

**BEFORE THE IDAHO WATER RESOURCE BOARD**

IN THE MATTER OF THE  
TETON RIVER WATER  
TRANSACTION AGREEMENTS

RESOLUTION TO MAKE A FUNDING  
COMMITMENT

1           WHEREAS, the Teton River provides quality habitat for fluvial and resident Yellowstone  
2 cutthroat trout, but is flow and temperature limited at certain times of the year; and  
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4           WHEREAS, it is in the interest of the State of Idaho to increase stream flow and decrease  
5 temperature in the Teton River and its tributaries to encourage the recovery of Yellowstone  
6 cutthroat trout, which are managed as an Idaho Species of Greatest Conservation Need; and  
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8           WHEREAS, the Idaho Water Resource Board (IWRB) is authorized to expend Bonneville  
9 Power Administration funds for flow restoration through the Columbia Basin Water Transaction  
10 Program; and  
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12           WHEREAS, IWRB staff (staff) has developed a two-year groundwater recharge pilot  
13 program to improve flow and temperature conditions for fish in the Teton River; and  
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15           WHEREAS, staff has developed water delivery agreements with local water users to  
16 deliver water to identified groundwater recharge sites for the purpose of improving stream flow  
17 in the Teton River; and  
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19           WHEREAS, a proposal in the amount of \$60,600.00 has been submitted to the Columbia  
20 Basin Water Transaction Program to be used to fund water delivery agreements with irrigators  
21 in the Teton River watershed (\$60,000.00) for the transaction cost and pricing structures set forth  
22 in the attached October 30, 2019 memorandum and the administrative fees associated with  
23 securing Temporary Water Right Permits (\$600.00); and  
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25           WHEREAS, staff anticipates the funds being placed into the IWRB's Revolving  
26 Development Account for annual payment to support the pilot program; and  
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28           WHEREAS, the two-year groundwater recharge pilot program and water delivery  
29 agreements are in the public interest and in compliance with the State Water Plan.  
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31           NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into  
32 water delivery agreements for the purpose of conducting managed recharge, using an amount  
33 not to exceed \$60,600.  
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35           NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the  
36 conditions that the IWRB receives the requested funding from the Columbia Basin Water  
37 Transaction Program in the amount of \$60,600, temporary water right permits authorizing the  
38 diversion of water for managed recharge are secured, and an appropriate Ground Water  
39 Monitoring Program is developed with Idaho Department of Environmental Quality.

DATED this 14 day of November, 2019.

  
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ROGER W. CHASE, Chairman  
Idaho Water Resource Board

ATTEST

  
\_\_\_\_\_  
VINCE ALBERDI, Secretary



## **MEMORANDUM**

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**To:** Streamflow Enhancement and Minimum Streamflow Committee

**From:** Sarah Lien, Friends of the Teton River

**Date:** October 30, 2019

**Re:** Teton River Basin Water Transactions Program – Teton River Flow Transaction

**Action Requested:** Committee vote recommending that the transaction be presented to the Idaho Water Resource Board for a vote on the associated funding resolution

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### **I. Transaction Summary:**

This two-year pilot project aims to generate flow and temperature conditions in the mainstem Teton River to support Yellowstone Cutthroat Trout by increasing flow levels and decreasing temperature during the hottest, driest months of the year. This will be accomplished by conducting managed groundwater recharge efforts, utilizing water from tributary streams during the months of April, May, and June, which will in turn improve flow levels and temperature conditions in the Teton River, via return flows, during the months of June, July, August, September, and October. *See*, attached map depicting approximate location of recharge sites and location of expected response in Teton River.

### **II. Transaction Overview:**

Friends of the Teton River (FTR), in partnership with the Teton Water Users Association (TWUA), present the following flow restoration proposal. *See*, attached document entitled “Description of Teton Water Users Association,” which describes the Teton Water Users Association and provides a list of participating entities. This water transaction proposal aims to generate more favorable conditions for native Yellowstone Cutthroat Trout (YCT) in the Teton River by: (1) stabilizing flow conditions; and (2) decreasing water temperature during the warmest months of the year.

Historically, flow restoration efforts in the Teton River watershed have focused on restoring flows in tributary streams to the Teton River. Those efforts will continue, yet it is critically important to generate favorable conditions for YCT in the Teton River itself. The Teton River is never completely dewatered like most of the tributaries in the watershed, but it is subject to

annual low flow conditions and elevated temperatures, particularly during the latter part of the summer when ~90% of fluvial YCT in the watershed are holding in its waters.

Eight to ten months per year the tributaries to the Teton River are disconnected from the mainstem river itself, limiting the chance to add water via surface flow inputs and demanding the development of an alternative strategy. The watershed demonstrates a three month return flow period, meaning that approximately three months after water seeps into the ground, it will re-emerge as return flow in the Teton River. In short, water recharged during a 60-day window in the spring (April 15 - June 15) will increase base flows and drive down temperatures in the Teton River from June 15 - October 31. Information regarding the groundwater-surface water model upon which this transaction is premised is detailed in a document entitled "Teton Valley Groundwater Surface Water Model," authored by Dr. VanKirk, which is available upon request.

Utilizing the information derived from Dr. VanKirk's model, the TWUA worked to generate water management strategies, appropriate for the Teton River watershed specifically, which will stabilize the local aquifer while improving flow and temperature conditions in the Teton River. As a result, the TWUA implemented an initiative, in 2018 and 2019, that aimed to increase the number of acres being flood irrigated throughout the watershed, in recognition that flood irrigation methods support groundwater levels and, through return flows, have the potential to improve flow and temperature conditions in the Teton River. The TWUA intends to continue this flood irrigation initiative into the foreseeable future.

This two-year pilot project, the subject of this project proposal, builds upon the flood irrigation initiative discussed above through the implementation of a managed groundwater recharge program. Each year of the two-year pilot period, the TWUA aims to recharge 10,000 acre-feet of water, above and beyond any incidental recharge which may result from the flood irrigation initiative. By recharging 10,000 acre-feet of water, the groundwater-surface water model projects an increase in Teton River base flows of ~15-18 cfs from June 15-October 31. The model projects that an additional 4,322 acre-feet of water will accrue to the Teton River, annually, during that June 15-October 31 time period.

The Idaho Department of Water Resources ("IDWR") issues Temporary Water Right Permits, on an annual basis, that allow irrigators to recharge water when the waters of the State of Idaho are abundant. FTR will work with the relevant irrigation entities to apply for, and secure, a Temporary Water Right Permit for the purpose of conducting managed recharge. These permits will be applied for each year of the project and will serve as the legal vehicle by which water is diverted for managed recharge purposes as part of this pilot project. The TWUA anticipates that if this pilot project proves to be a worthwhile effort that it will work with individual irrigation entities to apply for managed recharge water rights.

Friends of the Teton River is actively working with Idaho Department of Environmental Quality to develop appropriate groundwater quality monitoring protocol for this pilot project.

Participating irrigation entities will be contracted to deliver water to identified groundwater recharge sites. The irrigation entities will sign water delivery contracts which specify how water

is to be diverted and delivered to accrue maximum flow and temperature benefits in the Teton River.

### **III. Transaction Cost and Pricing Information:**

Sixty thousand six hundred dollars (\$60,600) is available through the Columbia Basin Water Transaction Program, over the two-year term, to support this transaction. Each year three hundred dollars (\$300) will be utilized to pay the fees associated with applying for Temporary Water Right Permits, while thirty thousand dollars (\$30,000) will be made available for payment to participating irrigation entities.

The pricing structure for this two-year pilot project is as follows:

- If the total quantity of managed recharge in any given year is 7,500 acre-feet or less, participants will be compensated at a rate of \$4/acre-foot recharged.
- If the total quantity of managed recharge in any given year exceeds 7,500 acre-feet, participants will receive a portion of a \$30,000 funding pool, equal to their individual contribution to the total quantity of water recharged. By way of example, for the purpose of illustrating how compensation shall be determined, the following facts are assumed: (1) a participant recharges 750 acre-feet of water; (2) the total quantity of recharge is 10,000 acre-feet; and (3) the funding pool is \$30,000. Compensation shall be calculated as follows:
  1.  $750 \text{ AF (participant's recharge)} / 10,000 \text{ AF (total recharge)} = 0.075$
  2.  $0.075 \times 100 = 7.5\% = \text{participant's percentage of recharge}$
  3.  $\$30,000 \times 7.5\% = \$2,250 = \text{participant's compensation}$

This hybrid payment structure aims to incentivize participation, while simultaneously avoiding the potential that participants may be compensated at a rate in excess of market.

### **IV. Committee Action Requested:**

The transaction has been reviewed by the Columbia Basin Water Transaction Program's technical advisory committee and funding to support the transaction has been authorized.

At this time, FTR requests that the Committee vote to support the transaction and recommend that it be presented to the Idaho Water Resource Board for a vote on the associated funding resolution.