate of up to 10 percent of modified total direct costs (MTDC). For further information on modified total direct costs, refer to 2 CFR §200.68 available at www.ecfr.gov.

If the applicant does not have a federally approved indirect cost rate agreement and is 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 Interior, the National Business Center, and Indirect Cost Services, at www.doi.gov/ibc/services/finance/indirect-cost-services. If the proposed project is selected for award, the recipient will be required to submit an indirect cost rate proposal with their cognizant agency within 3 months of award.

Fringe Benefits are shown in **Appendix C**. Additional details are shown in the "Fringe Benefits" section above.

Project Managers costs are shown in the Project Budget in **Appendix C**. The Project Managers' responsibilities are shown in the "Salaries and Wages" sections above.

H.1 Environmental and Cultural Resources Considerations

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants must respond to the following list of questions focusing on 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.*

A&B and TFCC will trench pipelines to the six (6) injection well sites. The work will be completed in a manner to minimize impacts to soil, air, and surrounding habitat. No impacts on water resources are expected. The work will be similar to prior projects completed on both A&B and TFCC irrigation projects and will not have any significant impact. Wells will be drilled at two sites which are both rural agricultural areas where other types of wells (irrigation and domestic) are regularly drilled.

- *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?*

None.

- *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.*

None.

- *When was the water delivery system constructed?*

A&B Pipeline was completed in March 2015, TFCC Main Canal in 1905-1910 timeframe.

- *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.*

Connections will be built to the A&B pipeline and TFCC Main Canal as described in the project description.

- *Are there 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.*

None.

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

None. Prior surveys on A&B project area conducted in 2014 too.

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

None.

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

None that A&B and TFCC are aware of.

- *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?*

None.

Required Permits or Approvals

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

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

A&B will work with Reclamation to complete necessary NEPA requirements. The only other permits needed are injection well permits from IDWR. A&B and TFCC will complete and file those applications once the award is granted by Reclamation.

Existing Drought Contingency Plan

If there is an existing drought contingency plan addressing the relevant geographic area, please attach a copy (or relevant sections) of the existing plan. (this will not count against the page limit).

Yes. See **Appendix F** (ESPA CAMP Plan)

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. (Note: this will not count against the application page limit.) Letters of support received after the application deadline for this FOA will not be considered in the evaluation of the proposed project.

Letters of Support are included in **Appendix A**.

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 FOA, verifying:

- *The identity and the position 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*
- *The capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan*
- *That the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement*

An official resolution meeting the requirements set forth above is mandatory. If the applicant is unable to submit the official resolution by the application deadline because of the timing of board meetings or other justifiable reasons, the official resolution may be submitted up to 30 days after the application deadline.

The signed Official Resolutions for A&B and TFCC are shown in **Appendix B**.

Unique Entity Identifier and System for Award Management

All applicants (unless the applicant has an exception approved by Reclamation under 2 CFR §25.110[d]) are required to:

- (i) Be registered in the System for Award Management (SAM) before submitting its application;*
- (ii) Provide a valid unique entity identifier in its application; and*
- (iii) 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.*

A&B has completed the SAM application process and has an active account. A&B plans to maintain this account throughout the project duration. The unique entity identifier information is included on the attached SF-424 Forms. Reclamation staff advised that only one of the two applicants needed to fill this out.

Appendix A
Letters of Support



IDAHO WATER RESOURCE BOARD

Brad Little
Governor

Roger W. Chase
Chairman
Pocatello
District 4

Jeff Raybould
Vice-Chairman
St. Anthony
At Large

Vince Alberdi
Secretary
Kimberly
At Large

Peter Van Der Meulen
Hailey
At Large

Albert Barker
Boise
District 2

John "Bert" Stevenson
Rupert
District 3

Dale Van Stone
Hope
District 1

Jo Ann Cole-Hansen
Lewiston
At Large

March 25, 2019

U.S. Bureau of Reclamation
WaterSMART Program
Denver, Colorado 80225

RE: Letter of Support – A&B Irrigation District & Twin Falls Canal Company
Mid-Snake Recharge Injection Wells Project Application

Dear U.S. Bureau of Reclamation:

Please accept this letter of support for the A&B Irrigation District & Twin Falls Canal Company application for a WaterSMART Drought Resiliency program grant to assist with the Mid-Snake Recharge Injection Wells project. The Idaho Water Resource Board (Board) is charged with many water resource policy, planning, and project development functions on behalf of the State of Idaho, including managing an effort to stabilize and recover the Eastern Snake Plain Aquifer (ESPA).

The A&B Irrigation District (A&B) was created to operate and maintain the North Side Pumping Division of Reclamation's Minidoka Project. A&B relies upon both surface water from the Snake River and groundwater from the ESPA to deliver irrigation water to approximately 82,000 acres in Jerome and Minidoka Counties. A&B holds storage space in Reclamation's American Falls and Palisades Reservoirs.

The Twin Falls Canal Company (TFCC) is a Carey Act company organized for non-profit purposes under Idaho law. TFCC relies upon natural flow from the Snake River and storage in Reclamation's American Falls and Jackson Lake Reservoir. TFCC delivers irrigation water to approximately 200,000 acres in Twin Falls County. Importantly, TFCC relies upon reach gains to the Snake River in the Blackfoot to Minidoka reach that flow directly from the ESPA.

Between 1912 and 1952, 17 million acre-feet of water were added to storage in the ESPA, primarily through the construction and operated of unlined canal systems over the ESPA, resulting in leakage that enhanced the aquifer. Since 1952 several changes have taken place that has resulted in declining storage in the aquifer. Twelve (12) million acre-feet have been lost from aquifer storage since 1952. These factors include canal systems and irrigators becoming more efficient in their delivery and application of water thereby reducing

seepage into the aquifer, the development of ground water pumping for irrigation, drought events, and long-term climate change.

This decrease in aquifer storage resulted in declining ground water levels in the ESPA, and declining spring flows from the ESPA, resulting in numerous water use conflicts that had the potential to disrupt the economy of the area. The declining ground water levels have also reduced available water supplies for ground and surface water users on Reclamation's projects. Both A&B and TFCC have been involved in water delivery calls and litigation resulting from these conflicts.

The Board embarked on several programs to address water supply issues in the ESPA, including the development of the Comprehensive Aquifer Management Plan (CAMP). More recently, surface and ground water users entered in a Settlement Agreement in 2015 aimed at restoring the ESPA to enhance water supplies for future years. The State of Idaho committed to support this agreement and its prior aquifer management plan through a comprehensive recharge program with a goal of 250,000 acre-feet per year. The Board has implemented an aggressive campaign to increase recharge capacity across the plain through the Legislature's appropriations of over \$20 million for capital improvement project. Notably, the Board has recharged over 908,000 acre-feet in the last three years (66,000 in 2016; 317,000 in 2017; and 525,000 in 2018).

The proposed Mid-Snake Recharge Injection Wells Project has numerous benefits to the Board the State. The project will add recharge capacity and help the Board work toward reaching the state's managed recharge goals. The direct injection of recharge water in the areas identified will provide long-term benefits to the aquifer, helping stabilize groundwater levels in the ESPA, which was designated as a Groundwater Management Area by the Director of IDWR in 2016. The project is uniquely located in an area where surface water is typically available to the Board to recharge throughout the entire non-irrigation season. The project will further assist in protecting waterusers, including A&B and TFCC, in years of drought by recharging surplus surface water from the Snake River. Enhancing ground water supplies and levels will help ensure the water is available for use in subsequent drought years.

The project will help stabilize aquifer levels in the ESPA and tributary spring flows and reach gains to the Snake River. Greater reach gains in the American Falls reach will directly benefit storage in Reclamation's American Falls Reservoir, another asset to protect against drought. Finally, recharge that improves spring flows in the Mid-Snake and Thousand Springs area stands to benefit ESA-listed snail species and will also likely assist in water quality issues.

Because of the benefits this project will provide, the Board wishes to offer its full support of the grant application filed by A&B and TFCC.

Please feel free to contact me with any questions.

Sincerely,



Brian Patton, P.E.
Executive Officer, Idaho Water Resource Board

Magic Valley Ground Water District
P.O. Box 430
Paul, ID 83347
(208) 339-6461

March 21, 2019

U.S. Bureau of Reclamation
WaterSMART Program
Denver, Colorado 80225

**Re: Letter of Support for Mid-Snake Recharge Injection Wells Project Grant
Application (Drought Response Program Grant FY 2019)**

Dear U.S.B.R.:

I am chairman of the Magic Valley Ground Water District that represents private groundwater users that irrigate over 130,000 acres in Jerome, Lincoln, Cassia, Blaine and Minidoka Counties in southern Idaho. Our district represents numerous members in the area close to the proposed recharge injection wells on the A&B Irrigation District project. Improved ground water supplies and levels in this area will benefit our members in drought conditions. Recharging available surface water for use in subsequent drought years is wise water policy and a benefit to all of southern Idaho.

Please accept this letter of support for the A&B Irrigation District's and Twin Falls Canal Company's WaterSMART grant application to assist with the Mid Snake Recharge Injection Wells Project. As a local landowner and farmer in Minidoka County, the proposed project will benefit A&B and the Magic Valley Groundwater District irrigators.

I am in full support of the proposed project and the grant would certainly assist the applicants in completing this important project.

Sincerely

MAGIC VALLEY GROUND WATER DISTRICT



Dean Stevenson, Chairman

March 21, 2019

U.S. Bureau of Reclamation
WaterSMART Program
Denver, Colorado 80225

**Re: Letter of Support for Mid-Snake Recharge Injection Wells Project Grant
Application (Drought Response Program Grant FY 2019)**

Dear U.S.B.R.:

I am chairman of the Southwest Irrigation District that represents private groundwater users that irrigate over 100,000 acres in Twin Falls and Cassia Counties in southern Idaho. Our district represents numerous members in the area south and east of the proposed recharge injection wells on the Twin Falls Canal Company project. Improved ground water supplies and levels in this area will benefit our members in drought conditions. Recharging available surface water for use in subsequent drought years is wise water policy and a benefit to all of southern Idaho.

Please accept this letter of support for the A&B Irrigation District's and Twin Falls Canal Company's WaterSMART grant application to assist with the Mid Snake Recharge Injection Wells Project. As a local landowner and farmer in Twin Falls County, the proposed project will benefit TFCC's and Southwest Irrigation District's members.

I am in full support of the proposed project and the grant would certainly assist the applicants in completing this important project.

Sincerely

SOUTHWEST IRRIGATION DISTRICT


Randy Brown, Chairman

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Appendix B
Signed Official Resolutions

**OFFICIAL RESOLUTION
OF THE
A&B IRRIGATION DISTRICT**

RESOLUTION NO. 2019 - 02

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has announced the *WaterSMART Drought Response Program: Drought Resiliency Projects for FY 2019* in order to provide financial assistance to water managers to implement projects that will build long-term resilience to drought, and has requested proposals from eligible entities to be included in the WaterSMART Program; and

WHEREAS, the A&B Irrigation District (District) has a present need for funding to implement the Mid-Snake Recharge Injection Wells project; and

WHEREAS, the project is intended to implement recharge injection well fields off of the A&B Pumping Plant #2 and Pipeline and the Twin Falls Canal Company Main Canal to enhance the Eastern Snake Plain Aquifer.

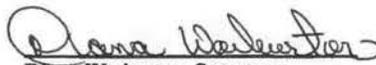
NOW, THEREFORE, BE IT RESOLVED that the District Board of Directors agrees and authorizes that:

1. The Board has reviewed and supports the proposal submitted;
2. The District is capable of providing the amount of funding and/or in-kind contributions, specified in the funding plan; and
3. If selected for a WaterSMART Grant, the District will work with Reclamation to meet established deadlines by entering into a cooperative agreement.

DATED: March 12, 2019


Harold Mohlman
President, A&B Irrigation District

ATTEST:


Diana Warburton, Secretary

**OFFICIAL RESOLUTION
OF THE
TWIN FALLS CANAL COMPANY**

RESOLUTION NO. 2019 - 01

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has announced the *WaterSMART Drought Response Program: Drought Resiliency Projects for FY 2019* in order to provide financial assistance to water managers to implement projects that will build long-term resilience to drought, and has requested proposals from eligible entities to be included in the WaterSMART Program; and

WHEREAS, the Twin Falls Canal Company (TFCC) has a present need for funding to implement the Mid-Snake Recharge Injection Wells project; and

WHEREAS, the project is intended to implement recharge injection well fields off of the A&B Pumping Plant #2 and Pipeline and the Twin Falls Canal Company Main Canal to enhance the Eastern Snake Plain Aquifer.

NOW, THEREFORE, BE IT RESOLVED that the TFCC Board of Directors agrees and authorizes that:

1. The Board has reviewed and supports the proposal submitted;
2. TFCC is capable of providing the amount of funding and/or in-kind contributions, specified in the funding plan; and
3. If selected for a WaterSMART Grant, TFCC will work with Reclamation to meet established deadlines by entering into a cooperative agreement.

DATED: 3/12/19



Roger Blass
President, Twin Falls Canal Company

ATTEST:



Rick Pearson, Secretary

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Appendix C

Project Budget

	A	B	C	D	E
1	Mid-Snake Recharge Injection Wells Project				
2	Appendix C				
3					Total
4	Budget Item Description	Quantity	Units	Unit Cost	Cost
5	Salaries and Wages				
6	Dan Temple - Project Manager	10	HR	\$45.68	
7	Diana Warburton - Project Assistant	20	HR	\$38.67	
8	Kent Tarbet- Project Foreman	320	HR	\$27.57	
9	Equipment Operator	340	HR	\$20.80	
10	Construction Crew	1072	HR	\$20.38	
11					
12					
13	Fringe Benefits				
14	Dan Temple - Project Manager	10	HR	\$12.89	
15	Diana Warburton - Project Assistant	20	HR	\$11.78	
16	Kent Tarbet- Project Foreman	320	HR	\$9.92	
17	Equipment Operator	340	HR	\$9.04	
18	Construction Crew	1072	HR	\$8.73	
19					
20					
21	Equipment Operating Hours				\$5,634
22	Excavator	80	HR	\$59.36	\$4,749
23	Backhoe	20	HR	\$44.24	\$885
24					
25	Construction & Construction Management				\$54,943
26	Dan Temple - Project Manager	10	HR	\$58.57	\$586
27	Diana Warburton - Project Assistant	20	HR	\$50.45	\$1,009
28	Kent Tarbet- Project Foreman	320	HR	\$37.49	\$11,997
29	Equipment Operator #1	320	HR	\$29.84	\$9,549
30	Equipment Operator #2	20	HR	\$29.84	\$597
31	Construction Crew #1	320	HR	\$29.11	\$9,315
32	Construction Crew #2	384	HR	\$29.11	\$11,178
33	Construction Crew #3	368	HR	\$29.11	\$10,712
34					
35	Supplies/Materials				
36					
37	Drilling Costs				\$418,958
38	Drilling of A&B 12" Recharge Wells	4	EA	\$52,118.00	\$208,472
39	Drilling of TFCC 20" Recharge Wells	2	EA	\$105,243.00	\$210,486
40					
41					
42					
43	Transitions and Piping Components				\$75,965
44	A&B Irrigation District				
45	15" 80 PSI PVC Pipe	1400	FT	\$8.50	\$11,900
46	12" 80 PSI PVC pipe	1,400	FT	\$5.00	\$7,000
47	30" pipe repair coupling	6	EA	\$1,600.00	\$9,600
48	Pressure relief valves	4	EA	\$1,350.00	\$5,400
49	Air vents and saddles	4	EA	\$300.00	\$1,200
50	12" Flow meters	4	EA	\$1,600.00	\$6,400

	A	B	C	D	E
51	12" - 45° Elbow	4	EA	\$60.00	\$240
52	12" - 90° Elbow	4	EA	\$90.00	\$360
53	12" Weld on Starter	4	EA	\$78.75	\$315
54	12" Steel Pipe	100	FT	\$25.00	\$2,500
55					\$44,915
56					
57	Twin Falls Canal Co.				
58	Salaries and Wages				
59	Kevan Birrell - Crew	48	HR	\$19.76	
60	Victor Chavez - Crew	48	HR	\$19.96	
61	Aaron Christensen - Crew	48	HR	\$16.71	
62	Dave Crawford - Equipment Operator	60	HR	\$24.73	
63	Brandon Gentert - Crew	48	HR	\$20.60	
64	Eddy Griggs - Equipment Operator	60	HR	\$25.95	
65	Brian Olmstead - Project Manager	16	HR	\$48.47	
66	Kimberly Rankin -Project Administrator	5	HR	\$23.15	
67	Clay Robinson - Project Foreman	60	HR	\$36.34	
68	Kim Walters - - Equipment Operator	60	HR	\$24.21	
69	Louis Zamora - Project Assistant	60	HR	\$31.92	
70					
71					
72	Fringe Benefits				
73	Kevan Birrell - Crew	48	HR	\$10.73	
74	Victor Chavez - Crew	48	HR	\$10.84	
75	Aaron Christensen - Crew	48	HR	\$9.08	
76	Dave Crawford - Equipment Operator	60	HR	\$13.43	
77	Brandon Gentert - Crew	48	HR	\$11.19	
78	Eddy Griggs - Equipment Operator	60	HR	\$14.10	
79	Brian Olmstead - Project Manager	16	HR	\$26.33	
80	Kimberly Rankin -Project Administrator	5	HR	\$12.58	
81	Clay Robinson - Project Foreman	60	HR	\$19.74	
82	Kim Walters - - Equipment Operator	60	HR	\$13.15	
83	Louis Zamora - Project Assistant	60	HR	\$17.34	
84					
85					
86	Materials & Equipment				
87	Pit Run Gravel	300	EA	\$5.00	\$1,500
88	Concrete	10	EA	\$150.00	\$1,500
89	Headgate	2	EA	\$2,000.00	\$4,000
90	PVC Pipe	300	EA	\$20.00	\$6,000
91	20" Ultrasonic Flow Meters	2	EA	\$8,000.00	\$16,000
92	Steel pipe 1/4" wall X 20"	60	FT	\$30.00	\$1,800
93	4" Air vents	2	EA	\$125.00	\$250
94					\$31,050
95					
96	Equipment Operating Hours				\$8,060
97	Dump Truck (Kevan Birrell)	24	HR	\$42.25	\$1,014
98	Dump Truck (Victor Chavez)	24	HR	\$42.25	\$1,014
99	Loader (Dave Crawford)	24	HR	\$87.25	\$2,094
100	Trackhoe (Eddy Griggs)	30	HR	\$87.25	\$2,618

	A	B	C	D	E
101	Pickup (Clay Robinson)	30	HR	\$5.60	\$168
102	Grader (Kim Walters)	16	HR	\$72.00	\$1,520
103					
104	Construction & Construction Management				\$20,336
105	Kevan Birrell - Crew	48	HR	\$30.49	\$1,464
106	Victor Chavez - Crew	48	HR	\$30.80	\$1,478
107	Aaron Christensen - Crew	48	HR	\$25.79	\$1,238
108	Dave Crawford - Equipment Operator	60	HR	\$38.16	\$2,290
109	Brandon Gentert - Crew	48	HR	\$31.79	\$1,526
110	Eddy Griggs - Equipment Operator	60	HR	\$40.05	\$2,403
111	Brian Olmstead - Project Manager	16	HR	\$74.80	\$1,170
112	Kimberly Rankin -Project Administrator	5	HR	\$35.73	\$179
113	Clay Robinson - Project Foreman	60	HR	\$56.08	\$3,365
114	Kim Walters - - Equipment Operator	60	HR	\$37.36	\$2,242
115	Louis Zamora - Project Assistant	60	HR	\$49.26	\$2,956
116					
117	Total Construction Cost				\$583,896
118					
119	Other				\$46,104
120	Environmental and Regulatory Compliance Costs				
121	NEPA Environmental Assessment				\$45,000
122	Contingencies				\$1,106
123					
124	Total Project Costs				\$630,000

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Appendix D

Project Schedule

PROJECT SCHEUDLE

If awarded the Grant in the fall of 2019, A&B and TFCC would contact Reclamation to begin NEPA compliance, it is expected that would take six (6) months (fall 2019 through Feb. 2020).

Once awarded, drilling, construction work and material purchases would begin immediately as outline below in the approximate 18 month schedule for the project:

Fall 2019 – Winter 2020

- Order all pipe, flow meters and materials for connecting from the 30" mainline to recharge wells and from the TFCC main canal to the recharge wells.
- Begin drilling of the four wells on A&B project.
- Manufacture all pipeline connection fittings.

Summer 2020

- Finish drilling 4 wells if not completed.
- Move well driller to TFCC to begin drilling of the two (2) 20" recharge wells.

Fall 2020 – Winter 2021

- Begin trenching and installing 12" PVC pipelines from 30" mainline to recharge well locations.
- Begin trenching and installing two (2) 20" PVC pipelines from TFCC main canal to recharge well locations.
- Make connections of the 12" lines to the 30" mainline and at injections wells.
- Make connections of the two (2) 20" PVC pipelines to the TFCC main canal and recharge wells.

Spring of 2021:

- Project would be complete and ready to recharge.

Fall of 2021:

- Depending upon schedules with crews and well driller, contingency of six (6) months to finish all of the above.

Appendix E

Idaho Water Resource Board Groundwater Modeling Report ESPA Recharge