

# Boise Project Board of Control

## Automation of the Platt and Miller Check Structures on the Deer Flat Low Line Canal

*Application for:*

WaterSmart Grants: Small-Scale Water Efficiency Projects for  
FY2017

Funding Opportunity No. BOR-DO-17-F011

April 27, 2017

*Submitted by:*

**Boise Project Board of Control  
2465 Overland Road  
Boise, Idaho 83705-3155**

Tim Page, Project Manager  
[tpage@boiseproject.org](mailto:tpage@boiseproject.org)

Phone: 208-344-1141  
Fax: 208-344-1437

MAY 3 '17 PM 5:01

## Contents

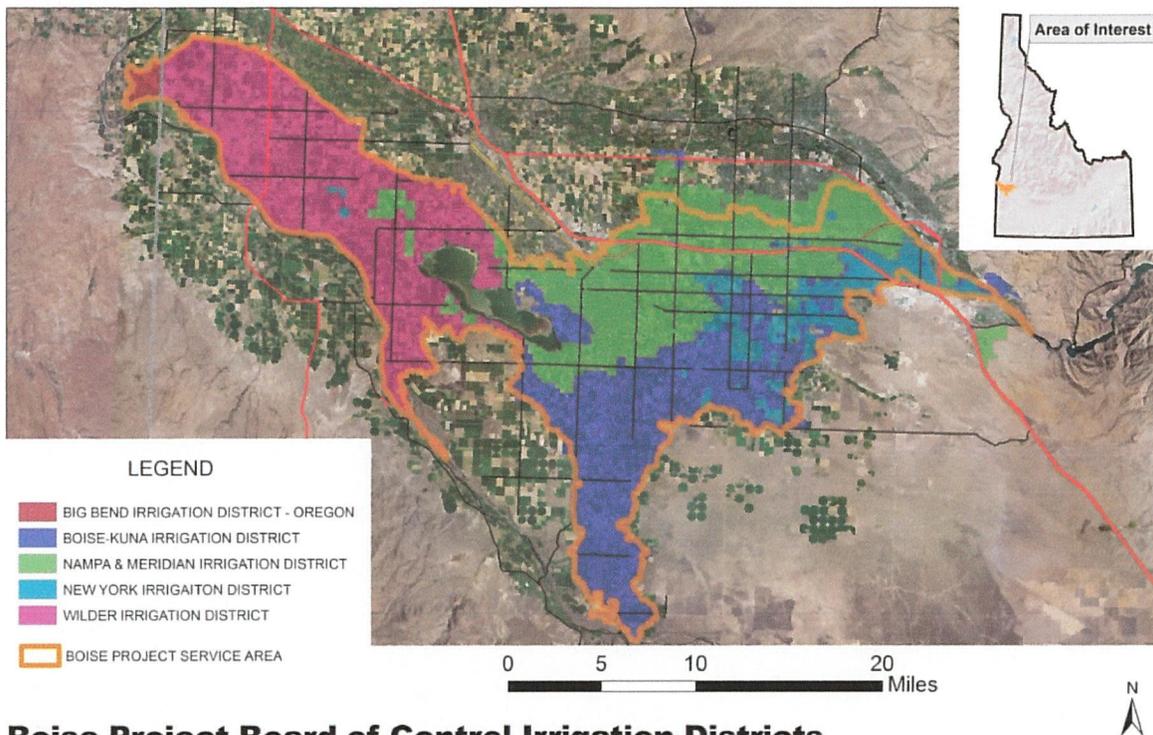
EXECUTIVE SUMMARY .....	3
Background Data.....	4
Table 1: Allotment .....	5
Project Description .....	5
E.1.1. Evaluation Criterion A—Planning Efforts Supporting the Project.....	6
E.1.2. Evaluation Criterion B—Project Benefits.....	7
E.1.3. Evaluation Criterion C—Project Implementation.....	7
Table 2: Estimated Project Schedule.....	8
E.1.4. Evaluation Criterion D—Nexus to Reclamation .....	8
Environmental and Cultural Resources Compliance.....	9
Official Resolution .....	10
Funding Plan and Budget .....	10
Table 3: Funding Sources.....	10
Budget Narrative .....	11
Table 4: Proposed Budget .....	12

April 27, 2017  
Boise Project Board of Control  
Boise, Idaho  
Automation of the Platt and Miller Check Structures on the Deer Flat Low Line Canal  
Canyon County

### ***EXECUTIVE SUMMARY***

The Boise Project Board of Control (BPBC) submits this application for Funding Opportunity Announcement No. BOR-DO-17-F011 through the WaterSMART Grants: Small-Scale Water Efficiency Projects for Fiscal Year 2017 from the Bureau of Reclamation (USBR). Through this application, the Boise Project Board of Control is seeking \$39,282.94 in federal funding assistance. The funding will be used to modify two (2) existing manual check structures, the Platt and Miller Check Structures, located on the Deer Flat Low Line Canal with solar powered, automated control gates. The new equipment will be connected to a Supervisory Control and Data Acquisition system to provide remote sensing and control of the gate operations. The goal of the project is to stabilize and more precisely control flows in the canal, to improve efficiency of use of the water in the irrigation system and to prevent loss from spills and over deliveries. The proposed project is expected to begin in July 2017 and continue through the beginning of April 2018. The Deer Flat Low Line Canal is a USBR federal facility operated and maintained by the Boise Project Board of Control.

## Background Data



### **Boise Project Board of Control Irrigation Districts**

#### ***Boise Project Board of Control***

The Boise Project Board of Control delivers irrigation water on behalf of five (5) irrigation districts established in the early 20<sup>th</sup> Century to serve irrigators with waters made possible by the development of the Arrowrock Division of the Boise Project by the United States Department of Interior, Bureau of Reclamation (USBR). The five districts are:

- Big Bend Irrigation District (Malheur County, OR)
- Boise-Kuna Irrigation District (Ada and Canyon Counties, ID)
- Nampa-Meridian Irrigation District (Ada and Canyon Counties, ID)
- New York Irrigation District (Ada County, ID)
- Wilder Irrigation District (Canyon County, ID)

BPBC delivers irrigation water to approximately 167,000 acres from both Boise River rights and reservoir storage rights in Anderson and Arrowrock Reservoirs held by the USBR in trust for the Districts. The delivery system comprises of over 1,500 miles of canals, laterals and sub-laterals, more than 10,000 individual structures including headgates and check structures, and is operated by a full time staff of approximately 100 dedicated employees. BPBC currently has 8 automated headworks and 3 automated check structures. Improvements on the canals and laterals are done on a yearly basis and including but not limited to piping, lining and recleaning.

Approximately 30,000 users are served by BPBC. The major crops irrigated by the Boise Project Board of Control consists of alfalfa hay, wheat, sugar beets, hops, corn, onion, mint, lavender, apples, grapes and pasture. There are also many dairy farms and livestock facilities in the area that use the irrigated grains to feed their animals. Along with the agricultural use, residents in the urbanized areas use water for lawn and garden irrigation. Though the main

canals and laterals are open channels, there is a diverse mix of ditches, gravity irrigation pipelines, pressurized pipelines and pressurized sprinkler systems throughout the project.

With the exception of 2017, which followed a high precipitation winter, the water supply does not meet the demand, especially following a low snowpack and precipitation year. With a high agricultural acreage, water conservation is an extreme necessity. When storage water is used for irrigation instead of the natural flow of the Boise River, BPBC sets an allotted amount of water per acre. The following table shows the water allotment for the 2011 to 2016 irrigation seasons:

**Table 1: Allotment**

YEAR	ALLOTMENT (acre feet per acre)	DATE
2011	1.80	August 15
2012	1.90	August 1
2013	1.00	April 22
	1.40	June 5
2014	2.25	June 18
2015	1.65	April 16
	2.35	June 3
	2.95	June 12
2016	2.60	June 15

The Boise Project Board of Control delivery system begins with the New York Canal, approximately 7 miles southeast of Boise, is over 40 miles long and delivers a capacity of approximately 2800 cfs of surface irrigation water, with a large portion is delivered to Lake Lowell, an offstream reservoir. Lake Lowell has an usable storage capacity of 144,346 acre feet of water and is located 4 miles southwest of Nampa, Idaho. The Deer Flat Low Line Canal (DFLL) headworks is located at the northwest corner of Lake Lowell and is approximately 37 miles long. DFLL carries up to 1200 cfs of water to irrigate 47,000 acres, including the laterals and canals that divert off of the DFLL. Approximately 3,000 water users are serviced by the DFLL alone. Automation was installed on the Weeks Check Structure the Spring of 2017, which is 1.43 miles from the headworks of the Deer Flat Low Line Canal. The Platt and Miller Check Structures are approximately 2.46 and 3.46 miles respectfully from the headworks.

BPBC was formed to operate and maintain federally financed and owned facilities built under the Reclamation Act of August 30, 1890 and would not exist apart from the efforts of the Federal Government. Its entire history is closely intertwined with the USBR. It was created by the forerunner of the USBR to operate and maintain the federal facilities constructed as part of the Boise Project on behalf of the five irrigation districts established as part of the Boise Project. Irrigation of the lands that BPBC serves would not be possible without the reservoir storage made possible by the Arrowrock and Anderson Ranch reclamation projects.

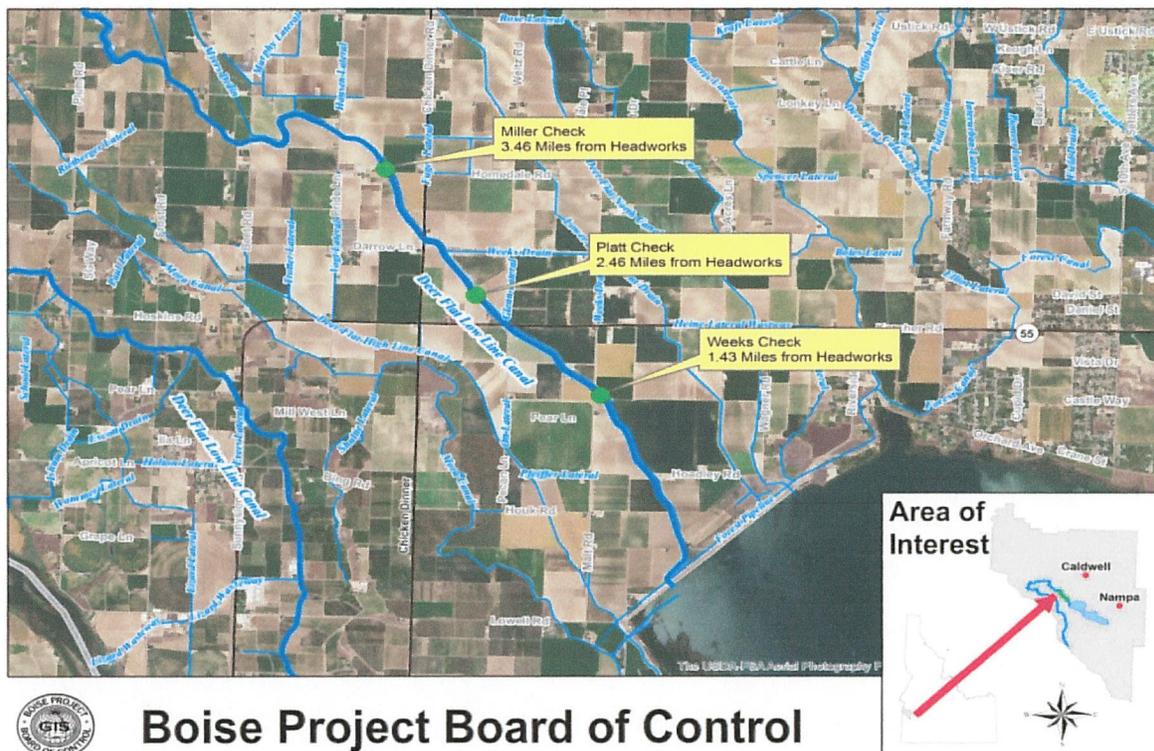
### ***Project Description***

The proposed project consists of installing automation on two check structures, Platt and Miller, located on the Deer Flat Low Line Canal. Both the Platt and Miller check structures each currently consist of seven manually operated stop logs/check boards. The project proposes at each of the check structures to remove, fabricate and install two solar powered, automated

control gates. The new gates will be connected to a Supervisory Control and Data Acquisition system which provides around the clock remote sensing of the checks.

The goal of the project is to allow BPBC to maintain a constant water level, assisting in accurate deliveries both above and below the check structures therefore eliminating over deliveries, the need for carrying water, and losses from spills.

Project planning, procurement and coordination efforts are scheduled to begin in July, 2017. Shop fabrication of mounting frames, supports, walkways and gates will commence after irrigation season in mid-October 2017; field installation of the mounting frames, supports and walkways will begin in February 2018. Installation of gates, actuators and electrical system is expected to commence in mid-to late February 2018, with completion date of end of March 2018. Integration of the new actuators with the existing data logger programming along with final testing and calibration will be completed by the beginning of the 2018 irrigation season in early April.



### *E.1.1. Evaluation Criterion A—Planning Efforts Supporting the Project*

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

It is the goal of the BPBC to conserve as much water as possible. The BPBC adopted a Water Conservation Plan in 2010. This plan addresses installation of appropriate water measurement devices to assure water is not being lost to excess deliveries. This project implements a portion of the Project’s Water Conservation Plan, Objective #4.

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

The Deer Flat Low Line is the largest canal off of Lake Lowell with a capacity of 1,200 cfs and delivers irrigation water for over 47,000 irrigated acres, including the laterals and canals which are diverted off of the DFLL. In the spring of 2017, the BPBC automated the Weeks Check Structure one mile upstream from the Platt check and will continue to work downstream until all checks are automated as an effort to conserve water.

### ***E.1.2. Evaluation Criterion B—Project Benefits***

#### **Describe the expected benefits and outcomes of implementing the proposed project.**

With the installation of automation of these two check structures, less water is needed to provide deliveries above the check structure and less water is needed to carry water downstream for deliveries. Therefore conserving water and making the conserved water available to waterusers for irrigation.

- **What are the benefits to the applicant’s water supply delivery system?**  
There are many benefits to the water supply delivery system: supplies irrigation water to farmers for crop production and to the urbanized areas for lawns and gardens; provides water recreation at Lake Lowell.
- **Extent to which the proposed project improves overall water supply reliability**  
With the installation of automation, this project allows BPBC management to monitor water elevations, prevent over deliveries, and be notified immediately when conditions change, i.e. high flow condition, low flow condition, obstruction or problem, loss of line power, which will allow water conserved to be used as intended, irrigation.
- **The expected scope of positive impact from the proposed project (e.g., local, sub-basin, basin)**  
The expected scope of positive impact is the increase of water conservation and the immediate notification of a change in water levels.
- **Extent to which the proposed project will increase collaboration and information sharing among water managers in the region**  
This project does increase collaboration and information sharing among the five irrigation districts the BPBC delivers water on their behalf. Each district has at least one member on the Board of Directors. The support by all districts is evident in the Official Resolution which was approved by the Board of Directors.
- **Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)**  
Water conservation has a positive impact and benefits everyone. The local farmers will receive the benefit of having more water available for irrigation. With boating and fishing on Lake Lowell, the recreationists will receive the benefits of conserved water remaining in the Lake which also benefits the local economy and tourism.

### ***E.1.3. Evaluation Criterion C—Project Implementation***

- **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.**

The preparation for the project will begin in July 2017 before the end of the irrigation, with planning, environmental study, and procurement of materials by August 2017. BPBC employees will begin the fabrication of the mounting frames, gates and walkway. Some site work will be required to prepare the check structure for modification. Once fabrication is complete, the actuators, electrical mechanics, and solar panels will be installed. Integration into the SCADA program will begin by March 2018 with final testing to be completed before the 2018 irrigation season.

**Table 2: Estimated Project Schedule**

Planning and coordination	July 2017
Environmental Study & Clearance	July 2017
Procurement	August 2017
End of Irrigation Season	Mid-October 2017
Fabrication of mounting frames, supports, walkways and gates	Mid-October 2017 – February 2018
Field installation of gates, actuators and electrical systems	February 2018 – March 2018
SCADA integration	March 2018
Final Testing & Site Operational	March 2018 – April 2018
Beginning of Irrigation Season	April 2018

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

With the project site entirely within BPBC and USBR facilities and easements, no permits are required.

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

BPBC will design and fabricate the new gates along with enlarging the walkway and installing a handrail for safety.

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

There are no new policies or administrative actions required to implement the project.

***E.1.4. Evaluation Criterion D—Nexus to Reclamation***

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

The irrigation districts served by the BPBC are parties to repayment agreements pursuant to the Water Supply Act of 1958 and thus are obligated under Section 210 to the Reclamation Reform Act of 1982 to plan and implement water conservation measures.

- **Will the project help Reclamation meet trust responsibilities to any tribe(s)?**

No, there are no Indian tribes in this area.

- **Does the applicant receive Reclamation project water?**

Yes, BPBC receives the majority of its water from the reservoir storages in Arrowrock and Anderson Ranch reservoirs and Boise River water rights.

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

Yes, the DFLL is a Reclamation facility.

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

Yes, the DFLL is located in the Boise River Basin, a Reclamation project.

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

Yes, the conserved water will remain in the Boise River Basin.

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

**Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.**

Modification of the existing check structures will have minimal earth disturbing construction and have little effect to the surrounding environment. All construction activities, including welding, will be located within the canal and/or easements. A minor trench will be required for electrical wiring.

- **Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?**

There are no known endangered or threaten species in the project site.

- **Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.**

Wetlands are not present within the vicinity of the proposed sites.

- **When was the water delivery system constructed?**

The water delivery system was constructed in 1908.

- **Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**

Some minor modifications will occur to the check structures, with the installation of new gates and a walkway. The check boards have been replaced over time.

- **Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?**

There are no buildings, structures or features listed or eligible for listing on the National Register of Historic Place in the project site.

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

There are no archeological sites within the project area.

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

No, the project will not have any effect on any population

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

The project sites are not within tribal lands.

**• Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?**

The proposed project sites will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

**Official Resolution**

The Board of Directors of the Boise Project Board of Control met on April 5, 2017 at which the Official Resolution was approved and signed by the Chairman of the Board. See Attachment A.

**Funding Plan and Budget**

The BPBC is not relying on any other funding sources for this project. Authorization for this funding is made by the Board of Directors of BPBC, which endorses and supports this grant proposal as evidenced by the Official Resolution included in this application. As taxing authorities, the irrigation districts are legally enabled to assess the users in their districts for the costs of operations, maintenance and improvements. Idaho State Code grants, in considerable details, the ways in which districts may make such assessments and the ramifications for taxpayers who become delinquent. There are no in-kind contributions.

The BPBC is not expecting any costs incurred before the anticipated project start date.

No assistance from any other funding partners, Federal or non-Federal is being sought.

No other funding requests have or will be requested for this project.

**Table 3: Funding Sources**

Funding Sources	Funding amount
Non-Federal Entities	
BPBC	\$39,282.94
<i>Non-Federal subtotal:</i>	\$39,282.94
Requested Reclamation funding:	\$39,282.94
<i>Total project funding</i>	\$78,565.68

## **Budget Narrative**

The budget established for this project is based on actual costs experience in the Winter 2016/Spring 2017 when the Week's Check Structure was automated.

### Salaries & Wages

The following key personnel from BPBC will be charging time on this project:

- Rick Martin, Hydromaster – will oversee, procure materials and manage the project
- Jeremy Strecker, Foreman – will assist the Hydromaster and supervise the laborers and equipment operator.
- BPBC full time laborers (2) will provide the labor for this project. A truck driver and special operator will provide the labor to transport and operate the heavy equipment to lift and move the gates onto the check structure. As required by the FOA, this certifies the labor rates include in the budget proposal represent the actual labor rates as of April 2017.

### Fringe Benefits

Fringe benefits include payroll taxes, health insurance and retirement.

Payroll taxes – Social Security/Medicare: 7.65%

Retirement: 11.32%

Health Insurance: \$648.56 a month

### Equipment

Only one type of heavy equipment will be used for this project: a Caterpillar Backhoe 420F. The backhoe will be used to lift and move the new gates onto the check structure.

### Materials and Supplies

Procurement of materials will begin in July 2017. Prices used in this proposal are based on actual costs from automating the Weeks check structure in Winter/Spring of 2017.

### Contractual

None

### Environmental and Regulatory Compliance Costs

As the proposed project is entirely in the existing canal and its easements, and with minor ground disturbance, environmental costs are expected to be very minimal. However, as instructed in the grant instructions, a cost of at least 1 to 2 percent of the total project cost needs to be budgeted. Therefore, a cost of \$1,540.50 is budgeted.

### Other Expenses

None

### Indirect Costs

None

**BRIAN McDEVITT**  
CHAIRMAN OF THE BOARD

**RICHARD DURRANT**  
VICE CHAIRMAN OF THE BOARD

**TIMOTHY M. PAGE**  
PROJECT MANAGER

**ROBERT D. CARTER**  
ASSISTANT PROJECT MANAGER

**APRYL GARDNER**  
SECRETARY-TREASURER

**JERRI FLOYD**  
ASSISTANT SECRETARY-  
TREASURER

## BOISE PROJECT BOARD OF CONTROL

(FORMERLY BOISE U.S. RECLAMATION PROJECT)

2465 OVERLAND ROAD  
BOISE, IDAHO 83705-3155

OPERATING AGENCY FOR 167,000  
ACRES FOR THE FOLLOWING  
IRRIGATION DISTRICTS

NAMPA-MERIDIAN DISTRICT  
BOISE-KUNA DISTRICT  
WILDER DISTRICT  
NEW YORK DISTRICT  
BIG BEND DISTRICT

TEL: (208) 344-1141  
FAX: (208) 344-1437

### OFFICIAL RESOLUTION FOR WATERSMART GRANTS: SMALL-SCALE WATER EFFICIENCY PROJECTS FOR FY2017

WHEREAS, The U. S. Bureau of Reclamation is seeking proposals from irrigation districts who want to leverage their money and resources by cost sharing with Reclamation on small-scale on-the-ground projects that seek to conserve, better manage, or otherwise make more efficient use of water supplies.

WHEREAS, the Boise Project Board of Control desires to apply for funding through Reclamation's WaterSMART Grant Program;

NOW THEREFORE BE IT RESOLVED that the Board of Directors of the Boise Project Board of Control agree and authorize the following:

1. Tim Page, Project Manager, has the legal authority to sign and enter into the agreement
2. The Board has reviewed and supports this proposal for modifying two check structures, the Platt and Miller, with solar powered automation with connectivity to SCADA program.
3. The Boise Project Board of Control is capable of providing the amount of funding and/or in-kind contributions as specified in the funding plan; and
4. If selected for the WaterSMART Grant, the Boise Project Board of Control will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

Passed and adopted by the Board of Directors of the Boise Project Board of Control during its regular meeting on the 5<sup>th</sup> day of April, 2017.



---

Brian McDevitt  
Chairman of the Board