Department of the Interior
Bureau of Reclamation

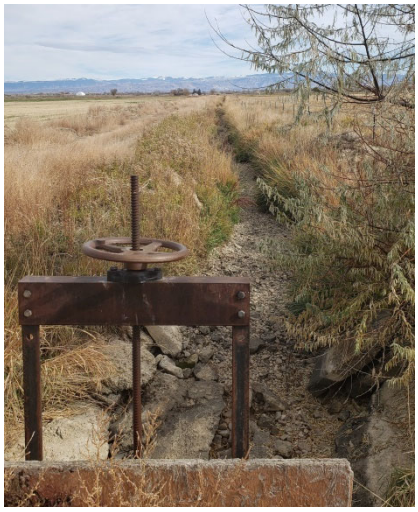
WaterSMART Grants:
Water and Energy Efficiency Grants for Fiscal Year 2024 and Fiscal Year 2025
No. R24AS00052

SIDON IRRIGATION DISTRICT

Westend Lateral Rehabilitation Project

Cowley, Wyoming

Big Horn County



SIDON IRRIGATION DISTRICT
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Unique Entity Identifier (UEI) N3EJSQEU4TY7

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February 13, 2024

Sidon Canal Co dba: Sidon Irrigation District
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Cowley, WY 82420
Bighorn County

Category A Applicant

Joining a Wyoming Water Development Commission (WWDC) "materials only" Grant with this funding opportunity R24AS00052 WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2024 and Fiscal Year 2025 from the Bureau of Reclamation, will enable Sidon Irrigation District to complete needed improvements on the Westend Lateral system. Sidon Irrigation District is a Category A Applicant. This funding will allow Sidon Irrigation District to have this pipe installation implemented by a professional company, thereby enabling the employees of the irrigation district to perform their important work of maintenance and repair of the canal and other laterals. Without this funding the irrigation district will need to have the employees execute the pipe install over a number of years or not construct the project at all. This process takes them away from their regular scheduled duties, which creates difficulty having the canal system ready for irrigation demands. This project already has been selected by the WWDC to receive funding for the materials in the value of $1,711,000.00. Sidon Irrigation District is supplying up to $71,000.00 in addition for materials. As such, the 50/50 portion of the FOA has been matched to that degree. The amount being requested from BOR is $863,000.00. This grant will be for installation and engineering of burying an existing open channel lateral with approximately 33,000 feet of various sized PVC pipe. This lateral is used to irrigate approximately 1,100 acres of productive farmland located in north Big Horn County, WY near Cowley, WY.

This project is anticipated to start November 15, 2024 after water has been turned out of the canal, and to be completed April 10, 2026. This allows sufficient time to install the system and will be completed in such a way that lands can be irrigated through construction.

There are no federal facilities on or within the area of this project.

Background Data

In the year 1900, William F. Cody and Nate Salisbury had a permit, from the state of Wyoming, to divert water from the Shoshone River and build an irrigation system across a large parcel of land, referred to at the time, as the Shoshone Valley. This permit covered an expanse of acres tied to the old proposed Cincinnati Canal which, though surveyed, had never been constructed.

Mr. Cody (aka Buffalo Bill) wanted canals to be built so farming could develop in the area, but he had no plan to be the financier for the effort. His purpose lay in finding responsible peoples who had a vested interest in making the project come to fruition.

So it was, in February, 1900, that he met with a delegation from The Church of Jesus Christ of Latter-Day Saints (Mormons) who had come from Salt Lake City, Utah. The group's intent was to find a location that would allow large acreage to be cultivated in one area. After inspection of the vast region, and interviews with local people during their visit, the bold decision was made to recommend that hundreds of families be called upon to build the canal system needed for irrigation. It was early February and they could not even take soil samples because the ground was frozen.

Nevertheless, groups from Utah, Idaho, and southwestern Wyoming started out, in March, for the Bighorn Basin. They came, knowing only that they were coming to homestead a dry, arid land that would not have water until a 30 mile canal was constructed.

An application was filed for a permit on April 24, 1900 for the Sidon Canal. The canal was to be 30.48 miles long and cover 17,715.28 acres. It would be 25 feet wide at the waterline with a bottom width of 15 feet, 5 feet deep, and 2 ft. /mile for grade. On the very same day, the application was granted, and the Cincinnati Permit was cancelled. Work could now begin on the Sidon Canal.

The project began on the morning of May 28, 1900 and was not completed until the spring of 1904. Each man earned shares of canal stock for a day's work; the amount was determined by criteria such as: a man with horse team, single man, man with wagon to haul supplies, and so forth. Water rights were/are adjudicated by the State of Wyoming Engineer's Office.

The canal is still used for agricultural purposes, currently serving 646 landowners, and 14,276.68 total district acres. Average annual water delivery of 11.4 acre-feet/acre assessed is assessed. The types of on-farm irrigation applications are canals, flood, and some center pivot systems. The main crops being irrigated are sugar beets, grain, hay, corn, and beans. Water

measuring devices currently in use are some crested weirs and some ultrasonic flow meters for buried pipe.

Annually the total water provided by the system is 150,845 (AF), with a daily demand average of 668 (AF), peaking at 670 (AF). The maximum capacity of this water supply system is 1000 (AF/day).

There are approximately 38 miles of Sidon Canal and roughly 66 miles of laterals. There have been approximately 13.4 miles of piped improvements, not counting the Town of Cowley raw water piping improvements. There have been check-structures added to the Sidon Canal over the years also.

The Sidon Canal has no hydropower or other energy efficient elements at this time.

Sidon Canal Company / Sidon Irrigation District has had no past project partnerships with the Bureau of Reclamation.

Potential shortfalls in water supply to the Sidon Irrigation District could occur if:

- Buffalo Bill Reservoir is unable to let enough water into the Shoshone River;
- A breach or blowout of a canal bank would occur;

Some information used with permission from Cowley Pioneer Museum, Roland Simmons.
Partridge, Mark N. *With Book and Plow: History of a Mormon Settlement*. Lovell, Wyo.: Revised Edition 2003, Published by Family History Publishers, Inc.

Project Location

Sidon Irrigation District Westend Lateral Rehabilitation Project is located in Big Horn County, Wyoming. It is within the boundary of the Sidon Canal District as shown on the attached Map A.
It is near the town of Cowley, Wyoming. The project starts approximately 2 miles west of the town of Cowley, WY, as shown on the attached Map B.

The project begins at 44.893138° Latitude and -108.513838° Longitude; and extends to 44.876906° Latitude and -108.489463° Longitude.

TECHNICAL PROJECT DESCRIPTION

The Sidon Irrigation Westend Lateral Rehabilitation Project consists of placing current open lateral ditches into closed, buried pipeline. The lateral starts at the turnout in the Sidon Canal west of the Town of Cowley. The lateral then runs south and east along the edge of existing agricultural land and beyond to irrigate approximately 1100 acres of productive farm land, close to 8% of all the land in the district. The length of the lateral that will be placed in pipe for this project is approximately 33,000 feet long. There are numerous turn outs along the way with laterals that branch off. The main lateral is designed to carry 40 cfs of water to deliver to the irrigated land. The design of the pipeline is for a pressurized system to help accommodate the needs of the irrigators, as well as conservation of water. As most land is irrigated by gated pipe currently, containing the head in the pipeline will enable better use of the gated pipe. Plans are for center pivot sprinkler systems in the future, on portions of this land.

Burying this pipeline will help the district conserve water that is essential to this area for sustaining the economy. Water loss is attributed to seepage in the existing lateral as it is an unlined, dirt ditch. Native species of vegetation grow along this ditch bank also using water that would be desirable for crops instead. Inhabitants in this area live in an arid climate. Average rain fall for this area is less than 7 inches per year with 40 inches of average evaporation. Open channel flow does experience loss to evaporation as well. This project will eliminate all three of these losses that they now experience. Another benefit that will come from the project is the elimination of erosion of the channel in some locations and the depositing of the sediment in others. Through this project, the amount of maintenance on the lateral will be reduced. Currently the district must periodically clean the sediment and

vegetation from the channel. This takes valuable resources away from improvements of the system.

The cost of the total project is $2,645,000.00. (See attached Estimate) The Sidon Irrigation District is requesting a grant for $863,000.00 from the Water Smart program that will pay for the installation and construction engineering (the design has been completed) for the project. The district has already secured a materials only grant from the Wyoming Water Development program for $1,711,000.00. The remaining $71,000.00 will come from Sidon Irrigation District.

Completion of this project will be a milestone in the history of this district. The water that can be saved and the increased control of how the water is used will help this district for a very long time. The decrease in required maintenance will be a financial savings. This will be a savings of both money that can be used in the future and water to assist the district in providing adequate and reliable irrigation to the users.

Evaluation Criteria

Evaluation Criteria: Scoring Summary	Points:
A. Quantifiable Water Savings	**25**
B. Renewable Energy	**20**
C. Other Project Benefits	**15**
D. Disadvantaged Communities and Tribal Benefits	**15**
E. Complementing On-Farm Irrigation Improvements	**8**
F. Readiness to Proceed	**8**
G: Collaboration	**5**
H: Nexus to Reclamation	**4**
Total	***100***

A. Quantifiable Water Savings

(1) Canal Lining/Piping

The existing laterals are mostly earthen ditches with various forms of vegetation lining the banks. Water loss in the lateral can be attributed to seepage, evapotranspiration and

evaporation. The water savings that will be addressed by this project is through seepage and evaporation. There is usually excess water required in the lateral to ensure that adequate streams of water may be utilized for irrigation. For example, most turnouts require that there is some water spilling over a check dam to have the surface of the water high enough to flow out of a turnout and enter gated pipe. This excess water is returned to the river from where it came through a series of ditches, drains and streams. The water is not being lost to the river basin but is not being efficiently used in the irrigation system, as this is water that is part of the water right that can be diverted from the Shoshone River for use. Keeping this water in the system for beneficial use helps increase the efficiency of the entire canal.

The estimate of water loss that the laterals experience at this time is based on area-flow tests that were conducted in the month of July during peak irrigation time. In reviewing the project, it was determined that the best method to quantify the loss due to seepage was to use an area -flow test. There are currently no measuring devices in place on the laterals to use for a test but temporary flow devices along with a cross-sectional area of the lateral was used. With the irregularity of the channel shape and the need to not disrupt irrigation flows, installation of devices in the channel would be a large challenge and not yield any better results than what was used.

The method of evaluation of the quantifiable savings was conducted on a 5,150 foot reach of one of the main laterals that will be placed into a buried pipeline. A cross-sectional area of the lateral was measured just after the water was turned out of the main canal and stable flow was observed. The area of the channel was calculated to be 12.3 sqft and the velocity of the water was measured at 1.0 feet per second (fps). Multiplying the area by the velocity yields a value of 12.4 cfs of water in the lateral at this point. Moving down the lateral to the end of this reach which is 50 feet before the lateral enters a culvert to go under a highway, the area of the channel was measured and calculated to be 8.9 sqft with a water depth of 2.1 feet. The velocity of the water here was measured at 0.9 fps. Calculating the flow as before yields a result of 8.1 cfs. The water loss through this reach is the difference between 12.4 cfs and 8.1 cfs or a total of 4.3 cfs. Through this reach, there was no water delivered to any fields irrigated under this lateral. This calculates to 8.5 acre-feet per day of water loss. The irrigation season is approximately 190 days long. This equates to a total loss per year for this reach of the lateral of 1615 acre-feet of water lost to seepage.

The estimate of water lost for the entire system being enclosed then would be the ratio of the length of the entire system to the length of this reach times the measured water loss of 1615 acre-feet. So dividing the length of 33,000 feet lateral being placed in pipe and buried by the 5,150 feet section of lateral measured then multiplying by the water loss of 1615 acre-feet, yields an annual water savings of 10,349 acre-feet of water per year (AFY). This estimate is

based on the fact that the soil type and vegetation found along the laterals in this area are all the same type and do not very.

The loss from evaporation can be calculated using the width of the water surface at each location that was cross sectioned. This width can be used to calculate a surface area for the lateral. Published data from NOAA Technical Report NWS 34, Mean Monthly, Seasonal, and Annual Pan Evaporation for the United States, December 1982, Table II gives us evaporation rates for the months of May through October of 42.50 inches in Lander, WY and 36.65 inches in Sheridan, WY. Using an average of these two numbers yields a result of 39.58 inches. Using this rate with the water surface area of the lateral will give us a volume of water lost due to evaporation.

At this time, it is estimated that water loss due to evaporation is 9 AFY. This is calculated using the length of the project of 33,000 feet. An average width of water surface of 3.5 feet and the evaporation rate of 39.58 inches per year. The values are all multiplied together, converting inches to feet, and then converting the end product of cubic-feet to acre-feet.

The total estimated water savings from the project then would be the sum of losses due to evaporation and seepage since the lateral will be placed in a PVC pipe that will eliminate both losses. The estimated savings then is 10,358 AFY. Verification of this water loss will be done by monitoring the flow of water through the pipeline. The water going into the pipeline will be measured with a flow meter and a crested weir. Other flow meters will be placed at junctions in the pipeline to monitor flows in those particular branches. A summation of those flows along with addition of turn out flows will show that the amount of water going into the system is the same amount of water that is going out. Records will be kept to document these flows once the project is complete.

The materials used will be PVC pipe of various sizes from 36” down to 12” to accommodate the required flow for the laterals. The pipe will have gasketed joints which will eliminate leakage. Twelve-inch gate valves will be used for each turn out with larger inline valves used to control the water. A new diversion box constructed of reinforced concrete will be constructed and the head end of the lateral and will have an automatic gate to control water flow. The box will also contain a screen to clean the water of large debris. This material for the pipe will eliminate seepage and evaporation that is the major cause of the water loss.

(2) Municipal Metering – Not Applicable To This Project

(3) Irrigation Flow Measurement

Although flow measurement is not the main purpose of this project, it is being addressed. Seven (7) ultrasonic flow meters will be installed along the laterals to help ensure quantities of water being delivered. These flow meters are solar powered and have remote capabilities. As Sidon Irrigation has few measuring devices in their system, this installation will help improve the District's control of the water usage. These flow meters will assist in the post project reporting of quantifiable water savings.

(4) Turf Removal - Not Applicable To This Project

(5) Smart Irrigation Controllers and High-Efficiency Nozzles - Not Applicable To This Project

B. Renewable Energy

Although this project is not focused on renewable energy there are energy efficiencies that will be a part of the project. The seven ultrasonic flow meters that will be installed receive all of their power from small solar panels connected to a battery. Each of the panels will be capable of producing 10 W. The total then produced on the project will be 70 W. All of these meters will be able to communicate with one another and flows can be monitored with smart phones or tablets. This ability to communicate to the ditch riders will prove to be invaluable in time saved as well as the savings in greenhouse gas emissions from the vehicle that would normally need to drive the area and check the flows. These emissions are difficult to quantify as the miles not driven each day would be dependent on which landowner is watering and where.

Increasing Energy Efficiency in Water Management –

By placing all the water in a buried pipeline, this creates a pressurized system. The pressure in the pipeline then will help reduce the amount of energy required to pump the water into center pivot sprinkler systems. Currently there is only one center pivot on this system but irrigators intend on placing more on farm improvements after this project is complete.

The energy savings that is calculated for the one pivot on the system is 262.5 kWh per year. This is being calculated from a previous year of operation. The system has a 20 hp pump that is needed to produce 50 psi in the system. By providing 15 psi in the new pipeline before the pump, the pump only has to increase the pressure by 35 psi to reach the 50 psi needed. A decrease of 30% of the energy necessary. Last year the center pivot used approximately 875 kWh. Applying the 30% reduction would result in a savings of the 262.5 kWh per year for this one pivot.

C. Other Project Benefits

Currently this project resides in an area of drought. Because of that, there is widespread support for the project among those that are on this lateral system and those downstream. They understand the need for this project to be completed in a timely manner. Farmers know that this will increase the reliability to irrigate their crops. Even farmers not directly affected this project area are supportive. As the project area becomes more consistent in water flow, it allows for more water to be sent downstream to users who, at times of high temperatures, have struggled to get the water that they have needed to sustain their crops. This project will help alleviate problems such as evaporation – especially in hot months. It will stop seepage that occurs, and unwanted weed/plant growth. This project will also eliminate the need to spill water at checks in the ditches to ensure enough flow in the field. All of these items are an increased demand on the entire system. The installed pipe in this project eliminates all of these "wastes" of the available water to irrigate with. Elimination of that loss then allows that water to be used in a beneficial manner to help counter the drought that is being experienced.

There is always the fear of lower flows, such as shortages due to the current drought, increased demand because of hot weather, or reduced deliveries occurring because of matters upstream. However, historically speaking, the Sidon Canal has had mostly reliable access to water, to date. However, Sidon Canal users have had tension or conflict over the availability of their water and that will grow as availability of water is diminished. The total estimated water savings from the project would be the sum of losses due to evaporation and seepage, since the lateral will be placed in a pipe that will eliminate both losses. The estimated savings then is 10,358 AFY. These water savings would be passed along the system to meet the need of water elsewhere.

This project helps irrigation managers by controlling the delivery of water and being more efficient in how the water is delivered. Reducing flows of the needed water, by eliminating the losses to this lateral, will make more water available to users further downstream in the system. One of the great benefits of an enclosed pipeline beyond controlling water loss, is the fact that when an irrigator shuts off a head of water, instead of that water spilling down the ditch, it remains in the pipeline. All that water that was spilled then is captured for use either in that pipeline or it remains in the canal for use further down. All in all, the conserved water from this project will help anyone, extending to the Missouri and beyond, who needs and uses it along the way.

D. Disadvantaged Communities and Tribal Benefits

Based on the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), this project falls within a Partially Disadvantaged Community. A review of the tool shows that in the category of Climate Change, this area has an Expected Agriculture Loss Rate of 84% percentile. This is an economic loss to agriculture value resulting from natural hazards each year. This project will help mitigate that potential loss by helping to increase crop production and conserving the natural resource of water.

E. Complementing On-Farm Irrigation Improvements

Future water conservation improvements for other water users are enhanced by completion of this project. There are some "next generation" farmers working along the Sidon who understand the improvements that will make a difference in their final crop analysis. This project allows them the ability to add improved irrigation techniques to their operations. Future funding, through other programs, like NRCS, will impact how those improvements are able to be completed for individual farmers. The Sidon Irrigation District is forward-thinking in their projected improvements, as well, and will continue to find solutions in other areas of the system to develop. Sidon Irrigation is a member conscience organization that does not earn a profit to pay for large improvements.

This project of placing the open channel lateral in a pipe complements the on-farm improvements by utilizing the natural head of the system with the gated pipe that is in use now and the center pivot sprinkler systems that are being planned. This pipe system will be a pressurized system that will allow the irrigators to utilize that pressure in their on-farm systems. The water saved in the system will also allow irrigators, during the hot months of the summer, to better utilize the water available which in turn will result in higher yields and healthy crops.

Most of the farmers on this project intend to request assistance through NRCS to install center pivot sprinkler systems on their farms. One farmer in particular has started discussion with NRCS regarding the use of center pivots and intends to apply as soon as this project can be completed. This pipeline will help compliment any of these center pivots as it will supply a constant flow of water that is under pressure. The pressure will range from 5 psi to 25 psi depending on where in the system the sprinkler is located. This pressure will help in the sizing of pumps required and the amount of energy used.

F. Readiness to Proceed

Sidon Irrigation District has shown, by their past efforts, that they certainly are developing and modernizing their canal and irrigation system. They have had studies done in

the past on portions of the canal and are currently developing a new master plan in conjunction with WWDC. They have performed improvements and rehabilitation over the years such as this project, which is a piping project. This pipe installation will produce a water delivery system that is improved in efficiency and in the ability to maintain.

Planning efforts to determine the priority of this project, in relation to other potential projects, were a result of meetings of the Sidon Board of Directors and District members to determine a project priority list. These meetings have been held on a yearly basis to continue to identify and prioritize ongoing improvements to the system. Improvements will be decided as the board looks over the needs of their member users and considers other available funding options. Sidon does not carry a profit and must rely on funding opportunities for their rehabilitation and improvements, and modernizations.

Implementation of water saving processes will be completed as a result of the open channel being placed into a buried pipeline. The results will be visibly evident as well as quantified through the techniques outlined in Section A. Quantifiable Water Savings. These outcomes will be reported in the final report as required.

Below is a list of the major tasks necessary to complete the project.

1. Obtain the necessary funding. Funding for the materials is complete. Funding to assist in installation will be by this grant application or private lenders and maintenance funds.
2. Complete environmental and cultural compliance. Letters have been sent to the various agencies for requirements for this project. As the alignment is the same as the current ditch and all ground has been previously disturbed, it is expected that minimal impact will occur.
3. Bid contract for materials procurement. WWDC is funding all the materials and requires a competitive bid process. This will occur as soon as construction funding is secured.
4. Bid contract for construction installation. A contractor will be selected through a competitive bid process to install the pipeline.
5. Begin construction.
6. Complete construction.

Design engineering for the project has been completed and paid for by Sidon Irrigation. Bid packets for both materials and installation will need to be put together at the appropriate time. This project is “shovel ready” and can begin as soon as funding is secured, and final environmental clearance is obtained.

Permits that need to be obtained are with Wyoming Department of Transportation (WYDOT) and Big Horn County. Two permits will need to be secured with WYDOT for crossings on Highway 310. Existing culverts at these locations will be used as a sleeve for the new pipeline

so obtaining these permits will take approximately 30 days when submitted since no construction activities will occur on the roadway. One permit will be required from Big Horn County on Road 6 for a crossing. This permit will take 10 to 15 days to secure when applied for. As these types of permits have been obtained for other projects from both entities that are similar in nature, difficulties in obtaining them is not anticipated.

SIDON IRRIGATION DISTRICT
WESTEND LATERAL REHABILITATION PROJECT
PROJECT SCHEDULE

TASK	BEGIN DATE	END DATE
Obtain Construction Funding	Present	1-Jul-24
Bid Materials Contract	1-Aug-24	
Environmental and Cultural Clearance	1-Jul-24	31-Oct-24
Bid Construction Installation	1-Sep-24	
Begin construction	1-Nov-24	
50% Completion		10-Apr-25
End construction		10-Apr-26
Final Report	1-Jun-26	

G. Collaboration

One of mankind's fundamentally essential natural resources is water. The need for clean drinking water, as well as water for farming, food production, and all areas of manufacturing and industry necessitates the crucial need to oversee our supplies carefully. The best way to do that is for respectable practices, by users, to be implemented and government oversight to be conscientiously dictated.

For those reasons, Sidon Irrigation District is very grateful for funding opportunities from the Bureau of Reclamation and Department of Interior, as well as WWDC, that facilitate the ability to rehabilitate and maintain a water source so crucial to our area.

We are dedicated to be a good steward and neighbor with persons and entities bordering our canal district. We communicate with local communities as we work with them for their raw water needs and through projects that improve their lives. We work with county commissioners as we explain to them the scope of our project and obtain permitting to complete parts of the project that require such authorizations.

This project will support the SECURE Water Act which strives to strengthen water sustainability to increase resilience to climate change. This project will modernize a section of the Sidon Canal District and make improvements to the problems of evaporation loss, ground

seepage, and unwanted plant growth. Improvements such as enclosing open waterways and helping to control mosquito population would also be recognized.

Wyoming Water Development (WWDC) will be contributing $1,711,000.00 through a materials only grant. This grant has been secured and an agreement is in place for the materials. Sidon Irrigation will also contribute up to $71,000.00 for materials. Sidon has also contributed to this project through paying for the design engineering from their maintenance and construction fund. Although these funds are not being presented as match for this grant, it does indicate the commitment the District has to complete this process. There are no other in-kind contributions. This project has 67 % Non-Federal Funds that are already committed to this project from these entities.

$$\frac{\$\ 1{,}782{,}000.00}{\$\ 2{,}645{,}000.00} = 67\%$$

The support shown from WWDC for this project is significant and shows that they feel this project is significant to the State of Wyoming. Any water that can be conserved, allows others as well as Sidon users to have more water available to them in times of shortage.

Land owners/irrigators in the area are also in support of the project (see attached letters of support). They recognize that with this project they will be able to better use the water delivered to their lands. Many are planning to install improvements such as center pivot sprinkler systems that will even further enhance the water conservation of the area.

H: Nexus to Reclamation

Sidon Irrigation is connected to several Reclamation projects by way of the Shoshone River source. Sidon receives water from Buffalo Bill Reservoir which spills into the Shoshone River. Any water conserved by Sidon Irrigation benefits the other users in this river basin. Other Irrigation Districts that receive water from the Shoshone River are the Heart Mountain Irrigation District, the Willwood Irrigation District, the Shoshone Irrigation District, Lovell Irrigation District and the Deaver Irrigation District.

After running its course as an irrigation canal, the Sidon returns to the Shoshone River. The Shoshone River then empties into the Bighorn River, which in turn flows into Bighorn Lake and the Bighorn National Recreation Area.

There is no tribe(s) on the land where this project lies, but this water flows back into the Shoshone River which flows into the Bighorn Lake. The reservoir narrows as the river enters the

Bighorn Canyon. This Bighorn Canyon National Recreation Area is a national park unit established by an act of Congress on October 15, 1966, following the construction of the Yellowtail Dam by the Bureau of Reclamation. The Bighorn Lake straddles the border between Wyoming and Montana. A considerable portion of this park unit is located on the Crow Indian Reservation. Also, a section of the Pryor Mountains Wild Horse Range lies within the Bighorn Canyon National Recreation Area. The lake extends 71 miles through Wyoming and Montana. At Hardin, MT the Bighorn river is joined by the Little Bighorn River. Approximately 50 mi downriver, the Bighorn empties into the Yellowstone. The Yellowstone empties into the Missouri, which in time empties into the Mississippi.

Environmental and Cultural Resources Compliance

There are no listed or proposed-to-be listed Federal threatened or endangered species, or designated critical habitat in the project area.

The soils will be disturbed in the project area as the pipe is placed in the ground. This soil has been disturbed in the past from the installation of the initial lateral and subsequent maintenance of the lateral (i.e. cleaning the dirt lateral with a back hoe). The new buried pipe will be placed in the existing channel and buried with spoils from the excavation. As this work will be done during the non-irrigation season, the work will not impact any water. There will be some fugitive dust but the amount will be minor and for a short duration.

Some animal habitat will be disturbed from the vegetation that will be removed during construction activities. However, there is an abundance of habitat adjacent to the project site and the disturbance will be minor. There are no known listed or species of concern in the area nor is there any critical habitat found. Letters to the US Fish and Wildlife, as well as Wyoming Game and Fish Department have been sent to ask for concurrence for this project. Sidon commits to any requirements that these agencies may propose. Copies of letters sent to these agencies regarding this project are attached as well as their response.

The water delivery system was constructed between the years of 1900 – 1904. This project involves irrigation laterals constructed originally in that era. Potential for some minor wetlands is high along the existing lateral channel. The installation of this pipeline will have the effect of disturbing these minor wetland areas. A letter has been sent to the US Army Corp of Engineers asking for their review of the project and recommendations. The response letter indicated that the project is exempt under Section 404(f) found at 33 C.F.R. Part 323.4(a)(3).

This project will include the replacement of the headgate for this lateral at the canal. The initial headgate was installed around 1904 upon completion of the entire canal. Since that time the headgate has been maintained and upgraded numerous times through the last 117 years. Sidon does not have records indicating when the last time that it was replaced, but from

verbal history of residents in the area it was approximately 30 to 40 years ago. Minor maintenance has been performed on the headgate on a yearly basis.

There are not any known archeological sites in the proposed project area. A letter has been sent to the State Historic Preservation Office asking for clearance from them on this project. SHPO response indicates a cultural resource survey is necessary before clearance can be given. Sidon commits to follow any requirements that may be imposed by SHPO on this project.

There are numerous buildings, structures and features listed on the National Register of Historic Places located within the boundary of Sidon Irrigation. This project however does not include any of them in the project area and will not affect the historic value.

This project will not contribute to the introduction, continued existence or spread of noxious weeds or non-native invasive species known to occur in the area. It is expected that this project will help reduce this concern in the project area, as water will become unavailable for this plant life to utilize.

Please see attached Letters to the US Fish and Wildlife, Wyoming Game and Fish Department, State Historic Preservation Office, and U.S. Army Corp. of Engineers and their response letters.

Required Permits and Approvals

There are three established road crossings within the periphery of this project. Permitting from the Big Horn County Engineer and Wyoming Department of Transportation will be properly obtained for modification to these areas.

The Project Manager will obtain permits through the correct channels of authority, i.e. County Engineer, County Commissioners and WYDOT District Engineer. These permits will be requested closer to the time that the project begins because they are time sensitive.

There are no Federal facilities within or on this project area. No other permits are anticipated.

Certification Regarding Lobbying

Sidon Irrigation District does not perform any lobbying activities nor does it employ a paid lobbyist to act on its behalf. Since no lobbying has occurred the Form SF-LLL has not been attached but form GG-LobbyingForm V1.1 is attached.

Letters of Project Support

Please see Attached Letters of Support.

Official Resolution

The Sidon Irrigation Board of Directors usually meets on the second Monday of each month. In February they hold their annual meeting on the second Tuesday. An official

resolution was read and approved at the meeting on February 13, 2024. The resolution is attached.

ATTACHMENT A
BUDGET DETAIL AND NARRATIVE TEMPLATE

Summary			
6. Budget Object Category	Total Cost	Federal Estimated Amount	Non-Federal Estimated Amount
a. Personnel	$0		
b. Fringe Benefits	$0		
c. Travel	$0		
d. Equipment	$0		
e. Supplies	$0		
f. Contractual	$0		
g. Construction	$2,645,000		
h. Other Direct Costs	$0		
i. Total Direct Costs	$2,645,000		
i. Indirect Charges	$0		
Total Costs	$2,645,000	$863,000	$1,782,000
	Cost Share Percentage	33%	67%

Resolution No. 2024 - 1

Entitled: A RESOLUTION AUTHORIZING SUBMISSION OF A "WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2024 AND FISCAL YEAR 2025" APPLICATION TO THE BUREAU OF RECLAMATION ON BEHALF OF THE GOVERNING BODY FOR THE SIDON IRRIGATION DISTRICT

FOR THE PURPOSE OF:
ENCLOSING PORTIONS OF THE WESTEND LATERALS FOR THE PREVENTION OF EROSION AND WATER LOSS AND TO AID IN EFFICIENT TRANSMISSION SYSTEMS AND TO ASSIST FARMERS TO MAKE ADDITIONAL ON-FARM IMPROVEMENTS IN THE FUTURE.

W I T N E S S E T H

WHEREAS, the Governing Body for the SIDON IRRIGATION DISTRICT desires to participate in the WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2024 AND FISCAL YEAR 2025 program to assist in financing this project; and

WHEREAS, the Governing Body of the SIDON IRRIGATION DISTRICT recognizes the need for the project; and

WHEREAS, the WATERSMART GRANTS: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2024 AND FISCAL YEAR 2025 Grant Program requires that certain criteria be met, as described in:

Bureau of Reclamation Funding Opportunity Announcement No. R24AS00052

governing the program, and to the best of our knowledge, this application meets those criteria.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE

SIDON IRRIGATION DISTRICT, that a grant application in the amount of $ 863,000.00
(name of applicant)

be submitted to the Bureau of Reclamation for consideration to assist in funding the:

SIDON IRRIGATION WESTEND LATERAL REHABILITATION PROJECT

BE IT FURTHER RESOLVED, that MARVIN B. RAGETH, PRESIDENT is hereby designated as the authorized representative of the SIDON IRRIGATION DISTRICT to act on behalf of the Governing Body on all matters relating to this grant application.

PASSED, APPROVED AND ADOPTED THIS 13th day of Feb, 2024.

M B Rageth
Marvin B Rageth, President

K H Blackburn
Kenneth G. Blackburn

C B Crosby
Christopher Crosby, Sec./Treas.

Attest

Leslie Mayes
Leslie Mayes, Office Secretary

SIDON IRRIGATION DISTRICT
WEST END LATERAL PROJECT

February 19,2024

Bureau of Reclamation
Finance Assistance Operations Section
Attn: NOFO Team
PO Box 25007, MS 84-27133
Denver, CO 80225

RE: LETTER OF SUPPORT

To Whom It May Concern:

We the undersigned do hereby support Sidon Irrigation District's West End Lateral Project as it is designed. We would encourage the Bureau to fund this project through the WaterSMART Water and Energy Efficiency Grant for fiscal year 2024. This project will greatly increase the efficiency of our irrigation system in this area and allow us the land owners to install on farm improvements to help us compete in today's economy.

Thank you for your consideration.

Sincerely, Casey Ellis

Sidon Irrigation District Land Owners.

SIDON IRRIGATION DISTRICT
WEST END LATERAL PROJECT

February 19,2024

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Thank you for your consideration.

Sincerely, Spencer Ellis

Sidon Irrigation District Land Owners.

SIDON IRRIGATION DISTRICT
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Thank you for your consideration.

Sincerely, John M. Gamm

Sidon Irrigation District Land Owners.

SIDON IRRIGATION DISTRICT
WEST END LATERAL PROJECT

February 19,2024

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Thank you for your consideration.

Sincerely,

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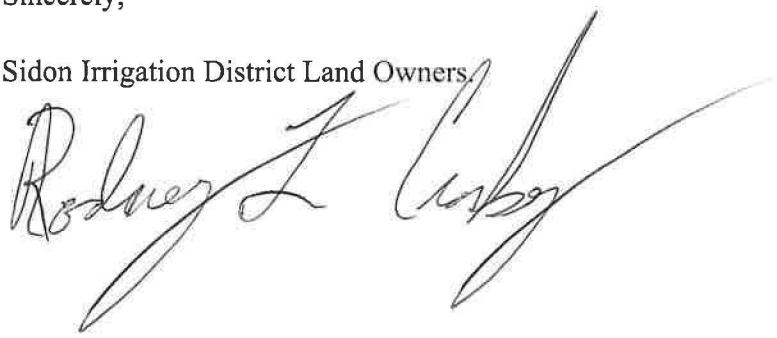
Sidon Irrigation District Land Owners.



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Thank you for your consideration.

Sincerely,

Sidon Irrigation District Land Owners.

Ken Blackburn

SIDON IRRIGATION DISTRICT
WEST END LATERAL PROJECT

February 19,2024

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