

Bureau of Reclamation  
Managing Water in the West

WaterSMART Grants:  
Water and Energy Efficiency Grants for Fiscal Year 2018  
No. BOR-DO-19-F004

# **LOVELL IRRIGATION DISTRICT**

## **Moncur Lateral Phase I Project**

**Lovell, Wyoming**  
**Big Horn County**



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

**LOVELL IRRIGATION BOARD OF DIRECTORS**

**Brad Moody - President**  
**Stan Asay – Treasurer**  
**Keith Grant**  
**Dale Thackery**  
**Vance Leithead**

**Project Manager:**  
**Pryor Mountain Engineering**  
**William E. Bridges**  
**PO Box 671**  
**Cowley, WY 82420**  
**307-548-9913**  
**willieb@pryormtneng.com**

**LOVELL IRRIGATION  
MONCUR LATERAL PHASE I PROJECT**

**Table of Contents**

|  | Page              |
|--|-------------------|
| <b>Mandatory Federal Forms</b>                               |                   |
| SF-424 Application for Federal Assistance                    |                   |
| SF-424 C Budget Information                                  |                   |
| SF-424 D Assurances  |                   |
| SF-LLL Disclosure of Lobbying Activities (if applicable)     |                   |
| <b>Technical Proposal and Evaluation Criteria</b>            |                   |
| Executive Summary.....                                       | 3                 |
| Background Data.....   | 4 - 5             |
| Project Location.....  | 5                 |
| Technical project description.....                           | 5 - 6             |
| Evaluation criteria.....                                     | 7 - 10            |
| <b>Project Budget</b> .....                                  | <b>11- 13</b>     |
| Funding plan and letters of commitment.....                  | 11                |
| Budget proposal.....   | 12                |
| Budget narrative.....  | 12 - 13           |
| <b>Environmental and cultural resources compliance</b> ..... | <b>13 - 14</b>    |
| <b>Required Permits or Approvals</b> .....                   | <b>14</b>         |
| <b>Letters of Support</b> .....                              | (See Attachments) |
| <b>Official Resolution</b> .....                             | (See Attachments) |

## **TECHNICAL PROPOSAL AND EVALUATION CRITERIA**

### **EXECUTIVE SUMMARY**

March 16, 2019

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

Joining with a Wyoming Water Development Commission (WWDC) “materials only” Grant, this funding opportunity from The Bureau of Reclamation FOA No. BOR-DO-19-F004 WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2019, will enable Lovell Irrigation District to complete needed improvements on the Moncur Lateral Phase I Project. This 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 already has been selected by the WWDC to receive funding for the materials in the value of \$1,690,000.00. As such, the 50/50 portion of the FOA has been matched to the degree needed. The amount being requested from BOR is \$ 300,000.00.

This grant will be for installation and engineering of burying an existing open channel lateral with 8750 feet of various sized PVC pipe. This lateral is used to irrigate approximately 900 acres of productive farm land located Southwest of Lovell, Wyoming, in North Big Horn County.

This project is anticipated to start November 1, 2019 after water has been turned out of the canal, and to be completed April 2019, when water is let into the canal.

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

## Background Data

### THE BEGINNING

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.

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 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 (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. On September 9, 1931 by Court Order, Lovell Irrigation District was formed.

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 assessed 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.

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 3 miles of piped improvements.

The Moncur Lateral branches from the main canal SW of Lovell and serves approximately 900 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 no past project partnerships with the Bureau of Reclamation that can be determined at this time.

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 Rehabilitation 2019 Project is located in Big Horn County, Wyoming. It is within the boundary of the Lovell Irrigation District as shown on Map A, please see Attachments.

It is southwest of the town of Lovell, Wyoming, as shown on Map B, please see Attachments.

The project begins from the Lovell Canal at 44°46'01.67" N Latitude and 108°27'05.40"W Longitude; and extends to 44°46'54.38"N Latitude and 108°27'05.40"W Longitude where it connects to an open ditch.

### **Technical project description**

The Lovell Irrigation Moncur Lateral Phase I Project consists of placing a current open lateral ditch into a closed, buried pipeline. This portion of the lateral will be the first phase in a multi-phase project to completely bury the Moncur Lateral. The lateral starts at a turnout in the Lovell-Elk Canal located southeast of the Town of Lovell. The lateral then runs east along Big Horn County Road 9 ½ for approximately 2700 feet where it turns in a northerly direction for approximately another 10,300 feet. The Moncur Lateral irrigates approximately 900 acres of productive farm land, close to 10% of all the land in the district. The length of the lateral that will be placed into pipe for this project is 8750 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. Plans are for center pivot sprinkler systems for 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 grows along this ditch bank also using water that would be desirable for crops instead. The climate in this area is 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 are now experienced. Another benefit that will come from the project is the elimination of erosion of the channel in some locations and the depositing 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 \$2,013,340.00. (See attached Estimate) The District is requesting a grant for \$300,000.00 from the Water Smart program that will pay for the installation and engineering for the project. The District has already secured a materials only grant from the Wyoming Water Development program for \$1,670,000.00. 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. A savings of both money and water that can be used in the future to assist the district in providing adequate and reliable water to the users.

## Evaluation Criteria

| <b><u>Evaluation Criteria: Scoring Summary</u></b>      | <b>Points:</b> |
|---|----------------|
| <b>A. Quantifiable Water Savings</b>                    | <b>30</b>      |
| <b>B. Water Supply Reliability</b>                      | <b>18</b>      |
| <b>C. Implementing Hydropower</b>                       | <b>18</b>      |
| <b>D. Complementing On-Farm Irrigation Improvements</b> | <b>10</b>      |
| <b>E. Department of Interior Priorities</b>             | <b>10</b>      |
| <b>F. Implementation and Results</b>                    | <b>6</b>       |
| <b>G: Nexus to Reclamation Project Activities</b>       | <b>4</b>       |
| <b>H: Additional Non-Federal Funding</b>                | <b>4</b>       |
| <b>Total</b>  | <b>100</b>     |

### 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. Although this project will not directly address this inefficiency, it will be resolved by the closed pipe that will be installed.

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 in 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 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 out 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 – For Municipal Metering Projects

(4) Turf Removal - Not Applicable To This Project

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

## **B. Water Supply Reliability**

- 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 all of the water that they have needed.

- The possibility of future water conservation improvements by other water users are enhanced by completion of this project. There are some “next generation” farmers working along the Lovell Canal 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 look forward to finding solutions in other areas of the system to develop.

- This project will help alleviate problems such as evaporation – especially in hot months, seepage that occurs, and unwanted weed/plant growth. It will allow less water to be taken from the main canal so that farmers further down the system will have more reliability in their needs.

- There is always the fear of lower flows such as shortages due to drought, increased demand because of weather, or reduced deliveries occurring because of matters upstream. The Lovell Canal access to water has been mostly reliable, to date. There have been a few interruptions due to critical work that needed to be done. Lovell Canal users, for the most part, are good neighbors and rarely have the need to have tension or conflict over the availability of their water.

- Cutting down on the needed water, by eliminating the losses to this lateral, will make more water available to users further downstream. All in all, the conserved water from this project will help anyone, extending to the Mississippi and beyond, who needs and uses it along the way.

- Wyoming Water Development (WWDC) will be contributing \$1,670,000.00 for materials only. There are no other in-kind contributions.

- 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 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.

- The project has no applicability to Indian tribes as there are none within the immediate area of this project. There are tribal lands further downstream as the water goes from the Bighorn River/ Bighorn National Recreation Area to Yellowtail Dam.



- This project will not have an impact on species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance) that do not reside in this area. There may be minor impacts to general species found in the area that have used the open waterway for a habitat. However, there are many nearby areas for them to find a new habitation alternatively.
- This project addresses reliability in the system by not allowing evaporation, seepage, or unnecessary plant growth along open banks of water flow.

### **C. Implementing Hydropower**

This does not apply to this project.

### **D. Complementing On-Farm Irrigation 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.

### **E. Department of the Interior Priorities**

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 funding opportunities from the Bureau of Reclamation and Department of Interior that facilitate the ability to rehabilitate and maintain a water source 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 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 White House Public/Private Partnership Initiative by rehabilitation of an irrigation lateral that will modernize a section of the Lovell Irrigation District and make improvements to evaporation loss, ground seepage, 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.

### **F. Implementation and Results**

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. The rehabilitation of Phase I that is being applied for will be the first phase placing this lateral in pipe from the canal to its end.

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 in this FOA.

**G: 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. 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.

**H: Additional Non-Federal Funding**

$$\frac{\$ 300,000.00}{\$ 2,013,340.00} = 14.9\%$$

This project has 85.1 % Non-Federal Funds that are already committed to this project in a Wyoming Water Development Commission (WWDC) "Materials Only" state grant, and Lovell Irrigation District Funding.

**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 has already been awarded to Lovell Irrigation District in the amount of \$1,670,000.00. This grant is for materials only. The Project Agreement between WWDC & LOVELL Irrigation District will be sent once it is executed.
- 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.

**Table 1. – Funding Plan - Funding Sources**

LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL PROJECT PHASE I

| FUNDING SOURCES                      | AMOUNT          |
|--------------------------------------|-----------------|
| Non Federal Entities                 |                 |
| Wyoming Water Development Commission | \$ 1,670,000.00 |
| Lovell Irrigation District           | \$ 43,340.00    |
|                                      |                 |
| Total Non Federal                    | \$ 1,713,340.00 |
|                                      |                 |
| Other Federal Entities               |                 |
| None                                 |                 |
|                                      |                 |
| REQUESTED RECLAMATION FUNDING        | \$ 300,000.00   |

## Budget Proposal

**Table 2.—Budget Proposal**

LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL PROJECT PHASE I

16-Mar-19

| BUDGET ITEM DESCRIPTION     | UNIT COST   | QUANTITY | UNIT | TOTAL COST             |
|-----------------------------|-------------|----------|------|------------------------|
| <b>SALARIES AND WAGES</b>   |             |          |      |                        |
| Contract Lead Man/Operator  | \$ 45.00    | 600      | HR   | \$ 27,000.00           |
| Contract Equipment Operator | \$ 40.00    | 600      | HR   | \$ 24,000.00           |
| Contract Labor              | \$ 35.00    | 600      | HR   | \$ 21,000.00           |
| Contract Labor              | \$ 35.00    | 600      | HR   | \$ 21,000.00           |
| <b>EQUIPMENT</b>            |             |          |      |                        |
| Excavator                   | \$ 9,000.00 | 3        | Mth  | \$ 27,000.00           |
| Backhoe                     | \$ 2,500.00 | 3        | Mth  | \$ 7,500.00            |
| Telehandler                 | \$ 3,000.00 | 3        | Mth  | \$ 9,000.00            |
| <b>CONTRACTS</b>            |             |          |      |                        |
| Material Contract           |             | 1        | LS   | \$ 1,670,000.00        |
| Engineering Consultant      |             | 1        | LS   | \$ 206,840.00          |
| <b>TOTAL PROJECT COSTS</b>  |             |          |      | <b>\$ 2,013,340.00</b> |

See Attachments: LOVELL IRRIGATION MONCUR LATERAL PHASE I PROJECT CONSULTING ENGINEER ESTIMATE FOR MATERIALS ONLY.

### Budget Narrative

It is the intent of the project to award the work for procuring the material through a competitive bidding process. Installation of the materials may be through the same competitive bidding process or the district may choose to do the installation with rented equipment and contracted labor. The attached estimate shows a breakdown of the projects estimated costs. All the costs shown are based on actual costs of recent projects we have been associated with 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 Irrigation will be hiring contract labor to assist in the installation of the materials. The four positions are listed on the budget sheet provided. The rates are estimated from current rated found in the area for this type of work.

#### Travel:

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

#### Equipment:

Lovell Irrigation will request reimbursement for rental of equipment necessary to install the materials for this project. The budget sheet show the three pieces of equipment that will be rented on a monthly basis for the work. It is estimated that a crew of four will be able to average 150 feet of pipeline a day. That rate allows the work to be done in 3 months' time.

#### 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:

The contractor for the materials procurement will be selected by competitive bid. A breakdown of the estimated costs for this work is attached for review. The materials will all be paid for by a materials only grant from the Wyoming Water Development Commission.

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 I PROJECT CONSULTING ENGINEERING ESTIMATE

### **Environmental and Cultural Resources Compliance**

There are no listed or proposed-to-be listed; as a 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. A letter to the NRCS was sent asking for any concerns that they might have.

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 and 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 become not available for this plant life to utilize.

Please see attached Letters to the US Fish and Wildlife and Wyoming Game and Fish Department.

### **Required Permits and Approvals**

There are two established road crossings within the periphery of this project. Permitting from the Big Horn County Engineer 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. 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**

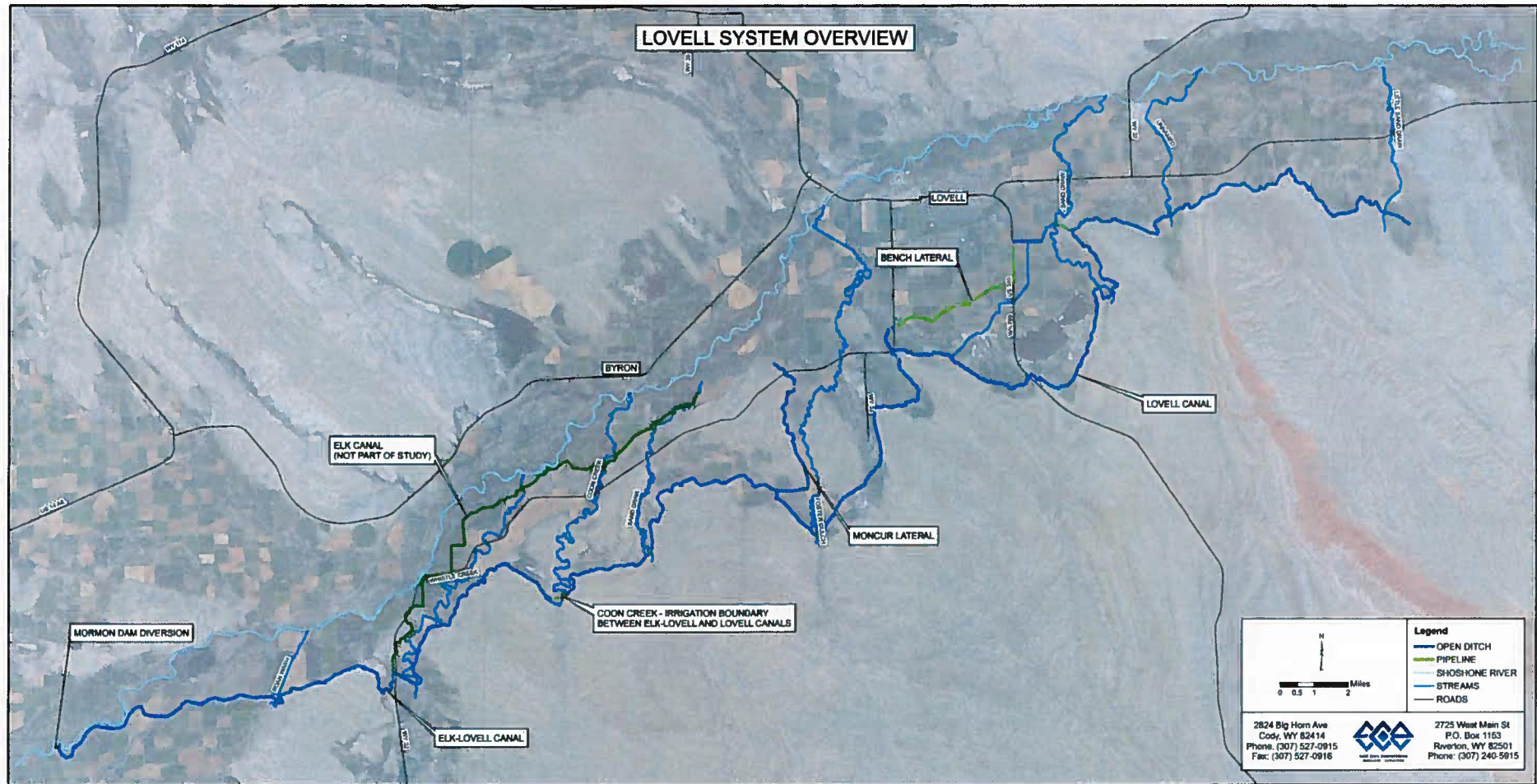
Please see Attached Letters of Support 1-8.

### **Official Resolution**

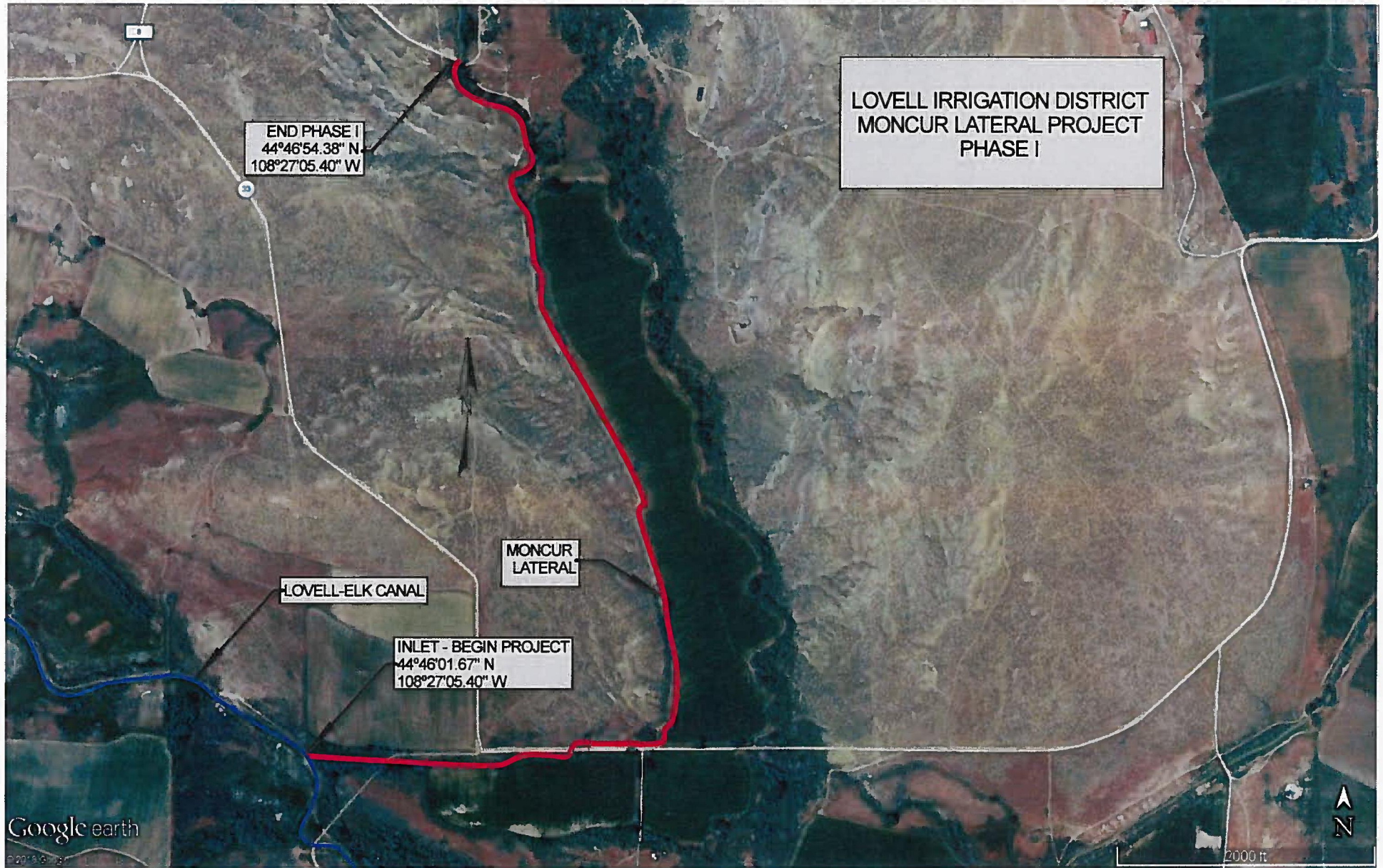
The Lovell Irrigation Board of Directors meets on the second Tuesday of each month. The official resolution was read and approved at the meeting on February 19, 2019. The resolution is attached.



FIGURE 1 LID SYSTEM OVERVIEW









708 Rd 7 1/2, PO Box 671, Cowley, WY 82420  
307-548-9913

**LOVELL IRRIGATION DISTRICT - MONCUR LATERAL PHASE I**

|  |      | MATERIALS ONLY |             |                        |
|--|------|----------------|-------------|------------------------|
| ITEM   | UNIT | QUANTITY       | UNIT PRICE  | TOTAL PRICE            |
| 54" DR-51 PIP Pipe                           | LF   | 4050           | \$ 200.00   | \$ 810,000.00          |
| 48" DR-51 PIP Pipe                           | LF   | 950            | \$ 160.00   | \$ 152,000.00          |
| 42" DR-51 PIP Pipe                           | LF   | 1600           | \$ 130.00   | \$ 208,000.00          |
| 36" DR-51 PIP Pipe                           | LF   | 2150           | \$ 60.00    | \$ 129,000.00          |
| 12" DR-51 PIP Pipe                           | LF   | 240            | \$ 15.00    | \$ 3,600.00            |
| 2" Air/Vac Assembly                          | EA   | 4              | \$ 400.00   | \$ 1,600.00            |
| 54" Fittings                                 |      |                |             |                        |
| Tee  | EA   | 2              | \$ 3,500.00 | \$ 7,000.00            |
| 45°  | EA   | 3              | \$ 3,000.00 | \$ 9,000.00            |
| 30°  | EA   | 1              | \$ 3,000.00 | \$ 3,000.00            |
| 22.5°  | EA   | 2              | \$ 2,700.00 | \$ 5,400.00            |
| 48" Fittings                                 |      |                |             |                        |
| Tee  | EA   | 2              | \$ 3,000.00 | \$ 6,000.00            |
| 45°  | EA   | 1              | \$ 2,800.00 | \$ 2,800.00            |
| 30°  | EA   | 1              | \$ 2,800.00 | \$ 2,800.00            |
| 42" Fittings                                 |      |                |             |                        |
| Tee  | EA   | 2              | \$ 2,000.00 | \$ 4,000.00            |
| 45°  | EA   | 5              | \$ 1,800.00 | \$ 9,000.00            |
| 30°  | EA   | 1              | \$ 1,800.00 | \$ 1,800.00            |
| 36" Fittings                                 |      |                |             |                        |
| Tee  | EA   | 2              | \$ 2,000.00 | \$ 4,000.00            |
| 45°  | EA   | 1              | \$ 1,500.00 | \$ 1,500.00            |
| 30°  | EA   | 3              | \$ 1,500.00 | \$ 4,500.00            |
| 22.5°  | EA   | 1              | \$ 1,200.00 | \$ 1,200.00            |
| 12" Fittings                                 |      |                |             |                        |
| 45°  | EA   | 16             | \$ 450.00   | \$ 7,200.00            |
| 12" H-30 Gate Valve                          | EA   | 8              | \$ 1,000.00 | \$ 8,000.00            |
| Coanda Screen                                | EA   | 1              | \$ 5,000.00 | \$ 5,000.00            |
| Concrete                                     | CY   | 20             | \$ 150.00   | \$ 3,000.00            |
| Reinforcing Steel                            | LBS  | 1200           | \$ 2.00     | \$ 2,400.00            |
| Trace Wire                                   | LF   | 8700           | \$ 0.50     | \$ 4,350.00            |
| Bedding Material                             | CY   | 900            | \$ 15.00    | \$ 13,500.00           |
| Estimated Materials Total                    |      |                |             | \$ 1,409,650.00        |
| 15% Contingency                              |      |                |             | \$ 211,448.00          |
| <b>TOTAL MATERIALS</b>                       |      |                |             | <b>\$ 1,621,098.00</b> |
| Inflation Costs 3%                           |      |                |             | \$ 48,633.00           |
| <b>TOTAL MATERIAL COSTS</b>                  |      |                |             | <b>\$ 1,669,731.00</b> |
| <b>ROUNDED MATERIAL COSTS FUNDED BY WWDC</b> |      |                |             | <b>\$ 1,670,000.00</b> |

Entitled: A RESOLUTION AUTHORIZING SUBMISSION OF A "WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2019" APPLICATION TO THE BUREAU OF RECLAMATION ON BEHALF OF THE GOVERNING BODY FOR THE LOVELL IRRIGATION DISTRICT

(name of applicant)

FOR THE PURPOSE OF (state purpose of project): 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

(name of applicant)

desires to participate in the WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2019 program to assist in financing this project; and

**WHEREAS**, the Governing Body of the LOVELL IRRIGATION DISTRICT

(name of applicant)

recognizes the need for the project; and

**WHEREAS**, the WATERSMART GRANT: WATER AND ENERGY EFFICIENCY GRANTS FOR FISCAL YEAR 2019 Grant program requires that certain criteria be met, as described in the Bureau of Reclamation Funding Opportunity Announcement No. BOR-DO-19-F004 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 \$ 300,000.00

(name of applicant)

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

LOVELL IRRIGATION DISTRICT MONCUR LATERAL REHABILITATION 2019 PROJECT

(name of project)

**BE IT FURTHER RESOLVED**, that BRAD MOODY, PRESIDENT

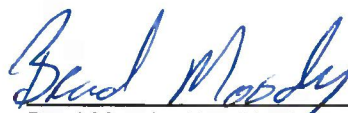
(name and title of persons)

is hereby designated as the authorized representative of the LOVELL IRRIGATION DISTRICT

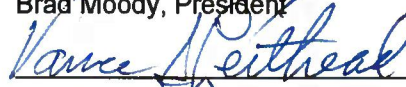
(name of applicant)

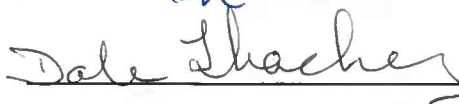
to act on behalf of the Governing Body on all matters relating to this grant application.

PASSED, APPROVED AND ADOPTED THIS 19th day of February, 2019.



Brad Moody, President

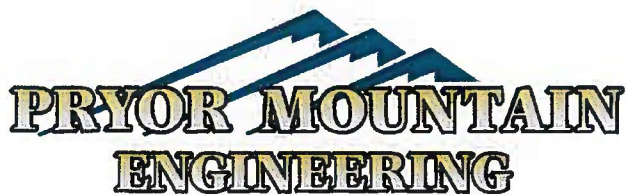




Attest



Stan Asay, Secretary/Treasurer



**PRYOR MOUNTAIN  
ENGINEERING**

**William E. Bridges, P.E.**

**708 RD 7½ PO Box 671 Cowley, WY 82420**

**(307)548-9913**

**fax:(307)548-9903**

March 15, 2019

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 I

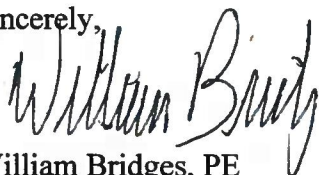
We are requesting your determination of any waters of the U.S. and/or wetlands that may be affected by our proposed project. Concurrence from your agency is required before we can proceed with our project.

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 8700 feet long and is shown on the attached map. The project is located in Sections 5 and 6, T 55 N, R 96 W and Section 31, T 56 N, R 96 W, 6<sup>th</sup> 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.

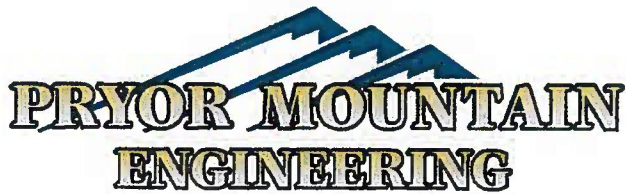
Please return a reply either via email or USPS indicating whether or not any waters of the U.S. and/or wetlands will be adversely affected by the construction or our project. A map showing the project limits has been included for your review.

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**

March 15, 2019

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

Attn: Field Supervisor

Re: Lovell Irrigation District  
Moncur Lateral Phase I

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 8700 feet long and is shown on the attached map. The project is located in Sections 5 and 6, T 55 N, R 96 W and Section 31, T 56 N, R 96 W, 6<sup>th</sup> PM. Our research shows that none of the work would affect any animals on the federal threatened and endangered species list.

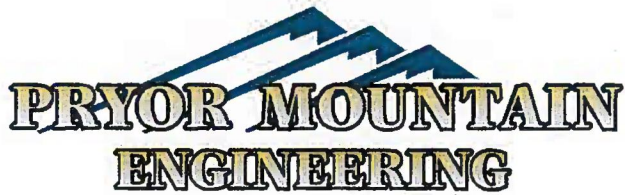
Please return a reply either via email or USPS indicating whether or not any threatened or endangered species or species of concern will be adversely affected by the construction or our project. A map showing the project limits has been included for your review.

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**

March 15, 2019

Wyoming Game and Fish  
5400 Bishop Boulevard  
Cheyenne, WY 82006

Attn: Habitat Protection Coordinator

Re: Lovell Irrigation District  
Moncur Lateral Phase I

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 8700 feet long and is shown on the attached map. The project is located in Sections 5 and 6, T 55 N, R 96 W and Section 31, T 56 N, R 96 W, 6<sup>th</sup> PM. Our research shows that none of the work would affect a crucial big game habitat or any other habitat 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 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**

March 15, 2019

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

Attn: Historic Preservation Office

Re: Lovell Irrigation District  
Moncur Lateral Phase I

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 8700 feet long and is shown on the attached map. The project is located in Sections 5 and 6, T 55 N, R 96 W and Section 31, T 56 N, R 96 W, 6<sup>th</sup> 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

**LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL REHABILITATION 2019 PROJECT**

Bureau of Reclamation  
Financial Assistance Support Section  
Mr. Darren Olson  
Denver Federal Center  
PO Box 25007, MS 84-27814  
Denver, CO 80225

Dear Mr. Olson:

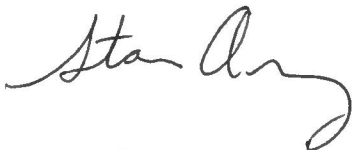
I am writing this in support of the Lovell Irrigation District Moncur Lateral Rehabilitation 2019 Project.

I believe this funding request is important in many ways, but my interest is in what it will improve for our district. It will cut down on some of the maintenance work needed each year. The water will be dispersed to intended crop areas and not for watering perennial growth along the edges of the water flow. It will also cut down on water loss from seepage and evaporation. This allows water to be used where intended along this lateral.

My farm is on the end of the canal and any water savings in the system really can be a benefit to my operations.

Please give this proposal your full consideration 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 REHABILITATION 2019 PROJECT

Bureau of Reclamation  
Financial Assistance Support Section  
Mr. Darren Olson  
Denver Federal Center  
PO Box 25007, MS 84-27814  
Denver, CO 80225

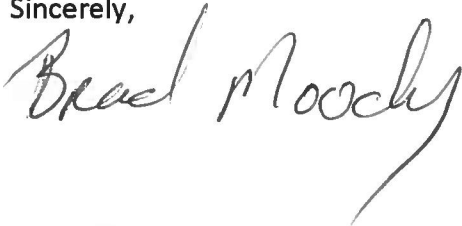
Dear Mr. Olson:

I support the Lovell Irrigation District Moncur Lateral Rehabilitation 2019 Project. 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 farmers use water for 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 complete the upgrade 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  
Chairman – Lovell Irrigation  
1420 Rd 9  
Lovell, WY 82431  
307-548-6307

LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL REHABILITATION 2019 PROJECT

Bureau of Reclamation  
Financial Assistance Support Section  
Mr. Darren Olson  
Denver Federal Center  
PO Box 25007, MS 84-27814  
Denver, CO 80225

Dear Mr. Olson:

I write to support the Lovell Irrigation District Moncur Lateral Rehabilitation 2019 Project. I believe this request is important in many ways, but my interest is because it will improve getting water for irrigation.

This project will improve our operations by allowing us to better control our water losses, and thus conserve water.

Please give this proposal your full approval.

Sincerely,

Handwritten signatures in blue ink. The first signature is "Tim Beck" and the second is "Scott A. Brown".

Double Dollar Ranch Irrevocable Trust  
823 Lane 14 1/2  
Lovell, Wyoming 82431

LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL REHABILITATION 2019 PROJECT

Bureau of Reclamation  
Financial Assistance Support Section  
Mr. Darren Olson  
Denver Federal Center  
PO Box 25007, MS 84-27814  
Denver, CO 80225

Dear Mr. Olson:

I support the Lovell Irrigation District Moncur Lateral Rehabilitation 2019 Project. I believe that receiving this funding is very important to improving the irrigated acres that this lateral services.

I am a landowner/farmer at the end of this lateral distribution. Because of this, I get concerned over the availability of water for my farming needs, and the needs of my neighbors. Each improvement to our water system will help us to be successful in our farming seasons.

Please give this project the funding to be successful.

Sincerely, 

Brent Moncur  
770 Garfield Ave  
Lovell, WY 82431  
(307)548-7761

LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL REHABILITATION 2019 PROJECT

Bureau of Reclamation  
Financial Assistance Support Section  
Mr. Darren Olson  
Denver Federal Center  
PO Box 25007, MS 84-27814  
Denver, CO 80225



Dear Mr. Olson:

I support the Lovell Irrigation District Moncur Lateral Rehabilitation 2019 Project. I believe this request is important to improve the irrigated acres it services.

As a landowner, with crops planted in the area of Lovell Irrigation District Moncur Lateral's water distribution, I get concerned over the availability of water for my needs, and the needs of my neighbors. Each step of improvement will help us to be successful in our harvests.

Please give this project the attention it needs to be awarded the funding necessary to proceed.

Sincerely,

Jack Walker  
Landowner  
1558 Rd 9 ½  
Lovell, WY 82431  
(307)548-6353

LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL REHABILITATION 2019 PROJECT

Bureau of Reclamation  
Financial Assistance Support Section  
Mr. Darren Olson  
Denver Federal Center  
PO Box 25007, MS 84-27814  
Denver, CO 80225

Dear Mr. OLson

As a producer with acres under The Moncur lateral,  
I feel there is a strong need for an upgrade on this  
lateral. I support this project.

Jim Walker

JIM WALKER  
1255 RD 8½  
LOVELL WY 82431

LOVELL IRRIGATION DISTRICT  
MONCUR LATERAL REHABILITATION 2019 PROJECT

Bureau of Reclamation  
Financial Assistance Support Section  
Mr. Darren Olson  
Denver Federal Center  
PO Box 25007, MS 84-27814  
Denver, CO 80225

Dear Mr. Olson:

I am writing in support of the Lovell Irrigation District Moncur Lateral Rehabilitation 2019 Project. I believe this request is very important to improve getting irrigation water to our local farms. As we are a small irrigation district, we need to find financial assistance in doing these projects.

When we can better control our water losses, and thus conserve water, we are able to provide better water availability to our neighbors downstream.

We would appreciate if the bureau would give this proposal your approval.

Thank you very much.

Sincerely,

A handwritten signature in blue ink that reads "Rex Hubbell". The signature is written in a cursive style with a large initial "R".

Rex Hubbell

292 Park Ave.  
Lovell, Wyoming 82431

## LOVELL IRRIGATION DISTRICT

### MONCUR LATERAL REHABILITATION 2019 PROJECT

Bureau of Reclamation

Financial Assistance Support Section

Mr. Darren Olson

Denver Federal Center

PO Box 25007, MS 84-27814

Denver, CO 80225

Dear Mr. Olson:

I support the Lovell Irrigation District Moncur Lateral Rehabilitation 2019 Project.

I believe that receiving this funding is very important to improving the irrigated acres that this lateral service's. Piping the Moncur Lateral will prevent erosion, greatly reduce seepage, reduce maintenance, and facilitate better water control.

Lovell Irrigation District Master Plan August 2017 defined the Moncur Lateral as having the most water loss due to seepage of any area on the 42 miles of canal.

Piping the Moncur canal may provide enough pressure for pivot systems which further conserves water.

According to a 2003 study by A&H Consulting Inc. the seepage losses are assumed to be 5% of the flow. Piping the Moncur Lateral will increase water quality and quantity, allowing better service to all the Farmers on the canal.

Please give this proposal your full consideration. If I can answer any further questions, please let me know. I may be reached at (307) 272-5511.

Sincerely

A handwritten signature in cursive script that reads "Keith Grant".

Keith Grant

Supervisor

Shoshone Conservation District

359 Nevada Ave.

Lovell Wy. 82431