



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

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Denver, CO 80203

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Jared Polis, Governor

Dan Gibbs, DNR Executive Director

Rebecca Mitchell, CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Linda Bassi, Chief
Kaylea White, Senior Water Resource Specialist
Stream and Lake Protection Section

DATE: September 16-17, 2020 Board Meeting

AGENDA ITEM: 6. Lease of Ruedi Reservoir Water for Instream Flow Use on the Fryingpan River and 15-Mile Reach of the Colorado River (Water Division 5)

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.

Introduction

The Colorado River Water Conservation District, acting through its Colorado River Water Projects Enterprise (“District”), has offered the Colorado Water Conservation Board (“CWCB”) another opportunity to enter into a one-year short-term lease of a portion of water that the District holds in Ruedi Reservoir for instream flow (“ISF”) use. This would be the second of such leases with the District. In 2018, the Board approved a lease from the District for 3,500 acre-feet of water that the District holds in Ruedi Reservoir for ISF use. Ruedi Reservoir releases made in 2019 pursuant to that lease increased flows in the Fryingpan River below Ruedi Reservoir during the winter, and also supplemented flows in the 15-Mile reach of the Colorado River to help reduce shortfalls to the USFWS’ flow recommendations for the endangered fish critical habitat in that reach. This year, the District has offered to repeat the lease using 3,500 acre-feet from the Reservoir.

The objective of the proposed lease is to help 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 during the time period of January 1 - March 31. The CWCB would 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. Subsequent to this time period, starting on April 1, the balance of the leased water, if any, would be delivered to the 15-Mile Reach as needed to help meet or



reduce shortfalls to USFWS' flow recommendations for the endangered fish critical habitat in that reach. See Vicinity Map at **Attachment 1** and River District Offer Letter at **Attachment 2**.

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. 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 September 2020 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 November 2020 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. 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 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 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

In 2018, the District worked with the Roaring Fork Conservancy ("RFC") to evaluate needs and potential available supply to enhance instream flows 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 (November 1 -April 30), would benefit the natural environment by preventing anchor ice. Based upon those studies and a recommendation from Colorado Parks and Wildlife ("CPW"), the District and CWCB entered into a one-year lease agreement in 2018. Operation of that lease in 2019 provided up to 26 cfs of additional flows from Jan 1, 2019 - March 7, 2019 by releasing 3,201 acre-feet, and proved to be very beneficial toward maintaining Fryingpan River flows at a minimum of 70 cfs when temperatures and low flows could have otherwise combined to create anchor ice, which adversely impacts aquatic macroinvertebrates and trout fry. The balance of the leased water remaining after March 31, 2019 in the amount of 299 acre-feet was released in late September of 2019 for use in the 15-Mile Reach.

This year, the District has offered to lease 3,500 acre-feet of water available to it under two different Ruedi Reservoir Round II Water Sales Contracts with the Bureau of Reclamation



("USBR"). The terms for a District lease for in-channel water uses are set forth in the District's Water Marketing Policy dated January 21, 2020.

3. Water Proposed for Leased Acquisition

The water rights proposed to be leased to the CWCB would be up to 3,500 acre-feet of water available to the District in Ruedi Reservoir pursuant to its Ruedi Reservoir Round II Water Sales Contract No. 079D6C0106 that could be delivered to the Fryingpan River in Pitkin and Eagle Counties ("Leased Water"). The contract includes an explicit term that the water may be used "...to supplement winter instream flows in the Fryingpan River." After March 31, 2021, any remaining Leased Water could be delivered pursuant to the River District's Ruedi Reservoir Round II Water Sales Contract No. 139D6C0101 ("Remaining Leased Water"). That contract authorizes municipal uses in the Colorado River Basin; the contract's definition of "municipal uses" includes "use of water by . . . piscatorial users, including delivery of water to supplement streamflow . . ." Ruedi Reservoir is decreed for several types of use: irrigation, domestic, municipal, generation of electrical energy, stockwatering, industrial, piscatorial, recreation, and other beneficial uses.

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

The reach of stream proposed for use of the Leased 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. The Remaining Leased Water would be used on the 15-Mile Reach of the Colorado River. The reaches are described below and shown on the attached Vicinity Map.

5. Existing ISF Water Rights

The CWCB currently holds ISF water rights on the following reaches of the Fryingpan and Colorado Rivers on which it would use the Leased Water and Remaining Leased Water, respectively:

Case No.	Stream	Segment	Length (miles)	Amount CFS Rates (Dates)	Appropriation Date
W-1945 (1973)	Fryingpan River	confl Rocky Fork Creek to confl Roaring Fork River		39 cfs (11/1 - 4/30) 110 cfs (5/1 - 10/31)	07/12/1973
5-92CW286	Colorado River (15 mile reach)	Tailrace of Grand Valley Pumping Plant to confl Gunnison River	Approx. 15 miles	581cfs (7/1-9/30)	3/5/1992
5-94CW330	Colorado River (15 mile reach)	27.5 Road Gage to confl Gunnison River	Approx. 2 miles	300 cfs (7/1-9/30)	11/4/1994



6. Natural Flow Regimes

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.

The Colorado River originates in the southern Rocky Mountains of Colorado over 2 miles above sea level, flows past Glenwood Springs and Grand Junction, running parallel to I-70, and flows west out of Colorado into Utah. The 15-Mile Reach includes the portion of the river from the Grand Valley Diversion (River Mile 185.1) to the confluence with the Gunnison River in Grand Junction. Streamflow is primarily from snowmelt and local precipitation. Peak flows typically occur in May and June, and drop off quickly in July-September most years. Tributaries include the Blue, Eagle, and Roaring Fork Rivers.

7. Existing Natural Environments

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 guaranteed 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 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.



The 15-Mile Reach of the Colorado River provides critical habitat for two species of endangered fish: the Colorado pikeminnow and razorback sucker. This reach is sensitive to water depletions because of its location downstream of several large diversions. It provides spawning habitat for these endangered fish species as well as high-quality habitat for adult fish.

Due to development on the Colorado River, this reach has experienced declining flows and significant dewatering during the late summer months, and at times, there are shortages in the springtime. As a result, the U.S. Fish and Wildlife Service (“USFWS”) has issued flow recommendations for the 15-Mile Reach since 1989 to protect instream habitat for the endangered fish.

8. Proposed Method of Acquisition

Under this proposal, the CWCB would lease 3,500 acre-feet of Ruedi Reservoir water from the District. The District 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 District’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 District for the leased water; (5) the potential for the USBR 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 District contract with USBR, and CWCB Board findings and acceptance of the acquired water.

9. Proposed Use of the Acquired Water

From January 1 - March 31, 2021, the Leased Water would be used to supplement the existing 39 cfs ISF water right in the Fryingspan River to preserve the natural environment, and used at rates up to 70 cfs to meet the RFC and CPW flow recommendations to improve the natural environment to a reasonable degree. The decreed winter instream flow rate of 39 cfs is from November 1 - April 30. The objective of the lease would be to maintain Fryingspan 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. See RFC memo at **Attachment 3**.

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 cfs = 61.487 af/day X 56 days = 3,443 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.

Additionally, CPW has observed that increased flows on the Fryingspan River 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. CPW will provide its written recommendation at the November Board meeting.

From April 1 - June 30, any Remaining Leased Water would be used on the 15-Mile Reach of the Colorado River to provide an incremental amount of water to preserve the natural environment by helping meet or reduce shortfalls to the USFWS flow recommendations.

From July 1 - September 30, any Remaining Leased Water would be used to supplement existing ISF water rights in the 15-Mile Reach to preserve the natural environment, and to provide water to help meet or reduce shortfalls to the USFWS flow recommendations for the endangered fish critical habitat. The CWCB's use of the Remaining Leased Water above the decreed ISF rates to meet the USFWS flow recommendations will improve the natural environment to a reasonable degree.

CPW has confirmed that the USFWS flow recommendations and related biological studies, developed in 1989, refined in 1995, and incorporated into the 1999 Programmatic Biological Opinion ("PBO") for the Upper Colorado River above its confluence with the Gunnison River, formed the basis for the ISF water rights held by the Board on the 15-Mile Reach of the Colorado River. Based upon the numerous actions of the State over the years supporting the Upper Colorado River Recovery Program and the PBO, and the ongoing need for water in the 15-Mile Reach, CPW recommends moving forward with this proposal and will provide its written recommendation for the November Board meeting.

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 and Colorado River; however, they will not be affected by this release of stored water for ISF use on the Fryingpan River and delivery to and use on the 15-Mile Reach.

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, and when needed to supplement flows in the 15-Mile Reach.

13. Stacking Evaluation

When the Leased Water is available under this lease for ISF use on the Fryingpan River or Remaining Leased Water is available for ISF use on the 15-Mile Reach, 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 to help meet the USFWS flow targets for the endangered fish.

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 generating hydropower at the Ruedi power plant, supporting the recovery of endangered fish within the Upper Colorado River Basin, and making water available to downstream users.

16. Availability for Downstream Use

Remaining Leased Water would be available for use downstream of the 15-Mile Reach of the Colorado River.

17. Administrability

Discussions with the Division 5 Division Engineer indicate that the release and delivery of the Leased Water and Remaining Leased Water from Ruedi Reservoir to and through the Fryingpan River and the 15-Mile Reach pursuant to a lease agreement between the District and the CWCB will be administrable.

18. Potential Benefits of This Proposed Lease

During the duration of this short-term lease when Leased Water is available for ISF use, such 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. Any Remaining Leased Water will be used in the Colorado River and be protected through the 15-Mile Reach, down to the confluence with the Gunnison River. The proposed acquisition would increase stream flows in the Colorado River and provide benefits to the two species of endangered fish that live in this reach.

19. Cost to Complete Transaction

The District's Water Marketing Policy indicates costs for project year 2021 at \$68.50/AF, which, for 3,500 AF, would total \$239,750.00. At its September 1, 2020 meeting, the District's Board waived the \$400 non-reimbursable application fee for the lease. The CWCB would pay for the lease with funds authorized by section 37-60-123.7, C.R.S. (2019) 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 \$68.50/AF for Ruedi water used in-channel in the Fryingpan and Roaring Fork Rivers to the confluence with the Colorado River. 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 \$239,750.00 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 and on the 15-Mile Reach of the Colorado River, Policy 19 requires CPW to provide the following information regarding the subject ISF reaches: (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

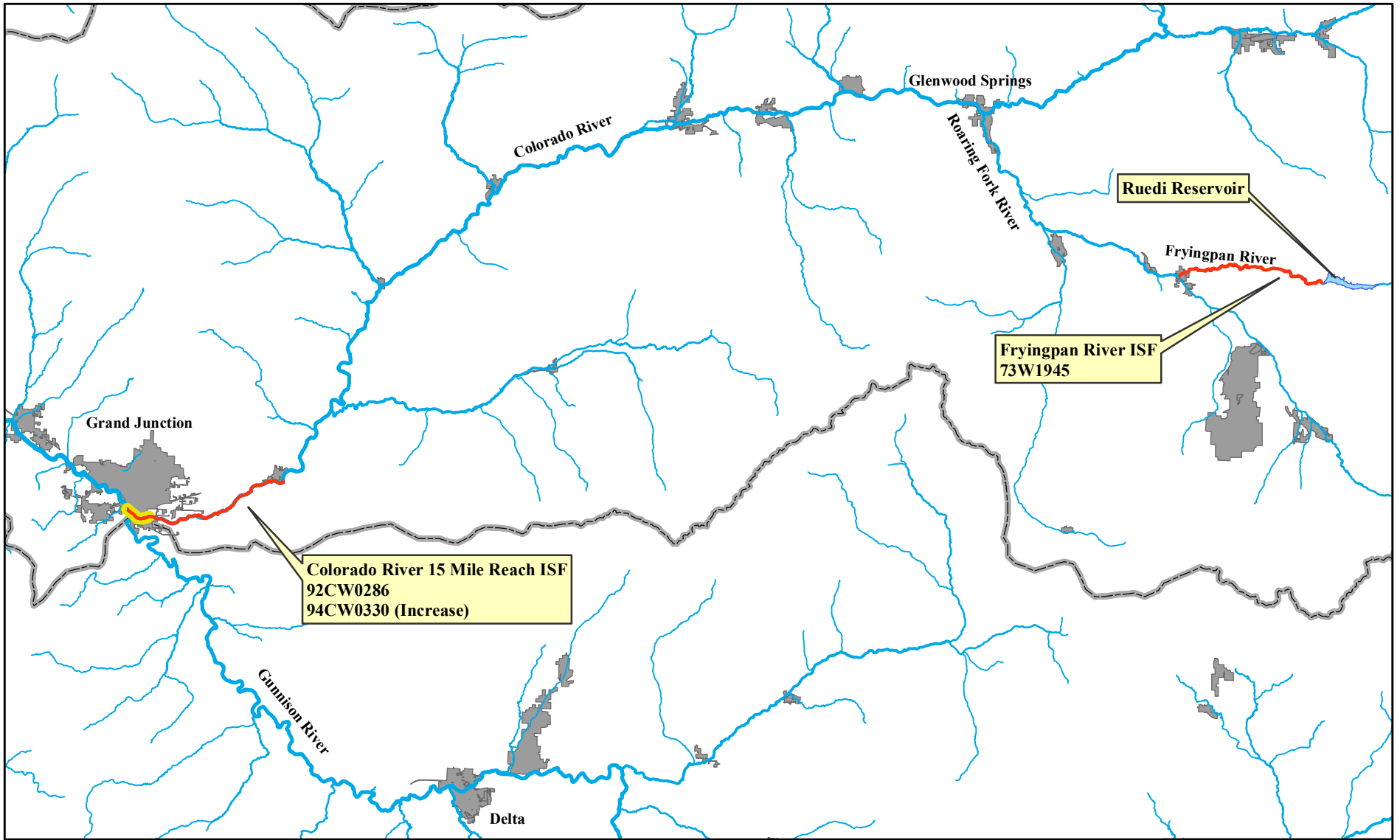
Attachment 1: Vicinity Map

Attachment 2: District's Offer Letter

Attachment 3: Roaring Fork Conservancy's Memo

Attachment 4: Letter of Support

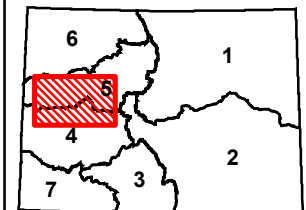
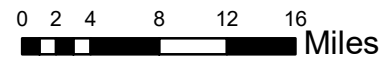




COLORADO
Colorado Water Conservation Board

Department of Natural Resources

September 16-17, 2020 CWCB Board Meeting
 Agenda Item 6: Colorado River Water Conservation District
 Lease of Ruedi Water for Instream Flow Use
 (Division 5)





COLORADO RIVER DISTRICT

PROTECTING WESTERN COLORADO WATER SINCE 1937

Linda J. Bassi
Chief, Stream and Lake Protection Section
Colorado Water Conservation Board
1313 Sherman St., Rm. 721
Denver, CO 80203

September 1, 2020

Re: Lease of Ruedi Reservoir Water for Frying Pan River Winter Instream Flow Enhancement

Dear Linda:

By this letter the Colorado River Water Conservation District (River District) acting through its Colorado River Water Projects Enterprise (“Enterprise”), expresses its willingness to lease 3,500 acre-feet (AF) of Ruedi Reservoir water to the CWCB for Frying Pan River winter instream flow enhancement during the 2021 calendar year.

Background – 2018 Lease with the CWCB

In 2018 the CWCB, in collaboration with Roaring Fork Conservancy, entered into a contract with the River District for 3,500 AF of Ruedi Reservoir water for the primary purpose of enhancing the instream flow in the Frying Pan below Ruedi Reservoir between January 1 and March 31, 2019 to prevent anchor ice formation. 3,200 AF was delivered between January 1 and March 7, increasing Fryingpan flows approximately 25 cubic feet per second (cfs) above the 39 cfs decreed instream flow. The 300 AF balance was used later in the 2019 calendar year to enhance flows in the 15 Mile Reach of the Colorado River for endangered fish recovery purposes.

The need for this enhanced winter flow is outlined in more detail in the companion letter provided by the Roaring Fork Conservancy.

Colorado River District Applicable Ruedi Contracts

The River District’s Enterprise maintains five perpetual Ruedi contracts with the Bureau of Reclamation. The requested 3,500 AF lease volume will be credited to two River District contracts.

Water delivered to supplement winter instream flows from January 1 – March 31, 2021 will be delivered pursuant to the River District’s Ruedi Reservoir Round II Water Sales Contract No. 079D6C0106 with the Bureau of Reclamation. This contract at ¶6. b. explicitly provides that leased water may be used “...to supplement winter instream flows in the Fryingpan River.”



Lease of Ruedi Reservoir Water for Frying Pan River Winter Instream Flow Enhancement

In the event only a portion of the 3,500 AF is delivered to supplement winter instream flows the balance may be delivered to the 15 Mile Reach between April 1 and December 31, 2021. The balance will be delivered pursuant to the River District's Ruedi Reservoir Round II Water Sales Contract No. 139D6C0101 with the Bureau of Reclamation

Contract Term and Pricing

The River District proposes to enter into a lease with the CWCB essentially identical to the 2018 lease. Key terms include:

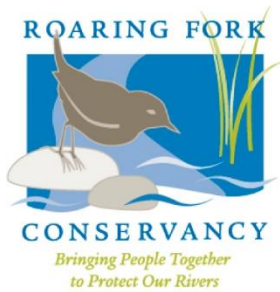
1. The contract will be for the 2021 calendar year (January 1 – December 31).
2. The cost for a contract for year 2021 be \$68.50/AF as set forth in the River District's Water Marketing Policy. Note that the price is slightly higher than the \$65.25/AF paid for the 2018 lease. The higher price is consistent with the Water Marketing Policy which provides for annual price increases not to exceed the sum of the Consumer Price Index plus the New Growth Index. Similar to the 2018 contract with the CWCB, the River District Board of Directors has graciously agreed to waive the standard \$400 contract application fee.

The River District is pleased to have this opportunity to work with the CWCB on a lease that would benefit winter stream flows in Fryingpan River below Ruedi Reservoir. We look forward to working with you to complete this transaction. Please let us know if we can provide any additional information to assist in CWCB's consideration of this proposal.

Respectfully,

John M. Currier, P.E.
Chief Engineer
Colorado River District

Cc: Heather Tattersall Lewin, Roaring Fork Conservancy
April Long, Ruedi Water and Power Authority



MEMORANDUM

TO: CWCB Board and Staff
FROM: Heather Lewin, Roaring Fork Conservancy
RE: Lease of Water in Ruedi Reservoir for Winter Release
Date: August 31, 2020

The Colorado River Water Conservation District (“District”) has been in discussions with Roaring Fork Conservancy (“RFC”) regarding the possibility of leasing water currently held under contract by the District for release from Ruedi Reservoir during the winter months under certain conditions. We would like to propose that this lease be held and funded by the CWCB using funds from the Board’s Construction Fund as allowed under section 37-60-123.7, C.R.S..

The parameters of the lease would be as follows:

1. The District currently holds contracts with the US Bureau of Reclamation for a total of 11,413.5 af of water in Ruedi Reservoir, of which 3500 af is available to supplement instream flows on the Fryingpan River.
2. RFC has provided information showing the potential environmental impacts of low winter flows on the Fryingpan River and the benefits of augmenting those flows as detailed below. The objective of the lease would be to maintain Fryingpan River flows at a between 60 and 70 cfs or up to 31 cfs above the current minimum flow of 39 cfs when temperatures and low flows combine to create anchor ice.
3. A combination of flow levels and temperature creates icing conditions, so it is difficult to predict with certainty when, or in what amount releases would be necessary. For instance, extremely low temperatures could create anchor ice even when flows are already above the minimum of 39 cfs, while high temperatures could lead to ice-free conditions even when flows are at 39 cfs or below. It is reasonable to assume that eight weeks, or fifty-six days, is the maximum length of time that augmentation would be necessary during any given winter season.
4. The mechanics of the lease would work as follows: RFC, through their river monitoring system and analysis of weather conditions, will call for additional releases when conditions are conducive to the formation of anchor ice. Additional releases would be limited to the amount necessary to bring Fryingpan flows at Ruedi Dam between 60 and 70 cfs. Releases would continue until anchor ice conditions abated, at which time RFC will notify the Bureau of Reclamation to halt additional releases. RFC will keep the District informed of

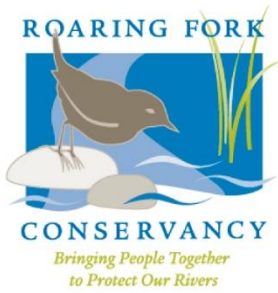
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**Attachment 3
Agenda Item 6
Sept 16-17, 2020**

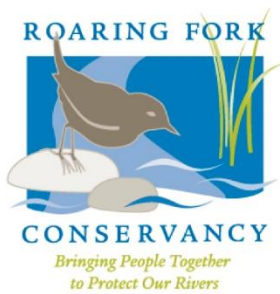


the timing and amount of all releases with total releases between December and April not to exceed 3,500 af.

5. The CWCB will contract with the District pursuant to the District's current water marketing policy.
6. Releases may be suspended by Bureau of Reclamation when those releases preclude the Bureau from managing Ruedi Reservoir consistent with the Bureau's legal and regulatory obligations. Any such suspension will be accompanied by written communications to RFC, the CWCB and the District detailing the reason(s) for that suspension.
7. The term of the lease will be for one year beginning January 1, 2021. An extension or renewal of the lease may be negotiated between the parties at their discretion.
8. The following summarizes the findings of previous studies of anchor ice and its impact on the Fryingpan River fishery:

From *Summary Report: A Study of Macroinvertebrate Community Response to Winter Flows on the Fryingpan River - August 11, 2004* (Bill Miller):

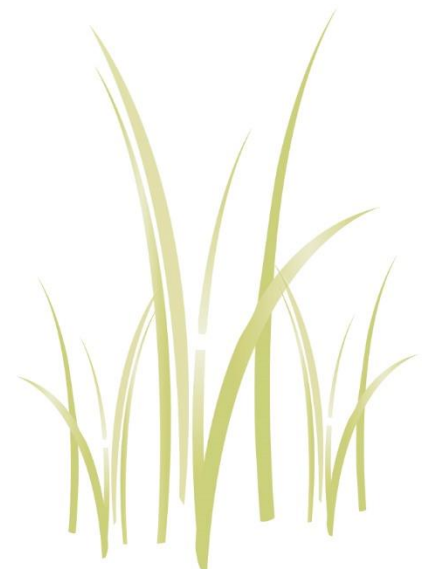
- *Aquatic macroinvertebrate communities were evaluated as a means to elucidate the relationships between winter base flows, anchor ice and macroinvertebrates community structure. The magnitude of discharge may be the most important factor that influences macroinvertebrates during the winter months. (p16)*
- *The formation and frequency of occurrence of anchor ice at FPR-TC appears to be a contributing influence on macroinvertebrate community structure and function. Recent data suggests that two or more concurrent winters with higher flows may be necessary to achieve an optimum balance in the macroinvertebrate community.(p18)*
- *Results of this study suggest that magnitude of discharge and air temperature work together to influence anchor ice formation. The lower discharge at site FPR-TC in 2002-2003 was much more conducive to the formation of anchor ice than the higher flows during the following winter.(p.22)*
- *The available data suggest that anchor ice was at least partially responsible for the degraded condition of the macroinvertebrate*



community at FPR-TC during the spring of 2003. To alleviate anchor ice related stress to the macroinvertebrate community, an effort should be made to avoid low wintertime releases out of Ruedi Reservoir.(p.23)

From Summary Report: A Study of Macroinvertebrate Community Response to Winter Flows on the Fryingpan River - September 10, 2006 (Bill Miller):

- *Results of this study suggest that magnitude of discharge and air temperature work together to influence anchor ice formation.(p.17)*
 - *It appears that macroinvertebrate diversity and evenness recover in one to two years after severe anchor ice formation if winter flows remain greater than 70 cfs. • Flows greater than 70 cfs seem to result in less anchor ice in the upper half of the river than flows of approximately 40 cfs. (p. 22)*
9. Agreement from the U.S. Bureau of Reclamation that these releases will not interfere with or compromise their ability to manage the reservoir under most circumstances.
 10. Agreement from Colorado Parks and Wildlife that these releases will not degrade or compromise habitat, biomass or other environmental conditions in and adjacent to the Fryingpan River.





RUEDI WATER & POWER AUTHORITY

0238 Fawn Drive
Carbondale, Co 81623
970.963.4959
www.rwapa.org

Celene Hawkins, Chair
Colorado Water Conservation Board
1313 Sherman Street
Room 718
Denver, CO 80203

Dear Ms. Hawkins,

I am writing to express Ruedi Water and Power Authority's (RWAPA) strong support for the lease of Ruedi Reservoir water for winter instream flow use on the Fryingpan River and 15-Mile Reach of the Colorado River.

RWAPA is a regional water agency in the Roaring Fork Watershed, directed by a Board with an elected official from each local government within the watershed – Aspen, Snowmass Village, Basalt, Carbondale, Glenwood Springs, Pitkin and Eagle Counties. Our mission is to mobilize resources and influence to protect and enhance the waters and communities of the Roaring Fork Watershed.

The Fryingpan River is an extremely valuable resource for our communities because of its natural beauty, rich environment, and recreational opportunities. In 1979, the lower Fryingpan River became the first recognized "Gold Medal" trout stream in the state and in 2015 it was determined to generate nearly \$4 million in local economic value annually. Water released from Ruedi Reservoir influences the quality of the instream and riparian habitat of this river. Low flows, especially in winter, can contribute to the formation of anchor ice and compromise the quality of trout habitat, resulting in environmental and economic impacts to the area.

In 2018 the CWCB, in collaboration with Roaring Fork Conservancy, entered into a contract with the Colorado River District for 3,500 AF of Ruedi Reservoir water for the primary purpose of enhancing the instream flow in the Fryingpan below Ruedi Reservoir between January 1 and March 31, 2019 to prevent anchor ice formation. 3,200 AF was delivered between January 1 and March 7, increasing Fryingpan flows approximately 25 cubic feet per second (cfs) above the 39 cfs decreed instream flow. Anecdotally, anchor ice formed in December of 2018 in the lower Fryingpan and nearby in the Roaring Fork River. When the additional releases began in January 2019, the anchor ice in the Fryingpan slowly melted and no other formation or damage was observed. However, anchor ice nearby in the Roaring Fork River, regularly broke apart, ripped river bottom, and reformed throughout that winter, potentially damaging the macroinvertebrate populations of the riverbed.

RWAPA greatly appreciated the efforts and expenses of the state in 2018-2019. And, upon seeing the success of this operation achieved and preparing for another low base flow in the Fryingpan this winter, RWAPA encourages the CWCB to support this lease to enhance flows and protect the environment of the Fryingpan River again this year.

Sincerely,


April Long, Executive Director

Ruedi Water and Power Authority

Attachment 4
Agenda Item 6
September 16-17, 2020