

Department of the Interior
Bureau of Reclamation

WaterSMART Grants:
Water and Energy Efficiency Grants for Fiscal Year 2022
No. R22AS00023

LOVELL IRRIGATION DISTRICT
Moncur Lateral PHASE II Rehabilitation Project

Lovell, Wyoming
Big Horn County



LOVELL IRRIGATION DISTRICT
1339 Rd. 11
PO Box 322
Lovell, Wyoming 82431

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**LOVELL IRRIGATION
MONCUR LATERAL PHASE II REHABILITATION PROJECT**

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TECHNICAL PROPOSAL AND EVALUATION CRITERIA

EXECUTIVE SUMMARY

October 29, 2021

Lovell Irrigation District
1339 Road 11
PO Box 322
Lovell, WY 82431
Big Horn County

Category A Applicant

Partnering with a Wyoming Water Development Commission (WWDC) “materials only” Grant, this funding opportunity from The Bureau of Reclamation FOA No. R22AS00023 WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2022, will enable Lovell Irrigation District to complete needed improvements on the **Moncur Lateral Phase II Rehabilitation Project**. Lovell Irrigation is a Category A applicant. The funding would be for installation and engineering, allowing Lovell Irrigation to have the pipe installation executed by a professional company, thereby enabling the irrigation district to perform the important work of maintenance and repair of the canal and other laterals. This project, to receive funding for the materials only in the value of \$990,915.00, has already been submitted and recommended by the Wyoming Water Development Commission (WWDC) Office Staff. The WWDC will make their final decision for funding in late November 2021. As such, with WWDC funding, the 50/50 portion of the FOA would be matched to the degree needed. The amount being requested from BOR is \$ 400,000.00. This funding will be for installation and engineering of burying an existing open channel lateral with 11,067 feet of various sized PVC pipe. This lateral is used to irrigate approximately 1,250 acres of productive farm land located southwest of Lovell, Wyoming, in North Big Horn County.

This project is anticipated to start November 1, 2022 after water has been turned out of the canal, and to be completed April 1, 2023 when water is let into the canal.

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 this frontier 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.

In February, 1900, 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 would be relocated from their present homes to be called upon to build a 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 (Sidon Canal) was constructed.

THE CANALS

The Sidon Project began the morning of May 28, 1900 and was not completed until the spring of 1904.

Permit for the Roane Ditch was filed November 22, 1901. Completion was May 23, 1904 to serve 600 acres. On January 7, 1903 an enlargement application was filed for 2080 more acres. This enlargement was called the Elk Ditch.

On April 10, 1903 an application was filed, by the Lovell Irrigation Company, for a permit to construct a canal that had previously been known as the Roane Ditch, and the Elk Ditch. The final enlargement and extension of this canal was called the Lovell Irrigation Company Canal or the Lovell Canal.

The Lovell Irrigation Company's enlargement of the Roane and Elk ditches required that the whole canal be reconstructed. For about a mile below the newly placed headgate, the construction was particularly heavy. The canal was inspected and recommended for patent on February 23, 1909.

Water rights are adjudicated by the State of Wyoming Engineer's Office.

The Lovell Canal is used for agricultural purposes, currently serving 266 landowners, and 10,857.97 total district acres. Average annual water delivery of 402 acre-feet/acre is assessed.

The types of on-farm irrigation applications are, typically, side roll and flood irrigation.

The main crops being irrigated are sugar beets, barley, corn, and alfalfa.

Water measuring devices currently in use are some weirs and some Parshall flumes at lateral headgates and an ultrasonic meter installed during Phase I of this project.

Annually the total water provided by the system is 107,000 (AF), with a daily demand average of 792 (AF), peaking at 824 (AF). The maximum capacity of this water supply system is 824 (AF/day).

There are approximately 38 miles of Lovell Canal and roughly 7.5 miles of laterals. There have been about 5 miles of piped improvements.

The Moncur Lateral branches from the main canal SW of Lovell and serves approximately 1250 acres of land.

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

Lovell Canal Company / Lovell Irrigation Company / Lovell Irrigation District has had one past project partnership with the Bureau of Reclamation that can be determined at this time: Lovell Irrigation District Moncur Phase I Rehabilitation 2019 Project.

Potential shortfalls in water supply to the Lovell 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;

Project Location

Lovell Irrigation District Moncur Phase II Rehabilitation Project is located in Big Horn County, Wyoming, southwest of the town of Lovell, Wyoming. It is within the boundary of the Lovell Irrigation District as shown on Map A, please see Attachments.

A more detailed map of the project site is shown on the attached Map B.

The project begins from the end of the previous project at 44°46'59." N Latitude and 108°27'5.62"W Longitude; and extends to 44°47'52.82"N Latitude and 108°27'19.2"W Longitude where it ends in an open drain that drains back to the Globe canal.

Technical Project Description

The Lovell Irrigation Moncur Lateral Phase II Rehabilitation Project consists of placing a current open lateral ditch into a closed, buried pipeline. This portion of the lateral will be the second phase in a multi-phase project to completely bury the Moncur Lateral. The lateral starts where Phase I ended. The lateral then runs north along the boundary of existing agricultural land for approximately 6,000 feet, where it crosses Highway 32 and turns in a northwesterly direction for approximately another 1,300 feet. Before the lateral crosses the highway, two other minor laterals branch off and are a part of this project. The Moncur Lateral irrigates approximately 1,250 acres of productive farm land, over 10% of all the land in the district. The length of the lateral that will be placed into pipe for this project is 11,067 feet long. There are numerous turn-outs through this reach of the lateral. The lateral is designed to carry 43cfs of water to deliver to the irrigated land. The preliminary design of the pipeline is for a pressurized system to help accommodate the needs of the irrigators. As most land is irrigated by gated pipe currently, containing the head in the pipeline will enable better use of the gated pipe. There are plans for center pivot sprinkler systems in the future on a portion 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. The climate in this area is an arid climate. Average rainfall for this area is less than 7 inches per year with 40 inches of average evaporation. Open channel flow definitely undergoes a loss by evaporation in warmer weather. This project will eliminate all three of these losses that are now experienced. Another benefit that will come from this 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 \$1,445,740.00. (See the attached Estimate) The District is requesting a grant for \$400,000.00 from the WaterSMART program that will pay for the installation and engineering for the project. The District has already applied for a materials only grant from the Wyoming Water Development program for \$900,915.00. The remaining balance of the project will be paid from assessments and/or loans.

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 as well. 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

<u>Evaluation Criteria: Scoring Summary</u>	Points:
A. Quantifiable Water Savings	28
B. Renewable Energy	20
C. Sustainability Benefits	20
D. Complementing On-Farm Irrigation Improvements	10
E. Planning and Implementation	8
F. Collaboration	6
G: Additional Non-Federal Funding	4
H: Nexus to Reclamation	4
Total	100

A. Quantifiable Water Savings

(1) Canal Lining/Piping

The existing lateral is an earthen ditch 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 all three methods. There is usually excess water that is required in the lateral to ensure that adequate streams of water may be utilized for irrigation. For example, some 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 from through a series of ditches and drains. 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.

Lovell Irrigation District has had two Master Plan studies completed through the Wyoming Water Development Commission in the past. One was completed in 2003 and the other was completed in 2017. Both studies address the Moncur lateral and the need to place this lateral into a pipeline, to aid in the operation of the district. The 2003 study reviewed flow loss in the lateral and showed that there is approximate 9% loss in the lateral. (See Lovell Irrigation District Hydropower Study Level II, date May 1, 2003, prepared by A&H Consulting for the Wyoming Water Development Commission.) This loss was measured using an existing parshall flume in the lateral and then measuring the flow at a location further down the reach. With the flow at 43 cfs as measured by the

staff gauge on the flume, the 9% loss amounts to approximately 4 cfs or 1665 Acre-feet per irrigation year. Placing the lateral in the pipeline will eliminate all the loss that the lateral now experiences. This water savings can then help the rest of the district as the saved water will stay in the canal system for use further down the canal.

This amount of water lost can be re-verified this next irrigation season and included in the report at the end of the project.

(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. Two (2) ultrasonic flow meters will be installed along the lateral to help ensure quantities of water being delivered. As Lovell Irrigation has few measuring devices in their system, this installation will help improve the District's control of the water usage.

(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 two 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 a minimum of 16 VDC. The total then produced on the project will be 32 VDC. 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.

C. Sustainability Benefits

Currently this project resides in an area of extreme 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 in 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 Lovell Irrigation has had mostly reliable access to water, to date. However, Lovell Irrigation 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 1665 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. 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 Moncur Lateral 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 Lovell 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.

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. At this time we are not aware of anyone with a current application for assistance through NRCS regarding the use of center pivots. 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.

E. Planning and Implementation

Lovell 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 the canal system. 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, was accomplished in the Master Plans that were developed with the Wyoming Water Development Commission (available on WWDC website). The rehabilitation of Phase II, which is being applied for, will be the second phase placing this lateral into pipe from the end of the first phase to the end of the lateral. The Board of Directors will regularly review the plan and reevaluate the priority of projects as they improve and maintain their system. Lovell Irrigation 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 has been recommended. Funding to assist in installation will be by this grant application or private lenders and maintenance funds.
2. Complete Design of Project. A preliminary design was done and needs to be developed into final plans and specifications.
3. 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.

4. Bid contract for materials procurement. WWDC has recommended funding all the materials and require a competitive bid process.
5. Bid contract for construction installation. A contractor will be selected through a competitive bid process to install the pipeline.
6. Begin construction.
7. Complete construction.

LOVELL IRRIGATION DISTRICT
 MONCUR LATERAL PHASE II REHABILITATION PROJECT
 PROJECT SCHEDULE

TASK	BEGIN DATE	END DATE
Obtain Funding	Present	1-Jul-22
Final Design of Project	1-Jul-22	1-Sep-22
Bid Materials Contract	1-Oct-22	
Environmental and Cultural Clearance	1-Mar-22	31-Aug-22
Bid Construction Installation	15-Oct-22	
Begin construction	1-Nov-22	
End construction		10-Apr-23
Final Report	1-Jun-23	

F. Collaboration

One of our 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.

Lovell Irrigation District is grateful for the funding opportunities from the Bureau of Reclamation and Department of Interior that facilitate the ability to rehabilitate and maintain a water source that is so crucial to our area.

Lovell Irrigation is dedicated to being 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 make improvements in the lives of all who are impacted. We work with county commissioners as we explain to them the scope of our projects 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 Lovell Irrigation 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. These improvements help landowners as well as farm workers, and people that are in the vicinity to enjoy the outdoor activities.

This project will also help the employees of the district with maintenance and future assignments like water control and usage calculations.

G: Additional Non-Federal Funding

Wyoming Water Development (WWDC) has recommended that \$990,915.00 will be contributed through a grant for materials only. Lovell Irrigation will contribute \$54,825.00 from their budget and maintenance funds. There are no other in-kind contributions.

$$\frac{\$ 1,045,740.00}{\$ 1,445,740.00} = 72.3\%$$

This project has 72.3 % Non-Federal Funds that are recommended to be committed to this project in a Wyoming Water Development Commission (WWDC) "Materials Only" state grant, and Lovell Irrigation District Funding.

H: Nexus to Reclamation Project Activities

- Lovell Irrigation District is connected to several Reclamation projects by way of the Shoshone River source. Lovell Canal receives water from Buffalo Bill Reservoir which spills into the Shoshone River. Any water conserved by Lovell 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 Sidon Irrigation District, the Shoshone Irrigation District; and the Deaver Irrigation District.
- After running its course, as an irrigation canal, the Lovell Canal 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. Yellowtail Dam straddles the border between Wyoming and Montana.
A considerable portion of the Bighorn National Recreation Area 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 River empties into the Yellowstone River. The Yellowstone River empties into the Missouri River, which, in time, empties into the Mississippi River.

Project Budget

Funding Plan and Letters of Commitment

- The non-Federal share of project costs will be obtained through a Wyoming Water Development Commission Grant that is recommended to be awarded to Lovell Irrigation District in the amount of \$990,915.00. This grant is for materials only. The Project Agreement between the WWDC and Lovell Irrigation District will be sent once it is approved and executed. Lovell Irrigation will also provide \$54,825.00 to the project from their budget and maintenance funds.
- The WWDC will disperse funds on the basis of certified requests from Lovell Irrigation District and material invoices. Upon approval of the requests, funds will be electronically transferred to Lovell Irrigation District.
- No in-kind work is being proposed.
- A consultant has been hired by Lovell Irrigation District to design and administer the contracts and grants.
- There will be no costs incurred before the anticipated Project start date that Lovell Irrigation District will seek to include as project costs.
- There will be no other Federal funding sought for.

Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT
Non Federal Entities	
1. Wyoming Water Development Commission	990,915.00
2. Lovell Irrigation District	54,825.00
3.	0.00
Non Federal Entities	1,045,740.00
Other Federal Entities	
1. None	0.00
2	0.00
REQUESTED RECLAMATION FUNDING	400,000.00

Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
Salaries and Wages				
Employee 1				\$
Employee 2				\$
Employee 3				\$
Fringe Benefits				
Full-Time Employees				\$
Part-Time Employees				\$
Travel				
Trip 1				\$
Trip 2				\$
Trip 3				\$
Equipment				
Item A				\$
Item B				\$
Item C				
Contracted Materials				
Successful Bidder				\$990,915.00
Item B				\$
Contractual/Construction				
Successful Bidder(Contractor)				\$334,825.00
Engineering Consultant				\$120,000.00
Other				
Other				
TOTAL DIRECT COSTS				\$
Indirect Costs				
Type of Rate	percentage	\$base		\$
TOTAL ESTMATED PROJECT COSTS				1,445,740.00

See Attachments: LOVELL IRRIGATION DISTRICT MONCUR LATERAL PHASE II REHABILITATION PROJECT ESTIMATE and LOVELL IRRIGATION MONCUR LATERAL PHASE II REHABILITATION PROJECT CONSULTING ENGINEER ESTIMATE.

Budget Narrative

It is the intent of the project to award the work through a competitive bidding process with two separate contracts, one for the materials and one for installation construction. The attached estimate shows a breakdown of the projects estimated costs. The costs shown are based on actual costs of recent projects in the area and engineering judgement. No in-kind work is being proposed. A consultant has been hired by Lovell Irrigation to design and administer the contracts and grants.

Salary and Wages:

This project will be managed through a consultant. Lovell will not be asking for any reimbursement for salary and wages.

Travel:

There will not be any travel by Lovell Irrigation that will be reimbursed through the grant.

Equipment:

There will not be any equipment that Lovell will request a reimbursement on.

Materials and Supplies:

Since the work will be done under contract, there will not be any reimbursement requests under this item. All materials are being paid for by the grant received from Wyoming Water Development Commission which is a materials only grant.

Contractual:

All work done on this project will be done under contract to Lovell Irrigation. The contractor for the materials procurement and the installation of the materials will be selected by competitive bid. A breakdown of the estimated costs for this work is attached for review.

An engineering consultant has been hired by Lovell Irrigation to design, bid, perform construction administration and assist in the required reporting of the funding agencies. Tasks to be performed are preliminary design, surveying, mapping, hydraulic design, final design, prepare plan and profile sheets, prepare specifications, prepare materials bidding documents, conduct bid letting on materials, administer materials contract, stake pipeline, provide installation inspection service, document work completed, prepare required reports for funding agencies.

See Attachment: LOVELL IRRIGATION MONCUR LATERAL PHASE II REHABILITATION PROJECT CONSULTING ENGINEERING ESTIMATE

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. Lovell Irrigation commits to any requirements that these agencies may propose. Copies of letters sent to these agencies regarding this project are attached.

The water delivery system was constructed between the years of 1903 – 1909. This project involves an irrigation lateral. Potential for some minor wetlands is high along the existing lateral channel. The installation of this pipeline will have the effect of disturbing these wetland areas. A letter has been sent to the US Army Corp of Engineers asking for their review of the project and recommendations. It is anticipated at this time that a wetland survey will need to be conducted to quantify the amount of wetlands and then a determination of mitigation that will need to be completed. Lovell Irrigation commits to performing the mitigation required to offset the wetlands disturbed by the project.

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. Lovell Irrigation 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 Lovell Irrigation. This project however does not include any of them in the project area and will not affect the historic value of the facility.

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 for the project area as water will not be available for this plant life to utilize.

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

Required Permits and Approvals

There are four 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.

Letters of Support

Please see Attached Letters of Support 1-10.

Official Resolution

The Lovell Irrigation Board of Directors meets on the second Tuesday of each month. The official resolution was read and approved at the meeting on October 12, 2021. The resolution is attached.



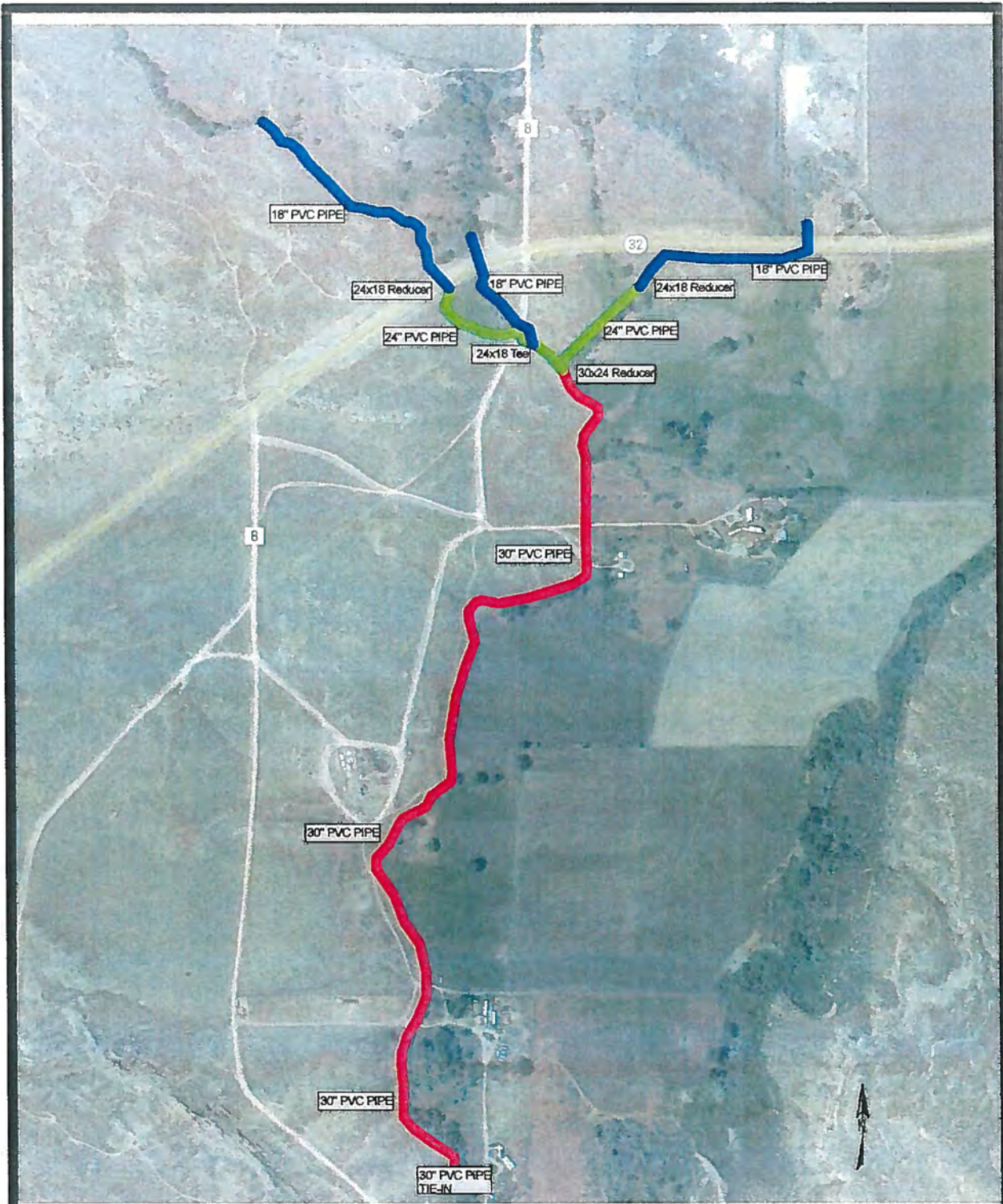
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**PRYOR MOUNTAIN
ENGINEERING**

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**Lovell Irrigation District
Lovell, WY**

Date: Oct 26, 2021
Rev:
Designed by: WE3
Drawn by: TLM



Moncur Lateral Phase 2

(NOT TO SCALE)

B

**PRYOR MOUNTAIN
ENGINEERING**

Pryor Mountain Engineering
William E. Bridges, P.E.
PO Box 671
Cowley, WY 82420
(307) 548-9913

Lovell Irrigation District
Lovell, WY

Date: Oct 28, 2021
Run:
Designed by: WES
Drawn by: TJS



**PRYOR MOUNTAIN
ENGINEERING**

William E. Bridges, P.E.

708 RD 7½ PO Box 671 Cowley, WY 82420 (307)548-9913 fax:(307)548-9903

October 23, 2021

Wyoming State Historic Preservation Society
2301 Central Ave.
Cheyenne, WY 82002

Attn: Historic Preservation Office

Re: Lovell Irrigation District
Moncur Lateral Phase II

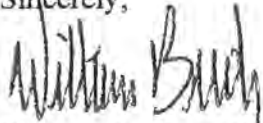
We are requesting your determination of any historic properties that may be affected by our proposed project or if additional surveys are required. Concurrence from your agency is required before we can proceed with our project.

The project in question is located southwest of the Town of Lovell, WY in Big Horn County. All work will be within existing Right-of-Ways that the irrigation district has for the lateral. The work consists of burying an open irrigation lateral and putting it in an enclosed PVC pipe. This phase is approximately 9900 feet long and is shown on the attached map. The project is located in Sections 29, 30 and 31, T 56 N, R 96 W, 6th PM. Our research shows that there are no registered historic sites within the project area. Since the Right-of Way has previously been disturbed by the construction of the existing irrigation lateral and the continual maintenance over the years, we do not anticipate any culture materials to be uncovered during construction.

Please return a reply either via email or USPS indicating whether or not historic properties will be adversely affected by the construction or our project. A map showing the project limits has been included for your review.

If you have any questions, do not hesitate to contact our office at the number shown on the letter head.

Sincerely,



William Bridges, PE
Pryor Mountain Engineering



**PRYOR MOUNTAIN
ENGINEERING**

William E. Bridges, P.E.

708 RD 7½ PO Box 671 Cowley, WY 82420

(307)548-9913

fax:(307)548-9903

October 23, 2021

US Army Corp of Engineers
2232 Dell Range Blvd. Suite 210
Cheyenne, WY 82009

Attn: State Program Manager

Re: Lovell Irrigation District
Moncur Lateral Phase II

We are requesting your determination of any waters of the U.S. and/or wetlands that may be affected by our proposed project. Concurrence from your agency is required before we can proceed with our project.

The project in question is located southwest of the Town of Lovell, WY in Big Horn County. All work will be within existing Right-of-Ways that the irrigation district has for the lateral. The work consists of burying an open irrigation lateral and putting it in an enclosed PVC pipe. This phase is approximately 9900 feet long and is shown on the attached map. The project is located in Sections 29, 30 and 31, T 56 N, R 96 W, 6th PM. Our research shows that none of the work is within floodplains. It is expected that since it is an existing open irrigation lateral that there will be some wetlands involved.

Please return a reply either via email or USPS indicating whether or not any waters of the U.S. and/or wetlands will be adversely affected by the construction or our project. A map showing the project limits has been included for your review.

If you have any questions, do not hesitate to contact our office at the number shown on the letter head.

Sincerely,



William Bridges, PE
Pryor Mountain Engineering



**PRYOR MOUNTAIN
ENGINEERING**

William E. Bridges, P.E.

708 RD 7½ PO Box 671 Cowley, WY 82420

(307)548-9913

fax:(307)548-9903

October 23, 2021

US Fish and Wildlife Service
5353 Yellowstone Road, Suite 308A
Cheyenne, WY 82009

Attn: Field Supervisor

Re: Lovell Irrigation District
Moncur Lateral Phase II

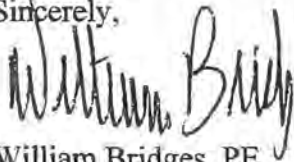
We are requesting your determination of any threatened or endangered species or species of concern that may be affected by our proposed project. Concurrence from your agency is required before we can proceed with our project.

The project in question is located southwest of the Town of Lovell, WY in Big Horn County. All work will be within existing Right-of-Ways that the irrigation district has for the lateral. The work consists of burying an open irrigation lateral and putting it in an enclosed PVC pipe. This phase is approximately 9900 feet long and is shown on the attached map. The project is located in Sections 29, 30 and 31, T 56 N, R 96 W, 6th PM. Our research shows that none of the work would affect any animals on the federal threatened and endangered species list.

Please return a reply either via email or USPS indicating whether or not any threatened or endangered species or species of concern will be adversely affected by the construction of our project. A map showing the project limits has been included for your review.

If you have any questions, do not hesitate to contact our office at the number shown on the letter head.

Sincerely,



William Bridges, PE
Pryor Mountain Engineering



**PRYOR MOUNTAIN
ENGINEERING**

William E. Bridges, P.E.

708 RD 7½ PO Box 671 Cowley, WY 82420

(307)548-9913

fax:(307)548-9903

October 23, 2021

Wyoming Game and Fish
5400 Bishop Boulevard
Cheyenne, WY 82006

Attn: Habitat Protection Coordinator

Re: Lovell Irrigation District
Moncur Lateral Phase II

We are requesting your determination of any wildlife and/or habitat that may be affected by our proposed project. Concurrence from your agency is required before we can proceed with our project.

The project in question is located southwest of the Town of Lovell, WY in Big Horn County. All work will be within existing Right-of-Ways that the irrigation district has for the lateral. The work consists of burying an open irrigation lateral and putting it in an enclosed PVC pipe. This phase is approximately 9900 feet long and is shown on the attached map. The project is located in Sections 29, 30 and 31, T 56 N, R 96 W, 6th PM. Our research shows that none of the work would affect a crucial big game habitat or any other habitat including sage grouse that would require a biological assessment.

Please return a reply either via email or USPS indicating whether or not any wildlife and/or habitat will be adversely affected by the construction or our project. A map showing the project limits has been included for your review.

If you have any questions, do not hesitate to contact our office at the number shown on the letter head.

Sincerely,



William Bridges, PE
Pryor Mountain Engineering

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

To Whom It May Concern:

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

I believe this funding request is important in many ways, but I am especially interested in what it will improve for our district. It will cut down on some of the maintenance work needed each year. It will also cut down on water loss from seepage and evaporation. This allows water to be used where intended along this lateral.

I believe this request is important because it will be a change for the better, to do away with the open waterways that result in water loss through evaporation and seepage. It will help the way that we, as farmers, use water for our irrigation.

This canal has been a needed source of irrigation water since its construction in the early 1900's. Lining this lateral with pipe will be a much needed improvement.

Please give this proposal full consideration so that the Lovell Irrigation District can continue to upgrade our system by work on this project.

Sincerely,

A handwritten signature in black ink that reads "Brad Moody". The signature is written in a cursive style with a long, sweeping tail on the "y".

Brad Moody
President – Lovell Irrigation
1420 Rd 9
Lovell, WY 82431
307-548-6307

**LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT**

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

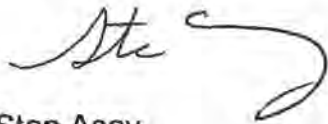
To Whom It May Concern,

I am writing this in support of the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project. We are grateful for the opportunity to get assistance with our irrigation challenges.

I believe this request is very important to improve getting irrigation water to our local farms. My farm is on the end of the canal and any water savings in the system really can be a significant benefit to my operations, and the operation of other farms.

Please give this project the funding to be successful and if I can answer anything further please let me know. I may be reached at (307)548-6422.

Sincerely,



Stan Asay
Secretary – Lovell Irrigation District
1148 Rd 18
Lovell, Wyoming 82431
(307)548-6422

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

To Whom It May Concern,

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

This funding will help our farming operations by allowing us to have a more reliable water supply.

Please give this proposal your full consideration

Sincerely, *Glen Howe*

Glen Howe
Big Horn Cattle Company, Inc.
1374 Road 8
Lovell, WY 82431

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

To Whom It May Concern,

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

This funding will help our farming operations by allowing us to have a more reliable water supply.

Please give this proposal your full consideration

Sincerely,



Janice L. Clark
1290 Rd. 9
Lovell, WY 82431

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225


To Whom It May Concern,

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

This funding will help our farming operations by allowing us to have a more reliable water supply.

Please give this proposal your full consideration

Sincerely,

A handwritten signature in cursive script that reads "Sharon G. Roth".

Sharon Roth
398 HWY 32
Lovell, WY 82431

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

To Whom It May Concern,

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

This funding will help our farming operations by allowing us to have a more reliable water supply.

Please give this proposal your full consideration

Sincerely,

A handwritten signature in black ink that reads "Ray Lawless". The signature is written in a cursive, flowing style.

Ray Lawless
1282 Road 9
Lovell, WY 82431

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

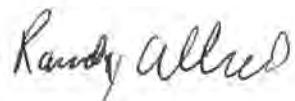
To Whom It May Concern,

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

This funding will help our farming operations by allowing us to have a more reliable water supply.

Please give this proposal your full consideration

Sincerely,

A handwritten signature in black ink that reads "Randy Allred". The signature is written in a cursive, slightly slanted style.

Randy Allred
842 Lane 13
Lovell, WY 82431

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

To Whom It May Concern,

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

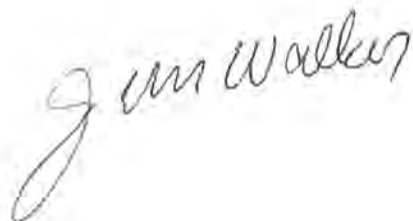
Because we are a small irrigation district, it is very important to find financial assistance in doing these projects. Our farms cannot survive without the water we get through our irrigation district; and the improvements we do now will help generations of growers to come. We are grateful for these opportunities, from the Bureau of Reclamation, that helps us obtain assistance..

This funding will help our farming operations by allowing us to have a more reliable water supply.

Please give this proposal your full consideration

Sincerely,

Jim Walker
1255 Rd 8 ½
Lovell, WY 82431

A handwritten signature in cursive script that reads "Jim Walker". The signature is written in dark ink and is positioned to the right of the typed name and address.

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

To Whom It May Concern:

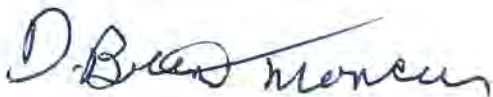
I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project. I believe that receiving this funding is very important to improving the irrigated acres that this lateral services.

It is vital to help farmers get water for irrigation in the best ways that we can. Farming is essential to this area of the Big Horn Basin, and the water that comes from the Lovell Irrigation District is essential to that existence.

The improvements to our water system will help us to be successful in our farming seasons.

Please give this project the funding it needs to move forward.

Sincerely,

A handwritten signature in black ink that reads "Brent Moncur". The signature is written in a cursive style with a long horizontal stroke extending from the end of the name.

Brent Moncur
1338 Road 9
Lovell, WY 82431
(307)548-7761

LOVELL IRRIGATION DISTRICT
MONCUR LATERAL PHASE II REHABILITATION PROJECT

Bureau of Reclamation
Financial Assistance Operations
NOFO Team
Denver Federal Center
Bldg. 67, Rm. 152
6th Avenue and Kipling Street
PO Box 25007, MS 84-27133
Denver, CO 80225

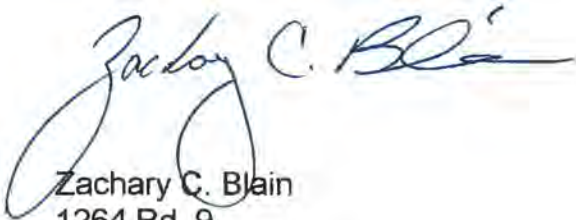
To Whom It May Concern,

I support the Lovell Irrigation District Moncur Lateral Phase II Rehabilitation Project.

This funding will help our farming operations by allowing us to have a more reliable water supply.

Please give this proposal your full consideration

Sincerely,

A handwritten signature in blue ink that reads "Zachary C. Blain". The signature is fluid and cursive, with the first name being the most prominent.

Zachary C. Blain
1264 Rd. 9
Lovell, WY 82431

Entitled: A RESOLUTION AUTHORIZING SUBMISSION OF A "WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2022" APPLICATION TO THE BUREAU OF RECLAMATION ON BEHALF OF THE GOVERNING BODY FOR THE LOVELL IRRIGATION DISTRICT

FOR THE PURPOSE OF: ENCLOSING PORTIONS OF THE MONCUR LATERAL FOR THE PREVENTION OF EROSION AND WATER LOSS AND TO AID IN EFFICIENT TRANSMISSION SYSTEMS

WITNESSETH

WHEREAS, the Governing Body for the LOVELL IRRIGATION DISTRICT desires to participate in the WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2022 program to assist in financing this project; and

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

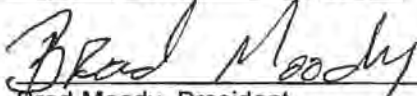
WHEREAS, the WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2022 Grant program requires that certain criteria be met, as described in the Bureau of Reclamation Funding Opportunity Announcement No. R22AS00023 governing the program, and to the best of our knowledge, this application meets those criteria.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE
LOVELL IRRIGATION DISTRICT, that a grant application in the amount of \$ 400,000.00 be submitted to the Bureau of Reclamation for consideration to assist in funding the

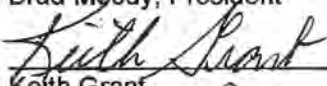
LOVELL IRRIGATION DISTRICT MONCUR LATERAL PHASE II REHABILITATION PROJECT,
and that Lovell Irrigation has the capability to provide matching funds and meet established deadlines as required.

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

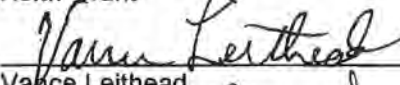
PASSED, APPROVED AND ADOPTED THIS 12th day of October, 2021.



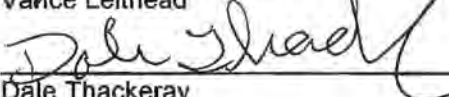
Brad Moody, President



Keith Grant



Vance Leithead



Dale Thackeray

Attest



Stan Asay, Secretary/Treasurer



William E. Bridges, P.E.

P.O. Box 671 Cowley, WY 82420

willieb@pryormtneng.com (307) 548-9913

8/27/2021

Moncur Lateral -PHASE II, 2021

Estimate For Materials Only				
Items	Units	Quantity	Unit Price	Total
30" SDR-51 Pipe	LF	5,216	\$80.00	\$417,280.00
24" 80 PSI Pipe	LF	1,467	\$50.00	\$73,350.00
18" 80 PSI Pipe	LF	3,244	\$28.00	\$90,832.00
12" 80 PSI Pipe	LF	1,140	\$15.50	\$17,670.00
2" Air/Vac Assembly	EA	6	\$600.00	\$3,600.00
Ultra-Sonic Flow Meters Assembly	EA	3	\$9,500.00	\$28,500.00
30x24x30 Tee	EA	1	\$3,800.00	\$3,800.00
30x18x30 Tee	EA	1	\$3,500.00	\$3,500.00
30x12x30 Tee	EA	10	\$3,200.00	\$32,000.00
24x18x24 Tee	EA	1	\$2,500.00	\$2,500.00
24x12x24 Tee	EA	2	\$2,200.00	\$4,400.00
18x18x18 Tee	EA	1	\$1,000.00	\$1,000.00
18x12x18 Tee	EA	2	\$900.00	\$1,800.00
30"-45° Elbow	EA	14	\$2,600.00	\$36,400.00
30"-30° Elbow	EA	10	\$2,600.00	\$26,000.00
24"-45° Elbow	EA	2	\$2,200.00	\$4,400.00
24"-30° Elbow	EA	3	\$2,200.00	\$6,600.00
18"-45° Elbow	EA	10	\$950.00	\$9,500.00
18"-30° Elbow	EA	5	\$950.00	\$4,750.00
12"-45° Elbow	EA	24	\$325.00	\$7,800.00
30x24 Reducer	EA	2	\$1,600.00	\$3,200.00
24x18 Reducer	EA	2	\$1,200.00	\$2,400.00
24" Fresno Gate Valve	EA	2	\$7,000.00	\$14,000.00
18" Fresno Gate Valve	EA	5	\$2,400.00	\$12,000.00
12" Fresno Gate Valve	EA	14	\$1,200.00	\$16,800.00
12" PIP To Gated Pipe Adapter	EA	14	\$100.00	\$1,400.00
Bollards	EA	28	\$300.00	\$8,400.00
Concrete	CY	100	\$200.00	\$20,000.00
Steel	LBS	3,200	\$2.25	\$7,200.00
Trace Wire	LF	11,000	\$0.75	\$8,250.00
Bedding Material	CY	900	\$35.00	\$31,500.00

Estimate For The Cost to Install				
Items	Units	Quantity	Unit Price	Total
30" SDR-51 Pipe	LF	5,216	\$25.00	\$130,400.00
24" 80 PSI Pipe	LF	1,467	\$25.00	\$36,675.00
18" 80 PSI Pipe	LF	3,244	\$25.00	\$81,100.00
12" 80 PSI Pipe	LF	1,140	\$25.00	\$28,500.00
2" Air/Vac Assembly	EA	6	\$175.00	\$1,050.00
Ultra-Sonic Flow Meters Assembly	EA	3	\$200.00	\$600.00
30x24x30 Tee	EA	1	\$90.00	\$90.00
30x18x30 Tee	EA	1	\$90.00	\$90.00
30x12x30 Tee	EA	10	\$90.00	\$900.00
24x18x24 Tee	EA	1	\$90.00	\$90.00
24x12x24 Tee	EA	2	\$90.00	\$180.00
18x18x18 Tee	EA	1	\$90.00	\$90.00
18x12x18 Tee	EA	2	\$90.00	\$180.00
30"-45° Elbow	EA	14	\$100.00	\$1,400.00
30"-30° Elbow	EA	10	\$100.00	\$1,000.00
24"-45° Elbow	EA	2	\$100.00	\$200.00
24"-30° Elbow	EA	3	\$100.00	\$300.00
18"-45° Elbow	EA	10	\$100.00	\$1,000.00
18"-30° Elbow	EA	5	\$100.00	\$500.00
12"-45° Elbow	EA	24	\$100.00	\$2,400.00
30x24 Reducer	EA	2	\$65.00	\$130.00
24x18 Reducer	EA	2	\$65.00	\$130.00
24" Fresno Gate Valve	EA	2	\$300.00	\$600.00
18" Fresno Gate Valve	EA	5	\$200.00	\$1,000.00
12" Fresno Gate Valve	EA	14	\$100.00	\$1,400.00
12" PIP To Gated Pipe Adapter	EA	14	\$10.00	\$140.00
Bollards	EA	28	\$10.00	\$280.00
Concrete	CY	100	\$250.00	\$25,000.00
Steel	LBS	3,200	\$1.50	\$4,800.00
Trace Wire	LF	11,000	\$0.10	\$1,100.00
Bedding Material	CY	900	\$15.00	\$13,500.00

Estimate Total	\$900,832.00
10% Contingency	\$90,083.00
Total Materials	\$990,915.00

ESTIMATE TOTAL	\$334,825.00
ENGINEERING	\$120,000.00
TOTAL INSTALLATION	\$454,825.00

TOTAL PROJECT ESTIMATE
\$1,445,740.00



William E. Bridges, P.E.

708 RD 7 1/2 PO Box 671 Cowley, WY 82420 (307)548-9913 fax:(307)548-9903

**LOVELL IRRIGATION DISTRICT MONCUR LATERAL PHASE II REHABILITATION PROJECT
CONSULTING ENGINEERING ESTIMATE**

TA5K	PERSONNEL	HOURS	RATE	TOTAL	EQUIPMENT	HOURS	RATE	TOTAL	
DESIGN PHASE									
SURVEY	Principle Engineer	2	\$ 105.00	\$ 210.00					
	Engineering Tech I	16	\$ 83.00	\$ 1,328.00	GPS UNIT	16	\$ 35.00	\$ 560.00	
	Engineering Tech II	16	\$ 61.00	\$ 976.00					
Stake Control	Principle Engineer	1	\$ 105.00	\$ 105.00					
	Engineering Tech I	8	\$ 83.00	\$ 664.00	GPS UNIT	8	\$ 35.00	\$ 280.00	
	Engineering Tech II	8	\$ 61.00	\$ 488.00					
Set Grade	Principle Engineer	2	\$ 105.00	\$ 210.00					
	Engineering Tech I	8	\$ 83.00	\$ 664.00	GPS UNIT	8	\$ 35.00	\$ 280.00	
	Engineering Tech II	8	\$ 61.00	\$ 488.00					
Stake Alignment	Engineering Tech I	20	\$ 83.00	\$ 1,660.00	GPS UNIT	20	\$ 35.00	\$ 700.00	
	Engineering Tech II	20	\$ 61.00	\$ 1,220.00					
DESIGN									
Hydraulic Modeling	Engineering Tech I	20	\$ 83.00	\$ 1,660.00					
	Engineering Tech II	10	\$ 61.00	\$ 610.00					
Finalize Hydraulic Design	Engineering Tech I	8	\$ 83.00	\$ 664.00					
	Engineering Tech II	8	\$ 61.00	\$ 488.00					
Environmental Review & Reports	Principle Engineer	60	\$ 105.00	\$ 6,300.00					
	Engineering Tech I	20	\$ 83.00	\$ 1,660.00					
50% Design Meeting	Principle Engineer	2	\$ 105.00	\$ 210.00					
	Engineering Tech I	2	\$ 83.00	\$ 166.00					
	Engineering Tech II	2	\$ 61.00	\$ 122.00					
FINAL DESIGN									
Prepare Plan Sheets	Engineering Tech I	40	\$ 83.00	\$ 3,320.00					
	Engineering Tech II	40	\$ 61.00	\$ 2,440.00					
Develop Specifications	Engineering Tech I	20	\$ 83.00	\$ 1,660.00					
	Engineering Tech II	20	\$ 61.00	\$ 1,220.00					
90% Design Meeting	Principle Engineer	2	\$ 105.00	\$ 210.00					
	Engineering Tech I	2	\$ 83.00	\$ 166.00					
Final Drawings	Engineering Tech I	40	\$ 83.00	\$ 3,320.00					
	Engineering Tech II	40	\$ 61.00	\$ 2,440.00					
Final Specifications	Engineering Tech I	20	\$ 83.00	\$ 1,660.00					
	Engineering Tech II	20	\$ 61.00	\$ 1,220.00					
TOTAL DESIGN PHASE				\$ 37,549.00					
BIDDING PHASE									
Bid advertisement	Engineering Tech I	2	\$ 83.00	\$ 166.00					
Pre-Bid Meeting & Addendums	Principle Engineer	8	\$ 105.00	\$ 840.00					
	Engineering Tech I	8	\$ 83.00	\$ 664.00					
Answer Questions	Principle Engineer	12	\$ 105.00	\$ 1,260.00					
	Engineering Tech I	12	\$ 83.00	\$ 996.00					
Bid Letting	Principle Engineer	2	\$ 105.00	\$ 210.00					
	Engineering Tech I	2	\$ 83.00	\$ 166.00					
Analysis of Bids & Recommendation	Principle Engineer	7	\$ 105.00	\$ 735.00					
TOTAL BIDDING PHASE				\$ 5,037.00					
CONSTRUCTION PHASE									
Construction Staking	Principle Engineer	5	\$ 105.00	\$ 525.00					
	Engineering Tech I	20	\$ 83.00	\$ 1,660.00	GPS UNIT	20	\$ 35.00	\$ 700.00	
	Engineering Tech II	20	\$ 61.00	\$ 1,220.00					
Pre-construction Meeting	Principle Engineer	2	\$ 105.00	\$ 210.00					
	Engineering Tech I	2	\$ 83.00	\$ 166.00					
Submittal Review	Engineering Tech I	30	\$ 83.00	\$ 2,490.00					
Inspection Services - RPR	Engineering Tech I	320	\$ 83.00	\$ 26,560.00					
	Engineering Tech II	320	\$ 61.00	\$ 19,520.00					
Reporting	Engineering Tech I	20	\$ 83.00	\$ 1,660.00					
Construction Administration	Principle Engineer	120	\$ 105.00	\$ 12,600.00					
	Engineering Tech I	40	\$ 83.00	\$ 3,320.00					
Substantial Completion/Close Out	Principle Engineer	20	\$ 105.00	\$ 2,100.00					
	Engineering Tech I	20	\$ 83.00	\$ 1,660.00					
Record Drawings	Engineering Tech I	20	\$ 61.00	\$ 1,220.00					
TOTAL CONSTRUCTION PHASE				\$ 74,911.00					
				PERSONNEL TOTAL	\$ 117,497.00	EQUIPMENT TOTAL			\$ 2,520.00
				TOTAL ENGINEERING	\$ 120,017.00				
				FDR ESTIMATE TOTAL ENGINEERING	\$ 120,000.00				