



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

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TO: Colorado Water Conservation Board Members

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DATE: May 23-24, 2018 Board Meeting

AGENDA ITEM: 18. Lease of Water for Instream Flow Use on the Fryingpan River
(Water Division 5)

The Colorado River Water Conservation District, acting through its Colorado River Water Projects Enterprise ("CRWCD"), has offered the Colorado Water Conservation Board ("CWCB") an opportunity to enter into a one-year renewable short-term lease of a portion of water that CRWCD holds in Ruedi Reservoir for instream flow ("ISF") use to boost winter flows in the Fryingpan River below Ruedi Reservoir. CRWCD's offer letter is attached as **Attachment 1**. The CWCB could use the leased water to supplement its existing decreed ISF water right to preserve and to increase flows to improve the natural environment to a reasonable degree on the Fryingpan River. See Vicinity Map attached as **Attachment 2**. The CWCB's decreed ISF water right could benefit from this water, and the reach would benefit from additional flows above the existing decreed ISF rate to help meet winter flow targets set primarily to prevent formation of anchor ice in the river.

Staff recommendation: Pursuant to Rule 6b. of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program ("ISF Rules"), the Board's consideration of this proposal at this meeting will initiate the 120-day period for Board review. **No formal action is required at this time.** The initial presentation of this proposal provides an opportunity for the Board and the public to identify questions or concerns that Staff will address at this or a subsequent meeting.

1. The Board's Water Acquisition Procedures

ISF Rule 6. governs the Board's procedures for acquiring water for ISF use. Section 37-92-102(3), C.R.S. (2017) provides 120 days for the Board to determine what terms and conditions it will accept in an acquisition agreement for water, water rights, or interests in water to preserve or improve the natural environment. ISF Rule 6. requires a minimum of two Board meetings to allow for public input prior to taking final action on a proposed acquisition. The Board's initial consideration of this proposal at its May 2018 meeting initiates the 120-day time period for the Board to consider the terms and conditions of the proposed acquisition. Final action on the proposal could occur at the July 2018 Board meeting. ISF Rule 6m.(4) provides that any person may request the Board to hold a hearing on the proposed acquisition, and that such request must be filed within twenty days of this Board meeting.



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ISF Rule 6e. requires the Board to evaluate the appropriateness of the acquisition and to determine how best to utilize the acquired water to preserve or improve the natural environment. ISF Rule 6. lists several factors the Board may consider in its evaluation of the acquisition that are addressed in this memo.

As required by statute, CWCB staff has requested recommendations from the Colorado Division of Parks and Wildlife (CPW), the U.S. Department of Agriculture and the U.S. Department of Interior. Pursuant to ISF Rule 6m.(1), CWCB staff has provided notice of the proposed acquisition to all persons on the appropriate ISF Subscription Mailing Lists and provided notice to the State Engineer's Substitute Supply Plan Notification List for Water Division 5.

2. Background

The CRWCD has been working with the Roaring Fork Conservancy ("RFC") to evaluate needs and potential available supply to enhance instream flow in the Fryingpan River below Ruedi Reservoir during the winter months under certain conditions. Studies have shown that winter flows of 70 cfs, 31 cfs above the decreed ISF rate of 39 cfs, would benefit the natural environment. The decreed winter ISF rate of 39 cfs is from November 1 - April 30. The objective of the lease would be to maintain Fryingpan River flows at a minimum of 70 cfs when temperatures and low flows could otherwise combine to create anchor ice, which adversely impacts aquatic macroinvertebrates and trout fry.

The CRWCD's Enterprise has offered to lease up to 5,000 acre-feet of water available to it under a perpetual contract with the Bureau of Reclamation. The contract includes an explicit term that the water may be used "...to supplement winter instream flows in the Fryingpan River." The terms for a CRWCD lease for in-channel water uses are set forth in the CRWCD's Water Marketing Policy dated January 17, 2018.

3. Water Proposed for Leased Acquisition

The water rights proposed to be leased to the CWCB would be up to 5,000 acre-feet of water available to the CRWCD in Ruedi Reservoir pursuant to a contract with the Bureau of Reclamation that could be delivered to the Fryingpan River in Pitkin and Eagle Counties ("Ruedi water"). Based upon discussions among the CRWCD, RFC, Colorado Parks and Wildlife ("CPW"), and CWCB staff regarding the need for and use of leased water, staff will recommend that the CWCB lease up to 3,500 acre-feet of the Ruedi water.

4. Reach of Stream Proposed for Use of the Leased Rights

The reach of stream proposed for use of CRWCD's Ruedi water is the Fryingpan River from its confluence with Rocky Fork Creek, adjacent to the outlet of Ruedi Reservoir, down to its confluence with the Roaring Fork River in Pitkin and Eagle Counties, described below and shown on the attached Vicinity Map.

5. Existing ISF Water Rights

The CWCB currently holds an ISF water right on the following reach of the Fryingpan River on which the leased water would be used:

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Case Number	Stream	Upper Terminus	Lower Terminus	CFS Rate (Dates)	Approp. Date
W-1945 (73)	Fryingpan River	confl Rocky Fork Creek	confl Roaring Fork River	39 (11/1 - 4/30) 110 (5/1 - 10/31)	07/12/1973

6. Natural Flow Regime

The Fryingpan River originates in the central Rocky Mountains of Colorado northeast of Aspen in Pitkin County. The headwaters of the Fryingpan River are at the Continental Divide in the Hunter Fryingpan Wilderness at an elevation of about 12,000 feet.

Streamflow in the Fryingpan River is primarily from snowmelt and local precipitation. The hydrology of the basin is influenced by reservoir operations and transmountain diversions. The largest storage facility in the basin is the Bureau of Reclamation's Ruedi Reservoir, located in the lower portion of the watershed approximately 11 miles above the point at which the Fryingpan River flows in to the Roaring Fork River near the town of Basalt. Peak flows typically occur in May, June, and early July and diminish down to base flows July through September; streamflows are characteristically low and steady November through March of most years. The upper basin of the Fryingpan River (above Ruedi Reservoir) is approximately 230 square miles with an extensive tributary network; several of the upper basin tributaries are diverted to the eastern slope via facilities associated with the Fryingpan-Arkansas project.

The Fryingpan River below Ruedi Reservoir flows in a westerly direction through a confined canyon fed by only a few small tributary streams. The streamflow of the Fryingpan River in this canyon is almost entirely made up of Ruedi Reservoir releases, especially during the winter months. The thermal effects of the reservoir create open water conditions virtually year round, making the river a very popular fishery for both local residents and visitors to the area.

7. Existing Natural Environment

The Fryingpan River is a Gold Medal trout fishery renowned for its abundant quality-sized trout, specifically a robust brown trout population and a burgeoning rainbow trout population recovering from the impacts of whirling disease. Mottled sculpin and aquatic invertebrates are the foundation of the diet that supports the Gold Medal fishery. The daily aquatic invertebrate hatches are well known for the consistency and timing such that anglers can "set their watches" to virtually guarantee fish feeding frenzies and predictable conditions for dry fly fishing. The anglers drawn to this fishing opportunity provide a significant economic driver for local communities and the quality fishery is pivotal to the high quality of life for residents and visitors.

Winter flow conditions below the reservoir and the thermal effects of the reservoir have, over time, created fairly predictable conditions for anchor ice formation when stream flows are below 70 cfs and when air temperatures are in the single digits. Extensive anchor ice deposits can have dramatic impacts on aquatic macroinvertebrate numbers and can disrupt

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their life cycles. Impacts on trout fry in the interstitial spaces in the substrate can also occur with the formation and accumulation of anchor ice deposits.

8. Proposed Method of Acquisition

Under this proposal, the CWCB would lease up to 3,500 acre-feet of Ruedi Reservoir water from the CRWCD. The CRWCD and the CWCB will need to negotiate the terms of the short-term lease and work through each agency's respective contracting processes. Any final lease agreement will become effective after approval by both the CWCB and CRWCD's boards of directors. Issues that the lease would address include: (1) the lease term; (2) amount of water to be leased; (3) timing of and coordination on releases; (4) payments to CRWCD for the leased water; (5) the potential for the Bureau of Reclamation to suspend releases when necessary to meet its legal and regulatory obligations; and (6) any other provisions deemed necessary by the parties. The use of the water under the lease is authorized by the Ruedi Reservoir decrees, the CRWCD contract with USBR, and CWCB Board findings and acceptance of the acquired water.

9. Proposed Use of the Acquired Water

The leased water would be used to supplement the existing 39 cfs ISF water right in the Fryingpan River to preserve the natural environment, and used at rates up to 70 cfs to meet RFC and CPW flow recommendations to improve the natural environment to a reasonable degree.

Colorado Parks and Wildlife ("CPW") has reviewed this proposal and provided an initial recommendation letter in support of the project, attached as **Attachment 3**. CPW has observed that increased flows during the winter months improve fish habitat, increase spawning success and fry emergence for brown trout, promote a more robust macroinvertebrate food base for fish, and most importantly, address issues related to anchor ice formation and accumulation, which adversely impacts aquatic macroinvertebrates and trout fry.

Studies cited by the RFC indicate that winter flows of 70 cfs, 31 cfs above the 39 cfs decreed instream flow, would benefit the natural environment. The decreed winter instream flow rate of 39 cfs is from November 1 - April 30. The objective of the lease would be to maintain Fryingpan River flows at a rate of 70 cfs to prevent the formation of anchor ice at times when temperatures and low flows could otherwise combine to create anchor ice.

The RFC estimates that eight weeks, or fifty-six days, is the maximum length of time that the use of leased water would be necessary during any given winter season. That time period would translate to approximately 3,500 AF ($31 \text{ cfs} = 61.487 \text{ af/day} \times 56 \text{ days} = 3,443 \text{ af}$). Based upon its river monitoring system and analysis of weather conditions, the RFC will inform the CWCB of when conditions are conducive to the formation of anchor ice. The CWCB, CRWCD, RFC, and USBR will coordinate on the timing and amount of releases of Ruedi water, requesting such releases, and recording and accounting for the releases.

10. Historical Use and Historical Return Flows

Because this is a release of stored water and does not involve a change of water right, or other mechanism through which return flows would be owed, the Board does not need to consider this factor.

11. Location of Other Water Rights

There are many other water rights located on the Fryingpan River; however, they will not be affected by this release of storage water.

12. Material Injury to Existing Rights

There will be no injury to existing rights. Under this lease, water previously stored in priority under the Ruedi Reservoir water rights would be released during times when temperature and flow conditions are conducive to the formation of anchor ice in the winter months.

13. Stacking Evaluation

When water is available under this lease for ISF use in the Fryingpan River, it can be used to supplement the Board's decreed ISF water rights and may be combined, or "stacked," with the existing ISF water right to achieve a greater level of protection for the natural environment and meet the RFC and CPW flow recommendation to help prevent formation of anchor ice in the winter.

14. Effect of Proposed Acquisition on Any Relevant Interstate Compact Issue

The proposed lease does not negatively affect any interstate compact.

15. Effect on Maximum Utilization of Waters of the State

This proposed lease will promote maximum utilization of waters of the State by allowing stored water to be used for its intended purpose, while at the same time supporting the natural environment of the Fryingpan River.

16. Availability for Downstream Use

Water leased from CRWCD would be available for use downstream of the Fryingpan River.

17. Administrability

Preliminary discussions with the Division 5 Division Engineer indicate that the release and delivery of this water from Ruedi Reservoir through the Fryingpan River pursuant to a contract between CRWCD and the CWCB will be administrable.

18. Potential Benefits of This Proposed Lease

During the duration of this short-term lease, when water is available for ISF use, the released Ruedi water will be protected through the subject reach of the Fryingpan River down to the confluence with the Roaring Fork River. The proposed acquisition would increase stream flows in the Fryingpan River and provide benefits to the fish species that live in this reach.

19. Cost to Complete Transaction

The CRWCD's Water Marketing Policy indicates costs for project year 2018 as \$65.25/AF plus a \$400 non-reimbursable application fee, which, for 3,500 AF, would total \$228,775.00. The CWCB would pay for the lease with funds authorized by section 37-60-123.7, C.R.S. (2017) for acquisitions of water for ISF use to preserve or improve the natural environment.

20. Policy 19 Funding Request

Because staff is requesting the Board to approve an expenditure of funds authorized by section 37-60-123.7, information required by CWCB's Financial Policy 19, which governs such expenditures, is set forth below.

A. Financial Aspects of the Proposal

The price for this lease is based upon the CRWCD's Water Marketing Policy, which sets a price of \$65.25/AF for Ruedi water used in-channel in the Fryingpan and Roaring Fork Rivers to the confluence with the Colorado River, plus a \$400 non-reimbursable application fee. Costs related to negotiating and finalizing the lease agreement can be absorbed as part of the ordinary course of business of the CWCB staff. Consequently, staff will recommend that the Board authorize an expenditure of up to \$228,775.00 for this lease.

B. Required Information from Colorado Parks and Wildlife

Because the acquired water will be used to improve the natural environment to a reasonable degree on the Fryingpan River, Policy 19 requires CPW to provide the following information regarding the subject ISF reach of the River: (1) the degree to which the acquired water will add useable habitat to riffles, pools and runs within the subject ISF reach; (2) the amount of additional useable area for fish and macroinvertebrates that the acquired water will provide; and (3) an analysis of the degree to which the additional water resulting from the acquisition: (1) benefits the natural environment, and (2) does not result in hydraulic conditions that are detrimental to the aspects of the natural environment intended to be benefited by the acquired water, such as habitat requirements for a particular life stage of a fish species. CPW will provide this information prior to the second Board meeting at which the Board will consider this proposed lease.

Attachments

Attachment 1: Colorado River Water Conservation District Offer Letter and Roaring Fork Conservancy Memorandum

Attachment 2: Vicinity Map

Attachment 3: Colorado Parks and Wildlife Letter