

**BBWA MAIN CANAL REHABILITATION PROJECT - PHASE I**

**BUREAU OF RECLAMATION (BOR)**

**Small-Scale WaterSMART GRANT APPLICATION**

**Funding Opportunity Announcement No. BOR-DO-18-F009**

**Applicant:**

Billings Bench Water Association (BBWA)

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**Project Location: Yellowstone County, Montana**

**Congressional Districts of Applicant: Montana At-Large**

**Congressional Districts of Project Area: Montana At-Large**

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## **1.0 TECHNICAL PROPOSAL AND EVALUATION CRITERIA**

### **1.1 EXECUTIVE SUMMARY**

#### **DATE AND APPLICANT INFORMATION:**

**Date:** July 11, 2017

**Applicant Name:** Billings Bench Water Association (BBWA)

**City, County and State:** Billings, Yellowstone County, Montana

**Project Summary:** The BBWA is requesting funding for the construction of the Main Canal Rehabilitation Project – Phase I (project). The proposed project will include the reshaping, grading, and lining of the BBWA's Main Canal within the BBWA irrigation system. Phase I of this project will line approximately 1,550 linear feet (LF) of canal. The overall project, the eventual lining of 2.13 miles of canal, will allow the BBWA to nearly eliminate seepage along the length of the project area and allow for the irrigation of an additional 1,500 acres.

The project is expected to be completed in approximately 12 months. This includes permitting, survey, design, and construction for Phase I of the project. It is anticipated that the project would be completed by approximately June 2020.

The project is located in South ½ of Section 14, Township 1 South, Range 25 East, Yellowstone County, Montana. The project is not located on a Federal facility.

### **1.2 BACKGROUND DATA**

#### **Sources of Water Supply**

Sources of water supply include water rights on the Yellowstone River that supplies water to the BBWA irrigation system.

#### **Water Rights Involved**

The BBWA has senior water rights in the Yellowstone River. According to the Montana Department of Natural Resources and Conservation (DNRC) Water Right Query System, the BBWA has 16 active water rights. The initial and current diversion water right is for 600 cubic feet per second (cfs) to be diverted from the Yellowstone River. Approximately 217,000 acre-feet of water is diverted into the BBWA system through these water rights annually.

#### **Current Water Uses**

Water within the BBWA's system is primarily used to irrigate prime agricultural lands for 18,002 acres. The BBWA's main canal also serves as the primary inflow for Lake Elmo in Billings, a popular recreation spot for Billings residents. A 113-home subdivision located north of Billings also receives domestic water from this reservoir.

#### **Major Crops and Total Acres Served**

The BBWA provides irrigation water to a total of 18,002 acres and 16,888 shareholders. The proposed lining project has the potential to serve additional acres. The primary crops grown within the BBWA are alfalfa hay, barley, beats, and small grains.

#### **Current and Projected Water Demand**

Due to the extent of utilized productive land, it is unlikely that the BBWA will develop enough additional acres to make a significant difference in current and projected water demand. Historically, BBWA's water demand has remained generally constant at approximately 217,000 acre-feet per year.

#### **Water Delivery System**

The BBWA utilizes structures, controls, and canals to transport water from the Yellowstone River to the proposed project area. The BBWA conveyance system includes 63 miles of open main

laterals/canals with numerous control structures to regulate flows to various locations throughout BBWA system. The structures include 1,122 irrigation turn outs; three flumes; 25 siphons; 228 checks; and 39 waste ways; The current system has four reaches that are lined throughout the entirety of the BBWA canal system. The Phase I project area includes three irrigation turnouts.

### Potential Shortfalls in Water Supply

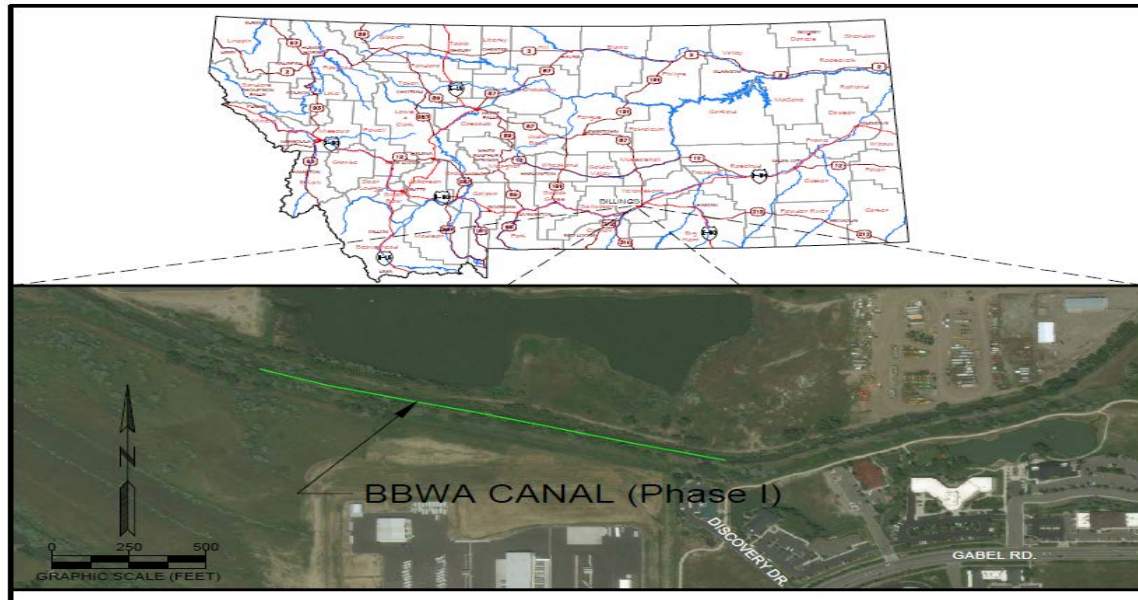
As with any year in Montana, the potential for drought conditions during the irrigation season is highly possible. In addition to drought, another shortfall in water supply includes water losses that occur within the canal due to seepage. Current flow measurements by BBWA staff indicate that there is 6.7 cfs (2,425 acre-feet per year) of water being lost to seepage within the 1,550 LF section of proposed lining.

### Past Working Relationship with Bureau of Reclamation

The BBWA and BOR worked together last year (2017) to monitor and measure flows within the BBWA canal. In addition, BBWA has taken a proactive approach to addressing problems and implementing improvements within their irrigation system. Within the past 5 to 10 years, BBWA has completed approximately ten planning, design, and construction projects to conserve water and benefit Montana's renewable resources.

### 1.3 PROJECT LOCATION

The BBWA project is located within Yellowstone County, in the City of Billings, Montana. The BBWA headquarters is located at 1111 Main Street, Suite 14, Billings, MT 59105. The BBWA Main Canal Rehabilitation Project – Phase I is located within the South ½ of Section 14, Township 1 South, Range 25 East, P.M.M. The project is located at latitude 45° 44' 44.45" N, longitude 108° 36' 19.77" W. The following map shows the proposed project location with respect to the City of Billings, Montana.



### 1.4 TECHNICAL PROJECT DESCRIPTION

The proposed project will include the rehabilitation and lining of a portion of the Main Canal to mitigate seepage loss. The project will consist of general excavation, site grading, installing the lining system, placement of fill/embankment material, and revegetation where/if needed. The project is expected to be completed within approximately 12 months. This includes permitting,

survey, design, construction, project management, close-out items, grant reporting, and preparation of as-built drawings for Phase I of the project.

## Problems and Needs

Currently, the project area consists of a manmade irrigation ditch. Noticeable seepage losses throughout the project area can be directly attributed to the well-draining soils. These soils are classified as well drained with a high hydraulic conductivity and allow for water to easily infiltrate through the canal bottom and banks. Allan Workman, the BBWA Superintendent, has also observed the areas with noticeable seepage losses and is supportive of the seepage analysis approach and data gathered to date.

Additionally, BBWA personnel indicated that they have difficulties in delivering water from the Main during the peak irrigation season due to water losses, which in some instances does not provide enough water to downstream users of the ditch. Water, when requested by downstream users, can take as long as 36 hours to reach the project location plus additional time to reach each individual user. This creates problems for crop growth especially during periods of peak demand.

### How the Project is Intended to Address the Problems and Needs

A lining system would nearly eliminate seepage through the project area and would provide the BBWA with the appropriate management capabilities to provide water to downstream acres and significantly reduce water delivery times.

## Expected Outcomes

The proposed project would nearly eliminate a minimum of 6.7 cfs (2,425 acre-feet per year) of water lost to seepage in the 1,550 LF section in Phase I. The BBWA would greatly improve their management of the overall irrigation delivery system through the elimination of wasted water from the Main Canal.

## 1.5 EVALUATION CRITERIA

### Evaluation Criterion A – Project Benefits (35 points)

The proposed project will result in water conservation, improved management, and increased conveyance efficiency. The proposed project is expected to result in water savings of at least 6.7 cfs (790.8 million gallons per year) that is normally lost to seepage within the project area. Additional project benefits will include increased crop production (approximately 14%), which will lead to increased crop revenue of \$1,028,657 and associated positive regional economic impacts.

#### ●What are the benefits to the applicant's water supply delivery system?

Reduced seepage - Based on canal monitoring and as documented within the Preliminary Engineering Report (PER), the project loses a minimum of 6.7 cfs (790.8 million gallons per year) of water to seepage within the proposed project area due to well-draining soils and poor channel conveyance. The proposed project would nearly eliminate seepage.

Reduced Delivery travel time - BBWA personnel indicated that they have difficulties in delivering water from the Main Canal during the peak irrigation season due to water losses, which in some instances does not provide enough water to downstream users of the system. Water, when requested by downstream users, can take as long as 36 hours to reach the project location plus additional time to reach each individual user. This creates problems for crop growth especially during periods of peak demand. A lining system would nearly eliminate seepage through the project area and would provide the BBWA with the appropriate management capabilities to provide sufficient water to downstream acres and significantly reduce water delivery times.

•If other benefits are expected, explain those as well. Consider the following:

***Extent to which the proposed project improves overall water supply reliability:***

Typically, the 18,000 acres served by BBWA have difficulty receiving water during peak irrigation season or during drought conditions due to water loss. The proposed project would nearly eliminate seepage within the 1,550 LF section, providing more reliable water to users during drought conditions and periods of peak irrigation demand.

***The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin):***

The proposed project is expected to benefit the overall BBWA system. Users will have a more reliable source of irrigation water, improved efficiency, improved drought preparedness, increased crop production and crop revenue, as well as improved overall management of the BBWA system. The proposed project will increase agricultural revenues throughout the region, resulting in associated economic improvements and continued usage of the Lake Elmo recreational area.

***Extent to which the proposed project will increase collaboration and information sharing among water managers in the region:***

The BBWA actively communicates, collaborates, and shares information with the other regional ditch associations (Big Ditch Company, Canyon Creek Ditch Company, Cove Irrigation Company, and High Ditch), as well as the Yellowstone County Conservation District and the Natural Resource Conservation Service (NRCS) and Conservation District. Benefits and lessons learned are shared for the betterment of the overall system and the region.

***Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)***

The proposed project will provide benefits to several local sectors including the local and regional economies, agriculture, and the environment. The 18,002 acres served by the Main Canal currently generate \$6,327,178 in revenues each year. It is anticipated that an additional 1,500 acres of land could be irrigated from the Main Canal as a result of the project. This increase project would yield an annual revenue of \$1,028,657, resulting in an increase difference of \$124,774 or nearly 14% percent. The project will also provide an economic boost both during construction and after the project is completed. During construction, the proposed project will have a positive economic impact on the local community, albeit minor, due to purchased materials and professional services provided. Once complete, users of the system will be able to increase crop production by approximately 14% due to increased water availability that will lead to increased revenue. The primary crops grown within the BBWA service area are alfalfa, barley, corn, grass/hay, barley, and sugar beets. The proposed project will lead to a 14% increase in production of these crops, therefore sustaining the agricultural economy in the area, providing food (barley and wheat) for the citizens of the State of Montana, and providing forage crops (hay) to feed livestock in the region, which in turn provides meat to the citizens of Montana. An economic analysis of the downstream acres impacted by this project resulted in an increased annual agricultural revenue of \$1,028,657 because of the 14% increase in crop production.

***Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.***

The State of Montana and the Federal Government have developed multiple programs for the promotion of renewable resource conservation. These programs generally are focused on projects in which a need is demonstrated; including the demonstration of an increase in citizen and resource benefits. The Montana NRCS EQIP program is an example of one of these programs



and provides cost share money for projects that increase resource conservation. Several irrigators within the BBWA make on farm improvements using the NRCS EQIP program. The additional water saved will promote efforts by BBWA users to seek assistance from the NRCS for on-farm improvements.

### Evaluation Criterion B – Planning Efforts Supporting the Project (35 points)

The BBWA has taken a proactive approach to addressing problems and implementing improvements within their irrigation system. Within the past five to ten years, approximately ten BBWA planning, design, and construction projects have been completed to conserve water and benefit Montana's renewable resources:

Additional smaller scale projects have also been performed by the BBWA to reduce seepage issues throughout their irrigation system. The use of CANAL SEAL™ and seepage curtains to address seepage has become a common practice within multiple lateral reaches. As these techniques provide only temporary protection, the implementation of these seepage mitigation methods is required on an annual basis, and only marginal success has been achieved. Therefore, more permanent seepage abatement methods with higher success rates are preferred.

As the BBWA operates a complex irrigation system, it requires various local, state, and Federal organizations to work in cooperation; for the system to function at a desirable level. The following agencies cooperate in the annual operation of the BBWA: Montana DNRC; Yellowstone County Conservation District; NRCS; Bureau of Reclamation (BOR); and Yellowstone County.

The Montana DNRC has provided significant assistance to irrigation districts throughout Montana. Many irrigation projects receive funding through the DNRC's Renewable Resource Grant (RRGL) program. In 2017, the BBWA was awarded a planning grant for technical assistance associated with the preparation of the PER, prepared by WWC Engineering, on the lining of the 1,550-foot section of the Main Canal. This planning grant was not applicable to construction related costs. The BBWA intends to continue its excellent working relationship with the DNRC while continuing discussions about funding for potential future projects.

The BOR provides funding assistance to various organizations with the purpose of obtaining technical assistance for resource conservation projects. It is the hope that this WaterSMART Grant through the BOR will aid in the cost of construction for the described lining project.

The BBWA has taken a proactive approach to address problems and implement improvements that are consistent with their ongoing water management, conservation and drought resilience planning. The BBWA conducts a review each year that provides them with a basis for project priorities that are economically feasible. Within the past 5 to 10 years, several planning, design, and construction projects have been undertaken that are consistent with the BBWA's water management and drought resilience plan and have greatly improved the BBWA's system. As discussed below, the proposed project will meet the goals of the BBWA's water management and drought resilience plan: conserve water, improve management, increase irrigation efficiency, and maintain infrastructure. The planning efforts made by the BBWA reflect the desire to conserve water and improve management within their delivery system. The BBWA's planning effort is a living process that is constantly evolving for the betterment of the BBWA system and its users.

**•Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?**

Yes. The primary objective of the overall project is to rehabilitate a 1,550-foot section of the Main Canal that delivers water diverted from the Yellowstone River to customers along the entirety of the canal. This project will enable the BBWA to attain the following specific objectives:

1. **Conservation** – Conserve approximately 6.7 cfs (2,425 acre-feet per year) of water lost to seepage within the wetted perimeter of the canal;
2. **Management** – The decreased seepage losses, decreased man hours related to varying water delivery quantities, and decreased diversion of unused water from the Yellowstone River will result in a more efficient management of the available water resource;
3. **Development** – This 6.7 cfs of water savings can be utilized for further development of irrigable acres west of Billings, increasing crop yields on agricultural areas that are water short during periods of peak demand, or the future development of raw water systems (e.g., parks) west of Billings, which are a taxing water use for a municipality to manage;
4. **Preservation** – Lining of the canal would preserve the water that feeds Lake Elmo and Rattlesnake Reservoir, which provide recreational use for the City of Billings;
5. **Recreation** – Continue to provide existing inflow for Lake Elmo, which is a popular recreation spot in the City of Billings; and
6. **Public Health & Safety** – Provide benefits to the public health and welfare through reduced potential for major canal breaches, reduction in fluctuation of geologic conditions caused by irrigation groundwater seepage and increase sustainability of development below the canal. The BBWA has experienced three major canal breaches over the past 10 years resulting in downstream flooding and damage of residential, commercial and City property. The canal within the project area has particularly high banks with steep out slopes with visible leakage along the toe. Failure of this section would create a severe flooding hazard to City of Billings residents.

*The main goal of the Main Canal Rehabilitation Project is to rehabilitate the proposed 1,550-foot long reach of the Main Canal and provide multiple renewable resource benefits to the State of Montana.* Approximately 2,425 acre-feet (790.8 million gallons) of water per year will be conserved by achieving this goal. In addition, the irrigation efficiency of the BBWA will be increased to ensure a reliable supply of water for users; and energy will be conserved as the operation and maintenance costs and efforts required to maintain irrigation practices will be reduced.

The BBWA has identified several projects throughout their system that have been earmarked to be completed in the next five years. The proposed project has been classified as a high priority due to the severe water losses and challenging management issues. Before selecting a project, the BBWA conducts a thorough review of the proposal to ensure that it is in line with existing BBWA water conservation and drought resiliency goals. The BBWA's primary goals when selecting a project are to conserve water, improve management, increase irrigation efficiency, maintain infrastructure, provide drought resilience, etc. The proposed project will:

- Conserve 6.7 cfs (2,425 acre-feet per year) of water normally lost to seepage, leading to increased efficiency and ensuring water delivery to downstream users,
- Improve design and management of the BBWA system by decreasing the time it takes to deliver water to downstream users (the project will reduce water delivery times),
- Improve management and drought resiliency of the BBWA system to more efficiently deliver water and improve drought preparedness.



●**Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.**

BBWA has made water conservation and improvement of the canals a top priority moving forward. The lining of the Main Canal would preserve water that would allow additional irrigable acres west of Billings to be irrigated and increase crop yields on agricultural areas that are water short during periods of peak demand or the future development of raw water systems (e.g., parks) west of Billings. After each irrigation season, and before the beginning of the next irrigation season, BBWA personnel take inventory of potential projects for the next year. This project is the BBWA's highest priority due to its severe seepage losses and potential for failure due to saturated bank slopes.

**Evaluation Criterion C – Project Implementation (10 points)**

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

To successfully implement the proposed project, the following tasks will be necessary:

Task 1 – WaterSMART Grant Award. It is anticipated that the grant awards will be released in Fall 2018.

Task 2 – Rehabilitation Design. The BBWA will contract with a licensed Professional Engineer to develop the design and assist with construction management and a licensed Land Surveyor to complete all necessary surveying at the project site. Design and initial surveying will occur August 2019-November 2019.

Task 3 – Regulatory Compliance. The BBWA, with assistance from the Engineer, will obtain the required permits and ensure that the project meets applicable regulatory requirements. This task will run concurrently with Task 2, from August 2019-November 2019.

Task 4 – Canal Shaping. The BBWA, with assistance from the Engineer, will strip all vegetation from within the Project Area's canal banks, shape the canal to the desired dimensions, and grade the canal bottom to the desired slope from February 2020-March 2020.

Task 5 – Liner Installation. The BBWA will install the liner in accordance with the manufacturer's recommendations and under the guidance of the Engineer. The liner will be constructed/installed from March 2020-April 2020.

Task 6 – Construction Closeout. The BBWA will work with the Engineer to assure that all issues with the installation have been addressed. The Engineer and Surveyor will also develop a set of as-built plans to document any changes made in the field. Construction closeout will occur in May 2020.

Task 7 – Grant Closeout. The BBWA will work with the Engineer to assure that proper documentation including invoices, reports, etc. have been submitted, and the grant will be closed. Grant closeout will be completed in July 2020.

Task 8 – Project Completion. The estimated project completion is July 2020.

*\*The estimated schedule and task are subject to refinements and other changes.*

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

Please see Sections 3.0 and 4.0 of this application for required permits.

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

The BBWA will contract with a licensed Professional Engineer to complete the design of the Main Canal Rehabilitation Project – Phase I. The Engineer will be responsible for the design of the proposed project, which will include, but is not limited to, environmental considerations, permitting, design and construction administration duties. The Engineer will work with regulatory agencies to achieve environmental compliance. The Engineer will provide a final plan set and specifications for the proposed project to facilitate construction. The Engineer will also provide advisory services during construction of the project to assure proper installation.

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

The proposed project will not require new policies or administrative actions to be implemented.

**•Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?**

The environmental compliance estimate was based on our collective experience with recent, similar efforts and projects. Jim Forseth from the local Reclamation office was contacted and relayed that the cultural resources effort (if needed) has generally been more cost effective to contract out to a private contractor, with the cost varying according to scope and size of the project. Mr. Forseth indicated that he would check with the Reclamation archaeologist to get general thoughts on this and the potential implications for a non-federal project.

**Evaluation Criterion D – Nexus to Reclamation (10 points)**

[REDACTED]

**Evaluation Criterion E – Department of the Interior Priorities (10 points)**

The following priorities are applicable to the proposed project:

●Creating a conservation stewardship legacy second only to Teddy Roosevelt: Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment

●Modernizing our infrastructure: Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure

## **2.0 PROJECT BUDGET**

### **2.1 FUNDING PLAN AND LETTERS OF COMMITMENT**

The BBWA staff has the capability and extensive experience to oversee construction activities that will be required for the proposed project. The current BBWA staff includes one Project Manager in addition to an administrative staff person. Approximately two external contracts for services will be required for the proposed project. BBWA will need to solicit for an engineering consultant to assist with environmental compliance, design, grant administration, and conduct construction administration for all aspects of the project. In addition, legal counsel services may be needed as well. A letter of commitment/official resolution is attached.

#### **The amount of funding commitment**

Along with the \$74,592 requested in this grant application, the BBWA will contribute \$75,000 (or as needed) as in-kind services and cash reserves.

#### **The date the funds will be available to the applicant**

The BBWA has committed \$75,000 in in-kind services and cash reserves at the time of this application's writing. These funds are available immediately.

#### **Any time constraints on the availability of funds**

There will be no time constraints on availability of funds.

#### **Any other contingencies associated with the funding commitment**

There are no other contingencies associated with the funding commitment.

#### **How you will make your contribution to the cost-share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).**

Monetary contributions will come from the BBWA's reserve fund. In-kind services will be performed with current BBWA staff and equipment.

#### **Describe any donations or in-kind costs incurred before the anticipated Project start date that you seek to include as project costs. For each cost, identify:**

No costs incurred before the anticipated Project start date will be included.

**Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards the cost share unless otherwise allowed by statute.**

There are no other sources of Federal funding for the proposed project.

**Describe any pending funding requests that have not yet been approved; and explain how the project will be affected if such funding is denied.**

BBWA has applied for a \$125,000 grant through the Montana DNRC, Resources Grant and Loan Application (RRGL) program. Regardless of the outcome of the RRGL grant, the BBWA has committed the appropriate cash and in-kind services to complete the project.

**Table 2.1 - Summary of Non-Federal and Federal Funding Sources**

FUNDING SOURCES	AMOUNT
<b>Non-Federal Entities</b>	
*1. Applicant cash, in-kind construction, and administrative services (BBWA)	\$75,000 (or as needed)
2. Requested Montana DNRC Funding (Potential Funds)	\$125,000
<b>Non-Federal Subtotal</b>	<b>\$200,000</b>
<b>Other Federal Entities</b>	
1. None	\$0
<b>REQUESTED RECLAMATION FUNDING</b>	<b>\$74,592</b>

## 2.2 BUDGET PROPOSAL AND NARRATIVE

The total project cost was determined with the use of the most up-to-date billing rates for various employees, material costs from local and regional suppliers, bid tabs of similar lines items, past project experience, etc. As a result, the anticipated construction costs were determined from unit prices that account for professional costs, materials, supplies, etc.

**Table 2.2 - Budget Proposal**

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	Total Cost
	\$/Unit	Quantity		
<b>Salaries and Wages</b>				
N/A	-	-	-	\$ -
<b>Fringe Benefits</b>				
N/A	-	-	-	\$ -
<b>Travel</b>				
N/A	-	-	-	\$ -
<b>Equipment</b>				
N/A	-	-	-	\$ -
<b>Supplies and Materials</b>				
Huesker Canal Liner	0.85	62,000	SF	\$ 53,000.00
<b>Contractual/Construction</b>				
Unclassified Excavation, Haul, & Disposal	12.50	1,550	CY	\$20,000.00
Clearing & Grubbing	2,000	1.8	AC	\$ 4,000.00
Grading	2	8,610	SY	\$18,000.00
Native Soil Ballast Installation	15	574	CY	\$9,000.00
Liner Installation (Labor)	0.25	62,000	SF	\$16,000.00
Mobilization/Demobilization (10%)		1	LS	\$12,000.00

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	Total Cost
	\$/Unit	Quantity		
Contingency (15%)		1	LS	\$18,000.00
<b>Contractual/Construction Total: \$150,000</b>				
<b>Other</b>				
Printing/Copying	0.10	2,000	Each	\$ 200.00
Postage	150.00	1	LS	\$ 200.00
Phone/Fax	150.00	1	LS	\$ 200.00
<b>TOTAL DIRECT COSTS</b>				<b>\$600.00</b>
<b>Indirect Costs (Engineering &amp; Construction Oversight, Grant Admin, Legal)</b>				
Principal Engineer	120	10	Hours	\$ 1,200.00
Project Manager	110	40	Hours	\$ 4,400.00
Project Engineer	90	80	Hours	\$ 7,200.00
Project Survey	82	40	Hours	\$ 3,300.00
CADD Operator	74	80	Hours	\$ 6,000.00
Grant Administrative	70	30	Hours	\$2,100.00
General Administrative	54	25	Hours	\$ 1,400.00
Plan Sheets	1.30	310	Each	\$ 400.00
Legal Counsel	1,000	1	LS	\$1,000.00
<b>TOTAL INDIRECT COSTS</b>				<b>\$27,000.00</b>
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$177,600.00</b>

### Salaries and Wages

All staff are salaried, and no new staff will be hired directly for this project. The staff salaries will remain constant regardless of whether the project proceeds or not, and therefore, the proposed project budget does not include salary and wage costs.

### Fringe Benefits

As with salaries and wages, no new employees will be hired as part of this project. Therefore, the proposed project budget does not include fringe benefit costs.

### Travel

Travel costs are not included in the proposed budget because they are not eligible for reimbursement under this FOA.

### Equipment

All work will be performed with current BBWA equipment. No new equipment will be purchased for this project and therefore, equipment costs are not included in the proposed budget.

### Supplies and Materials

The existing site currently contains adequate structural fill material. Therefore, only purchased material costs are included in the proposed budget. All material and supply costs are accounted for in the unit prices provided in Table 2.2 - Budget Proposal.

### Contractual

The BBWA will contract with an engineering consultant to assist with environmental compliance, design, and conduct construction administration for all aspects of the project. The BBWA may also utilize legal counsel as needed. A breakdown of the consultant's time, rates, supplies, and materials is included in the Salaries and Wages Section. Construction will be performed by the BBWA as in-kind services; therefore, a contract with a construction company is not required.



### Environmental and Regulatory Compliance Costs

The environmental costs have been incorporated into the construction and engineering oversight costs. The environmental and regulatory compliance costs were estimated to be approximately 2% of the total project budget. These costs are included in Table 2.2 (Budget Proposal).

### Other

No other costs will be incurred for the proposed project.

### Indirect Costs

BBWA does not have a federally approved indirect cost; therefore, no indirect cost will be taken.

### Total Cost

The following summarizes the estimated amount of project costs, including the **potential** Federal and non-Federal cost share amounts.

Total requested funds from Reclamation:	<u>\$74,592.00</u>
Total requested funds from Montana DNRC:	<u>\$125,000.00</u>
<b>Potential total of requested funds:</b>	<b>\$199,592.00 – \$0.00</b>
Total funded by BBWA:	<u>\$75,408.00 (or as needed to fund)</u>
<b>Total estimated amount of the project:</b>	<b>\$177,600.00</b>

## **3.0 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE**

The following questions will address the impacts to environmental and cultural resources from the Project:

●**Impacts to surrounding environment:** Impacts will be those associated with general excavation, site grading, native soil ballast installation, and liner installation. The proposed project is expected to have minimal impacts and, in some cases, may even have a positive impact on the environment. Care will be taken to minimize impacts and limit the construction footprint wherever possible. Dust may be generated during construction; however, this is expected to be minimal and temporary. Dust control measures will be implemented during construction as needed. The proposed project is expected to reduce water losses from seepage.

●**Threatened or endangered species:** Results from the Montana Natural Heritage Program (MTNHP) indicate that there are no known threatened or endangered species within the proposed project area. However, the project area is in an area possibly containing habitat for five species of concern. Care will be taken to limit construction disturbance to the area within the existing canal. Additionally, the implementation of the proposed alternative will effectively eliminate sediment transport within the project when completed and will provide a beneficial impact on the water quality of the waterbodies in the area.

●**Wetlands and waters of the United States:** A search was conducted on the National Wetlands Inventory (NWI) website to determine if any wetlands existed near the Proposed Project Area. The search turned up two general wetland delineated areas within 1 mile of the Main Canal. The Main Canal runs approximately  $\frac{3}{4}$  of a mile parallel to Hogan's Slough which is identified as a Riverine wetland. The second wetland area is directly north of the of the Proposed Project area and is identified as a Freshwater Emergent Wetland and Freshwater Pond. Neither of these prescribed wetlands will be disturbed by construction related activities. The disturbances from construction will be contained within the canal itself and will be of short duration; two to three months during canal shaping and installation of the liner material. The site visit conducted by WWC confirmed the identified wetland areas and verified that construction activities are unlikely to negatively impact the wetland areas.

●**Water delivery system construction date:** The BBWA was originally incorporated under the name of Billings Land and Irrigation (IB&L) in 1903. The IB&L filed a water right on January 8, 1904 for 600 cfs from the Yellowstone River. On September 24, 1915, the landowners of the project incorporated the BBWA under the laws of the State of Montana. As stated earlier the Main Canal was constructed to standards of the early twentieth century. With the benefit of continuous maintenance, the system has provided nearly uninterrupted flows since 1905.

●**Modifications to individual features of irrigation system:** The proposed project will include the rehabilitation of 1,550 LF of the interior canal banks (reshaping and regrading), removal and disposal of vegetation along the canal banks, and the installation of an impermeable canal liner. BBWA will take flow readings at the start and end of the Proposed Project Area to quantify the amount of water conserved each year.

●**Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?** The district does not have any buildings, structures or features eligible for listing.

●**Archaeological sites:** The BBWA is not aware of any archeological sites in the proposed project area. If any archeological sites are discovered during construction, work will be temporarily halted, and the appropriate environmental process will be followed.

●**Impacts on low income or minority populations:** The proposed project will not have a disproportionately high and adverse effect on low income or minority populations.

●**Tribal lands:** The proposed project will not limit access to or ceremonial use of Indian sacred sites; or result in other impacts on tribal lands.

●**Noxious weeds or non-native invasive species:** Care will be taken to prevent the continued existence or spread of noxious weeds or non-native invasive species. If revegetation is needed due to disturbance, only approved native seed mixtures will be used. The BBWA's weed management strategies will continue to be implemented.

#### 4.0 REQUIRED PERMITS OR APPROVALS

For each of the permits listed below, the BBWA will work with each permitting agency to determine whether a formal permit is needed for the construction of the proposed project. If needed, the following permits will be obtained with assistance from the engineer during the design process:

●**318 Authorization:** BBWA will work with the State to determine whether a permit for the construction of the project justifies a formal permit.

●**Storm Water Discharge General Permit:** State Storm Water Rules require a storm water discharge permit for any construction project over 1 acre in total disturbance that discharges into State waters.

Although wetlands are located adjacent to the project; construction is not anticipated to be conducted outside the confines of the Main Canal. An Army Corps of Engineer's permit is not expected to be needed for this project.

#### 5.0 OFFICIAL RESOLUTION

An official resolution is included with this application. Letters of support are also provided.

# **Official Resolution**

**BILLINGS BENCH WATER ASSOCIATION  
RESOLUTION  
COMMITMENT TO MATCH FUNDS TO COMPLETE PROJECT**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE BILLINGS BENCH WATER ASSOCIATION:

WHEREAS, WWC Engineering is applying for the WaterSmart grants on BBWA's behalf.

The application requires a resolution of commitment stating BBWA is capable of providing the funding and/or in kind contributions specified in the funding plan.

THEREFORE BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE BILLINGS BENCH WATER ASSOCIATION THAT:

The Association is willing and capable of providing the funding and/or in kind contributions specified in the funding plan.

AYES:

Tom Plath  
Tim Heidema  
Jim Hinkle  
Jeff Michael  
Jim Stott  
Danny Quanbeck

NAES: None

ABSENT: None

Adopted this 24<sup>th</sup> day of April, 2018.

  
\_\_\_\_\_  
Gary M Davis, President

  
\_\_\_\_\_  
Kristina Franco, Secretary-Treasurer



**Billings Bench Water Association**  
**1111 Main Street**  
**PO Box 50150**  
**Billings, Mt 59105**  
**(406) 259-6241**

April 24, 2018

To Whom It May Concern:

As we apply for the WaterSmart Grant, we fully understand that we must match the funding associated with this particular grant. The Billings Bench Water Association is enthusiastic about the potential water conservation and safety this lining will bring, that we commit to provide the matching funds as explained to us. We also realize that the costs associated with this project may exceed the grant funding; we will commit to covering those expenses as well.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gary M Davis", is written over a horizontal line.

Gary M Davis  
President

CC: WWC Engineering  
File



# **Letters of Project Support**



**Kristina Franco  
Secretary - Treasurer  
Billings Bench Water Association  
1111 Main Street  
Billings, MT 59105**

**April 18, 2018**

**RE: Support for grant applications to line canal**

**Dear Ms. Franco,**

**The purpose of this letter is to communicate our support for the proposed lining of the canal from Shiloh Road to Lake Elmo.**

**As a shareholder in BBWA, we believe it is important to be good stewards of our natural resources. This improvement project would conserve water as well as reduce risk of problems caused by erosion.**

**We strongly support the BBWA in its efforts to seek grant funding for this project.**

**Sincerely,**

A handwritten signature in black ink, appearing to read 'A. Ramage', with a long, sweeping horizontal stroke extending to the right.

**Aaron Ramage  
Vice President  
Bottrell Family Investments, LP**

# Yellowstone County



**COMMISSIONERS**  
(406) 256-2701  
(406) 256-2777 (FAX)

P.O. Box 35000  
Billings, MT 59107-5000  
commission@co.yellowstone.mt.gov

April 17, 2018

To Whom It May Concern:

The Yellowstone County Commissioners are writing in support of the RRGL grant application being submitted by the Billings Bench Water Association. This grant would be used to line a section of BBWA's main canal that a previous study has identified. This section of the main canal is in a busy area in our vastly growing community with steep banks and serious consequences should a breach occur. By lining this section of canal, Billings Bench Water Association would be conserving water, as well as improving safety around the area noted.

Billings Bench Water Association provides water to our city parks, cemeteries, Lake Elmo, golf courses, and a subdivision using Rattlesnake Lake as a source of drinking water, along with the many farmers and ranchers who are a huge economic driver for Yellowstone County. It is a source of water in an otherwise desert bench north of Billings. The water is used by our maintenance crews during road maintenance and has been a valuable source of water during grass fires near the system. Many homes and businesses rely on the preservation and safety of this canal running through Billings.

The use of this water in our area is a valuable resource and should be preserved. Water that seeps from the canal in this area is intermingled with a high groundwater table. This water would be better served to stay in the Yellowstone River. The interruption of service or complete abandonment of the canal would be an economic disaster to our county.

Please give favorable consideration for this request. Implementing this plan of action in an affordable manner will greatly be a benefit to our community, farmers and ranchers alike!

Sincerely,

BOARD OF COUNTY COMMISSIONERS  
YELLOWSTONE COUNTY, MONTANA

A handwritten signature in black ink, appearing to read "John Ostlund".

John Ostlund, Chair

A handwritten signature in black ink, appearing to read "Denis Pitman".

Denis Pitman, Member

A handwritten signature in black ink, appearing to read "Robyn Driscoll".

Robyn Driscoll, Member

BOCC/ptb

# Town & Country SUPPLY ASSOCIATION

April 17, 2018

To Whom It May Concern,

This letter is in support of the grant application being submitted by the Billings Bench Water Association. As an agricultural cooperative we are very aware of the importance of a well-maintained irrigation canal to provide this vital part of crop production. As the canal system ages, it becomes more and more inefficient and water conservation becomes more of a concern especially on some of our drier years.

Please give the Billings Bench Water Association your favorable consideration as they seek funding for this very important project.

Thank you,



Wes Burley  
General Manager

**Main Office – 18 8<sup>th</sup> Ave, PO Box 367, Laurel MT 59044 - PH 406-628-6314**

**Farm Supply Stores**

Laurel – 800 E. Main St, 59044 628-6314  
Hardin – 225 Railroad St., 59034 665-1103  
Bridger – 209 N. Main St, 59014 662-3623

**Agronomy Locations**

Edgar – S. Railroad Ave, 59026 962-3792  
Hardin – 189 Zink Rd, 59034 665-3835  
Lockwood – 3833 Coulson Rd, 59101 702-3427

**C-Stores**

Laurel – 315 S. First Ave, 59044 628-8660  
Laurel – 817 W. Main St, 59044  
Hardin – 1226 Crawford Ave, 59034 665-1155  
Billings – 523 Hilltop Rd, 59105 256-1020

*Gregory C. MacDonald*  
*3200 King Avenue West*  
*Billings, MT 59102*  
*(406) 656-2211*

April 19, 2018

RE: Billings Bench Water  
Association (BBWA)  
Canal Lining

To Whom It Will Concern:

As an owner of land adjacent to the BBWA Canal, and other land in close proximity to the BBWA Canal, all situated in Billings west of South 32nd Street West, I am aware of important physical factors in connection with the canal. These important physical facts include, but are not limited to:

- 1) Water seepage from the canal creates an on-going loss of water occurring continuously during the operation of the canal,
- 2) Stopping canal water seepage would result in increased conservation of water,
- 3) Stopping canal water seepage could allow for more water to be used efficiently and productively for purposes including, but not limited to, agricultural crop production.

As both an independent land owner and a shareholder in the BBWA, I support the grant request(s) contemplated by the BBWA for lining the canal from Shiloh Road to King Avenue West.

Sincerely,

*Gregory C. MacDonald*

Gregory C. MacDonald





April 11, 2018

Kristina Franco  
Secretary – Treasurer  
Billings Bench Water Association  
1111 Main Street  
P.O. Box 50150  
Billings, MT 59105-0150

RE: Letter of Support for Grant Application

Dear Ms. Franco:

This is a letter in support of the grant application being submitted by Billings Bench Water Association. This grant would be used to replace a porous section of their canals with a lining that would reduce water loss.

The snowmelt that provides most of the water for our region is a precious renewable resource. Water that seeps or leaks from the system is lost and is an inefficient use of this resource. Water in our dry prairie is scarce, and agricultural customers are working to be good stewards by utilizing the resource prudently.

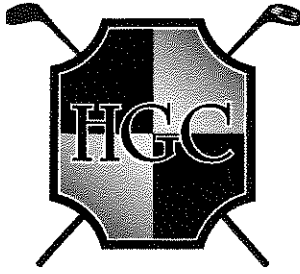
Please give favorable consideration to Billings Bench Water Association's grant proposal for lining the canal. If they can afford to implement this plan, it will save water.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink that reads 'Darryl S. Wilson'. The signature is written in a cursive style.

Darryl S. Wilson  
President



# HILANDS GOLF CLUB

April 18, 2018

To Whom It May Concern:

I am writing as a representative of Hilands Golf Club in Billings, MT in support of a grant application being submitted by the Billings Bench Water Association (BBWA).

Hilands Golf Club is a 9 hole golf course and social club that covers 45 acres in the middle of Billings. We were established in 1923 and have been using the water supplied by the BBWA for our course irrigation the entire time for 95 years now. As you might understand, water to a golf course is its' lifeline and the reliability and economics of what the BBWA supplies us allows us to quite honestly exist as a golf facility. Without this type source of water, I am confident that the economics would not work and our property would become paved roads and a housing development.

We employ 30 staff year round and peak at 90 employees thru the summer months. We have a total expense budget of just over 2 millions dollars and estimate that 75% of that stays in the local economy. There are many environmental benefits that the turfgrass and trees provide in an urban setting such as carbon sequestration, surface water filtration and summer cooling to name just a few that are often overlooked when thinking about the value of a property to a community and the environment. I know that 3 other golf facilities in Yellowstone County rely on the BBWA for their water source and the same factors hold true for them also.

Water is a very precious resource both here in Montana and certainly in most places around the world. The safe and reliable ability, without leakage and possibility of breaches, of BBWA to deliver this resource is extremely important. The ability to have systems like the BBWA for golf and agricultural uses makes a huge contribution to this county's economy and should be considered when looking at funding for projects such as those being considered by the BBWA Directors.

Thank you for your consideration,

Sincerely,

A handwritten signature in cursive script that reads "Peter Grass".

Peter Grass, CGCS  
Golf Course Superintendent  
GCSAA Past President  
Hilands Golf Club