



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Linda Bassi, Section Chief
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DATE: January 25-26, 2021 Board Meeting

AGENDA ITEM: 18. Plan for Augmentation to Augment Stream Flows on the Cache la Poudre River (Water Division 1)

Introduction

Water users of the Cache la Poudre River have requested assistance from the CWCB and Colorado Water Trust (“CWT”) to develop a mechanism by which to dedicate water rights to the stream to preserve and improve the natural environment along a portion of the Cache La Poudre River. After extensive discussion about potential mechanisms over several years, legislative action in 2020 provided direction under which CWCB and co-applicants may file a water court application for a plan for augmentation to augment stream flows. HB20-1037, codified at sections 37-92-102(4.5) and 37-92-305(8)(c), C.R.S. (2020), See Exhibit PF1 to the [November 2020 board memo #23](#). The Cache la Poudre River augmentation plan (“Poudre Flows Plan” or “Plan”) represents the first application proposed to be filed under section 37-92-102(4.5). The Board’s consideration of the Poudre Flows Plan at this meeting constitutes the Board’s initial look at the plan for augmentation to augment stream flows through a section of the Cache la Poudre River from the canyon mouth to its confluence with the South Platte River. Three additional companion memos describe offers from three area municipalities of “Seed Water Rights” as the initial sources of augmentation water to be included in the Poudre Flows Plan. The location map is attached Exhibit 1 showing the general area, the stream segments to be augmented, locations of use for the seed water rights, and the flow rates recommended by Colorado Parks and Wildlife (“CPW”) to preserve and improve the natural environment to a reasonable degree in the stream segments.

Staff Recommendation

- Determine that the flow rates recommended by CPW and set forth in Table 2 in this memo, which will be included in the water court application are appropriate to preserve and improve the natural environment to a reasonable degree within the Subject Reach of the Cache la Poudre River as set forth in Table 2; and
- Direct Staff to work with the Attorney General's Office and the Co-Applicants to file a water court application for “approval of a plan for augmentation to augment stream flows” in accordance with 37-92-102(4.5), the new statute governing the CWCB’s water court applications for plans for augmentation to augment stream flows.



Background

Over the past few years, a working group called the “Poudre Runs Through It,” (“PRTI”), facilitated by the Colorado Water Institute at Colorado State University, has been exploring options to improve portions of the Cache la Poudre River as a healthy, working river. The PRTI group formed a “FLOWS committee” to seek innovative ways to increase river flows at critical times and places along the river without harming private property rights. From that group, a partnership emerged as “Poudre Flows,” which has introduced the concept of a plan for augmentation to augment stream flows to preserve and improve the natural environment of the Cache la Poudre River. Augmentation supplies to help fulfill the stream flow needs in the Cache La Poudre River have been offered by three of the Poudre Flows municipal partners: Fort Collins, Thornton, and Greeley. The water rights offered will constitute “Seed Water Rights,” as the first water rights to be used in the stream augmentation plan. These municipal partners, along with Northern Colorado Water Conservancy District (“Northern Water”), have also contributed significant financial support for this project.

The reach of the Cache la Poudre to be augmented extends from the mouth of the Poudre Canyon to its confluence with the South Platte River, a distance of approximately 55 miles (“Subject Reach”). Colorado Parks and Wildlife (“CPW”) has recommended seasonal flow rates to preserve and improve the natural environment in the six river segments representing different stream habitats and flow regimes, as shown in Exhibit 1, as analyzed in CPW’s “Flow Quantification Report for the Cache la Poudre River in Larimer and Weld Counties,” CPW October 2020, (“CPW Flow Quantification Report”), attached as Exhibit PF3 to the [November 2020 board memo #23](#).

The Poudre Flows engineering consultant (Spronk Water Engineers, Inc., “SWE”) has created a point-flow model for the Subject Reach of the Cache la Poudre River to estimate the stream flow patterns and to identify needs in the river. SWE developed the point flow model using historical hydrological records, stream gages, diversion records, and return flow records for the years 2002 through 2019. Once SWE developed and calibrated the model, they combined CPW’s recommended seasonal flow rates in the six specific river segments with the historical period in order to estimate the stream areas and times of year when the river would likely experience a gap between actual estimated flow conditions and the recommended stream flow rates. The point-flow model shows that in every year type (wet, dry, and average), the estimated stream flow in certain segments of the subject reach falls short of the recommended rates to preserve and improve the natural environment to a reasonable degree. The shortages vary by location, season of year, and type of year. See SWE’s “Preliminary Engineering Poudre Flows Augmentation Plan,” SWE November 2020, attached as Exhibit PF4 to the [November 2020 board memo #23](#). The model analysis, which SWE first presented in 2017, bolstered the commitment and encouraged the efforts of the Poudre Flows partners to continue to move forward to find a way to create a plan of augmentation plan to augment stream flows in the Cache la Poudre River.

As the efforts moved forward, the CWCB entered into a partnership agreement with water users, including Northern Water, the Cache la Poudre Water Users Association (“Association”),

the Cities of Fort Collins, Greeley and Thornton, and the Colorado Water Trust (“CWT”) through a Memorandum of Agreement for Phase II of the Cache la Poudre River Instream Flow Augmentation Plan (“Phase II MOA”), dated February 8, 2020. See Exhibit PF5 to the [November 2020 board memo #23](#). The Phase II MOA continues the efforts set forth in the earlier Agreement Regarding Phase I (Development) of a Multi-phase Plan for an Instream Flow Augmentation Plan on the Cache la Poudre River (“Phase I MOU”), to which the CWCB was not a party.

The CWCB's Role in the Poudre Flows Plan

Pursuant to section 37-92-102(4.5), and under the Phase II MOA, the CWCB and its partners would file a joint application in water court to request approval of the Poudre Flows Plan to be captioned “Application for Approval of a Plan for Augmentation to Augment Stream Flows Pursuant to section 37-92-102(4.5) on the Cache la Poudre River.” The water court application would include a detailed description of the plan, and a description of each of the offered Seed Water Rights. The water court application would include a process to add augmentation supplies into the Poudre Flows Plan after the decree is entered, pursuant to section 37-92-305(8)(c).

Each new water right to be added to the Plan would be brought to the CWCB Board under its Rule 6 acquisitions procedure. As required by the new augmentation statute, section 37-92-102(4.5), the water rights to be used in the Poudre Flows Plan must have already been changed to augmentation use and the historical consumptive use must have been quantified in water court. Once approved by the Board and after entering into Water Delivery Agreements, water users would make water available to the CWCB for use in the Subject Reach up to the rates as specified by the Board. The CWCB would request administration as necessary to protect the flows from diversion by others in the reach of stream extending from the point of delivery within the subject reach to the end of the reach, or to the point of re- diversion or re-use, whichever is higher on the system. The water right owner may then bring about the beneficial use of the water downstream of the augmented portion of the Cache la Poudre River. This subsequent use of the delivered water would be authorized by the Poudre Flows Plan water court decree or the underlying decrees for the augmentation supplies.

Upon the Board’s final action on this proposal, the CWCB and its partners would proceed to file the joint water court application and would add appropriate terms and conditions to the proposed decree as needed to protect water users from injury. See draft water court application, captioned “Application for Approval of a Plan for Augmentation to Augment Stream Flows on the Cache la Poudre River Pursuant to C.R.S § 37-92-102(4.5),” attached as Exhibit PF6 to the [November 2020 board memo #23](#).

The Board’s Water Acquisition Procedures

Rule 6 of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program (“ISF Rules”) sets forth the Board’s procedures for acquisition of water, water rights, or interests in water for instream flow (“ISF”) purposes. This proposed Poudre Flows Plan would include a portfolio of acquired interests in water rights under Rule 6, starting with the seed

water rights that the municipal Poudre Flows partners offer to the Board today. Section 37-92-102(3) provides 120 days for the Board to determine any terms and conditions it will accept for the acquisition Water Delivery 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 the Board taking final action on a proposed acquisition. Therefore, the Board's initial consideration of this proposal at the November 2020 Board meeting initiated the 120-day time period for the Board to consider the proposal. Final action on the proposal can occur at this January 2021 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 a request must be filed within twenty days of this Board meeting. No such request was filed.

ISF Rules 6e and 6f require the Board to evaluate the appropriateness of an acquisition and determine how best to utilize the acquired water rights to preserve or improve the natural environment. The ISF Rules list several factors the Board may consider in its evaluation of the acquisitions. Each of the water rights currently considered for the Poudre Flows Plan will be evaluated using the factors, and an analysis applying the factors for each of the water rights is covered in the separate Seed Water Right memos. This memo addresses the factors as necessary to evaluate the overall Poudre Flows Plan as a plan for augmentation to augment stream flows.

Pursuant to statute, Staff has requested recommendations from Colorado Parks and Wildlife ("CPW"), the U.S. Department of Agriculture, and the U.S. Department of Interior. Pursuant to ISF Rule 6m(1), Staff has provided notice of the proposed Poudre Flows Plan and the proposed acquisition of interest in the Seed Water Rights to all persons included on the appropriate ISF Subscription Mailing Lists and to the State Engineer's Substitute Supply Plan Notification List. Staff has requested a biological analysis from CPW pursuant to Rule 6f(2). CPW will address the Board regarding the Poudre Flows Plan at the Board meeting. CPW's written recommendation is attached as Exhibit PF7 to the [November 2020 board memo #23](#).

Summary of Proposed Poudre Flows Plan

Pursuant to section 37-92-102(4.5), and under the Phase II MOA, the CWCB would be a co-applicant in water court to secure a water court decree that approves the Poudre Flows Plan and use of the Seed Water to augment stream flows, as well as a procedure to add water rights as future sources of augmentation for the Plan. Once accepted into the Plan, and via individual Water Delivery Agreements, the CWCB would protect water delivered into the Subject Reach, through the individually specified segments for each water right, up to the maximum rates as approved by the CWCB Board, and as set forth in the water court decree. The Subject Reach to be augmented is segmented into six segments (A-F) representing different biological and hydrological conditions, as shown below.

Table 1
Segment Upper and Lower Termini

Segment	Upper Terminus	Lower Terminus
A	Canyon Gage	Larimer and Weld Canal Diversion
B	Larimer and Weld Canal Diversion	Spring Creek Confluence
C	Spring Creek Confluence	New Cache la Poudre Ditch Diversion
D	New Cache la Poudre Ditch Diversion	County Road 17 Crossing
E	County Road 17 Crossing	59 th Avenue Bridge
F	59 th Avenue Bridge	South Platte River Confluence

Based on the CPW Flow Quantification Report, the CWCB will use water provided under the Poudre Flows Plan to augment stream flow to preserve and improve the natural environment to a reasonable degree by maintaining flows up to the rates specified in the following table.

Table 2
CPW Flow Quantification Seasonal Recommendations

Segment	Winter (Nov - March) Preserve (cfs)	Winter (Nov - March) Improve (cfs)	Summer (Apr - Oct) Preserve (cfs)	Summer (Apr - Oct) Improve (cfs)
A	Up to 80	80 - 150	Up to 114	114 - 260
B	Up to 80	80 - 150	Up to 114	114 - 260
C	Up to 30	30 - 54	Up to 40	40 - 54
D	Up to 10	10 - 35	Up to 10	10 - 40
E	Up to 15	15 - 30	Up to 15	15 - 30
F	Up to 15	15 - 30	Up to 15	15 - 30

Existing Instream Flow Water Rights

CWCB does not currently hold any instream flow water rights in the Subject Reach of the Cache la Poudre River, or downstream of the Subject Reach on the South Platte River. CWCB's appropriated instream flow water rights upstream of the Subject Reach on the Cache la Poudre River will be unaffected by this plan.

Existing Natural Environment

The Subject Reach of the Cache la Poudre River supports both native and non-native fish species, as well as macroinvertebrate and riparian communities. Over the 55-mile reach, the composition of the fishery changes from a cold-water dominated fishery in the upper portions to a transitional cool- to -warm-water fishery surrounding the City of Fort Collins to a warm-water fishery in the lower portions. The Poudre River has undergone significant changes with a number of major agricultural, municipal, and industrial diversions representing a major anthropogenic change to the watershed. The Cache la Poudre is still a snowmelt-driven system, but water developments have significantly altered the natural flow regime resulting in severely depleted flow regime with multiple points of dry up. River flows fluctuate naturally on a diurnal and seasonal pattern, and are influenced by transbasin inflows, upstream reservoir operations, river diversions, and return flows from various uses. CPW

describes the natural environment with more detail in the CPW Flow Quantification Report (Exhibit PF3 attached to the [November 2020 board memo #23](#)).

The upper reaches of the Cache la Poudre River as it emerges from Poudre Canyon are typical cold water trout habitat supporting both rainbow and brown trout populations. As the river flows eastward through Fort Collins, the fishery transitions from one that is dominated by cold-water species to a more diverse cold water/cool water/warm water fishery. The transition zone provides important habitat for cold-water species seasonally coming down from the canyon, as well as plains species that move up from the low gradient plains zone. The Poudre River transition zone provides aquatic habitat conditions that support an array of species, including important native species with varying temperature and habitat preferences that can be unique to transition zones. This assemblage includes native minnow, sucker, and darter species, as well as the plains topminnow (Tier 1 Species of Greatest Conservation Need, CPW State Wildlife Action Plan (2015)). East of I-25, the fishery is mainly warm-water and is dominated by species in the darter, minnow, and sucker families.

Proposed Use of the Augmentation Water

The Board would use the augmentation water to preserve and improve the natural environment to a reasonable degree in the Cache la Poudre River between mouth of the Cache la Poudre canyon through the cities of Fort Collins and Greeley to the confluence with the South Platte River, a distance of approximately 55 miles. The CWCB would use the augmentation water to maintain stream flows up to the amounts specified in **Table 2** above as ultimately decreed in the proposed Poudre Flows Plan. The CWCB will request administration to protect the Seed Water deliveries from diversion, including exchange to the extent allowed under section 37-92-102(4.5)(b)(VII), by other water users from the point of delivery to and through the identified stream segments to the end of the Subject Reach or to the point of re-diversion of re-use, whichever is higher on the stream. Downstream of the identified stream segment, the water may be re-used, or may be relinquished back to waters of the State of Colorado available for diversion by others for any legal beneficial use. The Poudre Flows partnership has established a management committee comprised of water users with diverse interests to coordinate timing for water deliveries into the augmentation plan. The committee would meet regularly and closely coordinate with the Division of Water Resources, particularly the water commissioner.

Potential Benefits of this Proposal

The proposed Poudre Flows Plan will establish a framework to augment stream flows through an adjudicated plan for augmentation for the Subject Reach of the Cache la Poudre River. The added flows resulting from the Poudre Flows Plan will improve connectivity and reduce fragmentation of habitat in the Subject Reach that results from seasonal diversions and natural low flow conditions. The Poudre Flows Plan, including the Seed Water Rights, is a first step toward achieving the goal of maintaining healthy stream flows in the Cache la Poudre River without injury to other water rights. Staff anticipates bringing additional water acquisitions into the Poudre Flows Plan with Board approval and using a decreed process for adding augmentation water. Other potential benefits of this proposal include:

- Potential increase in the amount of time the Subject Reach carries sufficient flows to maintain a fishery, and in the quality of the instream habitats currently associated with these segments of the Cache la Poudre River.
- Secondary benefit of assisting diversions by adding a base flow and bringing up the river stage.
- Secondary benefits to recreation and fishing, water quality, and temperature improvements.
- Providing a community-based multi-party solution for a complex situation.

Potential Injury to Existing Rights

Section 37-92-102(4.5) provides direction for the type of water rights that can be used in a plan for augmentation to augment stream flows under this statute, and also imposes various types of terms and conditions to prevent injury to other water rights, including existing undecreed exchanges.

- Pursuant to section 37-92-102(4.5)(III), the augmentation water rights to be used in the Poudre Flows Plan must have already been judicially approved for a change of water rights to include any augmentation use, and the historical consumptive use must have already been quantified.
- Pursuant to section 37-92-102(4.5)(V), the use of augmentation water in the Poudre Flows Plan is subject to the terms and conditions of any applicable decree to which that water is subject.
- Pursuant to section 37-92-102(4.5)(b)(VI), additional terms and conditions must be imposed as necessary to prevent injury to other water rights, including "terms and conditions to prevent injury to other water rights that result from any change in the time, place, or amount of water available for diversion or exchange to the extent that other appropriators have relied upon the stream conditions that resulted from the historical use of the augmentation water rights ...before their use in the plan for augmentation of stream flows."
- Section 37-92-102(4.5)(b)(VII) requires that "an applicant must prove that the plan for augmentation to augment stream flows will not injure other water users' undecreed existing exchanges of water to the extent the undecreed existing exchanges of water have been administratively approved before the date of the filing of the application for approval of the plan for augmentation to augment stream flows."
- Section 37-92-102(4.5)(b)(IX) requires that "if operation of a plan for augmentation requires the use of, or making of physical modifications to, an existing diversion structure . . . the operator of the plan must have consent from the owner of the existing structure and bear all reasonable construction costs ... and all reasonable operational and maintenance costs ..."

Because stream flow protection under this proposal will be achieved with existing quantified water rights that are already decreed for augmentation, no injury should result from such use. Moreover, use of the water rights in the Poudre Flows Plan can only be made under the terms and conditions of the new Poudre Flows Plan augmentation decree and the terms and conditions of the underlying decrees. The plan is to introduce water that has not otherwise been present or available to other water users in the stream segments. The water court decree implementing the Poudre Flows Plan will contain terms and conditions to assure that no water rights on any of the segments will be injured as a result of the augmentation use in the Plan, as required by 37-92-102(4.5) C.R.S.

Administrability

The Poudre Flows partners have been, and will continue, coordinating with the State and Division Engineers regarding the administrability of this proposal. Based upon preliminary discussions, the Division Engineer for Water Division 1 has indicated that this proposal appears to be administrable provided that: (1) the water court decree will contain appropriate terms and conditions to prevent injury; (2) applicants ensure adequate measurement, recording and reporting as required to facilitate proper administration; (3) any necessary infrastructure modifications will be in place to allow the subject augmentation water to pass through the subject stream reach; and (4) communication protocols will be established so that the water commissioner is aware of plan operations and water user expectations on a real-time basis.

Maximum Utilization of the Waters of the State and Availability of the Delivered Water for Subsequent Use Downstream

The water rights to be used in the Poudre Flows Plan are existing water rights offered by water users in a voluntary market-based environment. The CWCB would beneficially use the augmentation water to augment stream flows in accordance with section 37-92-102(4.5), the augmentation plan decree, and individual Water Delivery Agreements. Depending on decree terms and individual agreements, downstream of the lower terminus, the water may be further used by either (1) re-use and successive use by the water right owner by re-diversion or to maintain downstream obligations to others, or (2) potential reversion back to waters of the State of Colorado available for diversion for any legal beneficial use. This proposal will promote maximum utilization of the waters of the state because the augmentation water will not only be used in the Poudre Flows Plan to augment stream flows in the Cache la Poudre River, but also may be used for downstream beneficial purposes.

Effect of Proposed Acquisition on Any Relevant Interstate Compact Issue

It is anticipated that this water will be used via storage, direct application, or by exchange either by the water rights owners or by water users downstream once the augmentation water has satisfied its intended beneficial use in the Subject Reach of the Cache la Poudre River. Existing quantified water rights already changed for augmentation use will be used for streamflow protection under this plan and those water rights are subject to the terms and conditions of their underlying decrees. Additionally, the subject water rights and uses are located in Water District 3 and the South Platte River Compact primarily affects District 64 on

the lower end of the South Platte River. Based upon the foregoing, it does not appear that this acquisition will raise any compact issues.

Costs to Complete the Transaction, and Other Associated Costs

There are various costs associated with completing this proposed augmentation plan, but no direct expenditures to purchase or lease any of the Seed Water Rights. The Seed Water Rights holders are donating the interests in water rights to be used in this plan. Financial contributions by Fort Collins, Greeley, Thornton and NCWCD, and fundraising efforts by CWT are significant and are expected to be sufficient to pay for CWT project support through the water court application process, and to pay for SWE's engineering work. The CWCB's indirect costs include Staff and Attorney General's Office time dedicated to participation as a co-applicant in the water court proceeding, and participation in a management committee that will coordinate planning, recording, reporting, and guidance on day-to-day operations. Later, as new augmentation water rights become available to add to this plan, some of the water rights owners may request funding from the Board to lease or purchase interests in the water rights to be used.

Exhibit

Exhibit 1: Location Map

R 70 W

R 69 W

R 68 W

Augmented Segments and Preserve/Improve Flow Rates (cfs)

Segment	Description	Winter (Nov 1 - Mar 31)		Summer (Apr 1 - Oct 31)	
		Preserve	Improve	Preserve	Improve
A	Canyon Gage to Larimer and Weld Canal Diversion	Up to 80	80 - 150	Up to 114	114 - 260
B	Larimer and Weld Canal Diversion to Spring Creek Confluence	Up to 80	80 - 150	Up to 114	114 - 260
C	Spring Creek Confluence to New Cache la Poudre Ditch Diversion	Up to 30	30 - 54	Up to 40	40 - 54
D	New Cache la Poudre Ditch Diversion to County Road 17 Crossing	Up to 10	10 - 40	Up to 10	10 - 40
E	County Road 17 Crossing to 59th Avenue Bridge	Up to 15	15 - 30	Up to 15	15 - 30
F	59th Avenue Bridge to South Platte River Confluence	Up to 15	15 - 30	Up to 15	15 - 30

Source: Colorado Parks and Wildlife. 2020. Flow Quantification Report for the Cache la Poudre River in Larimer and Weld Counties.

Note: Seed water reaches represent the reach between the uppermost point of introduction and lowermost point of withdrawal/use (not including potential leases of water further downstream).

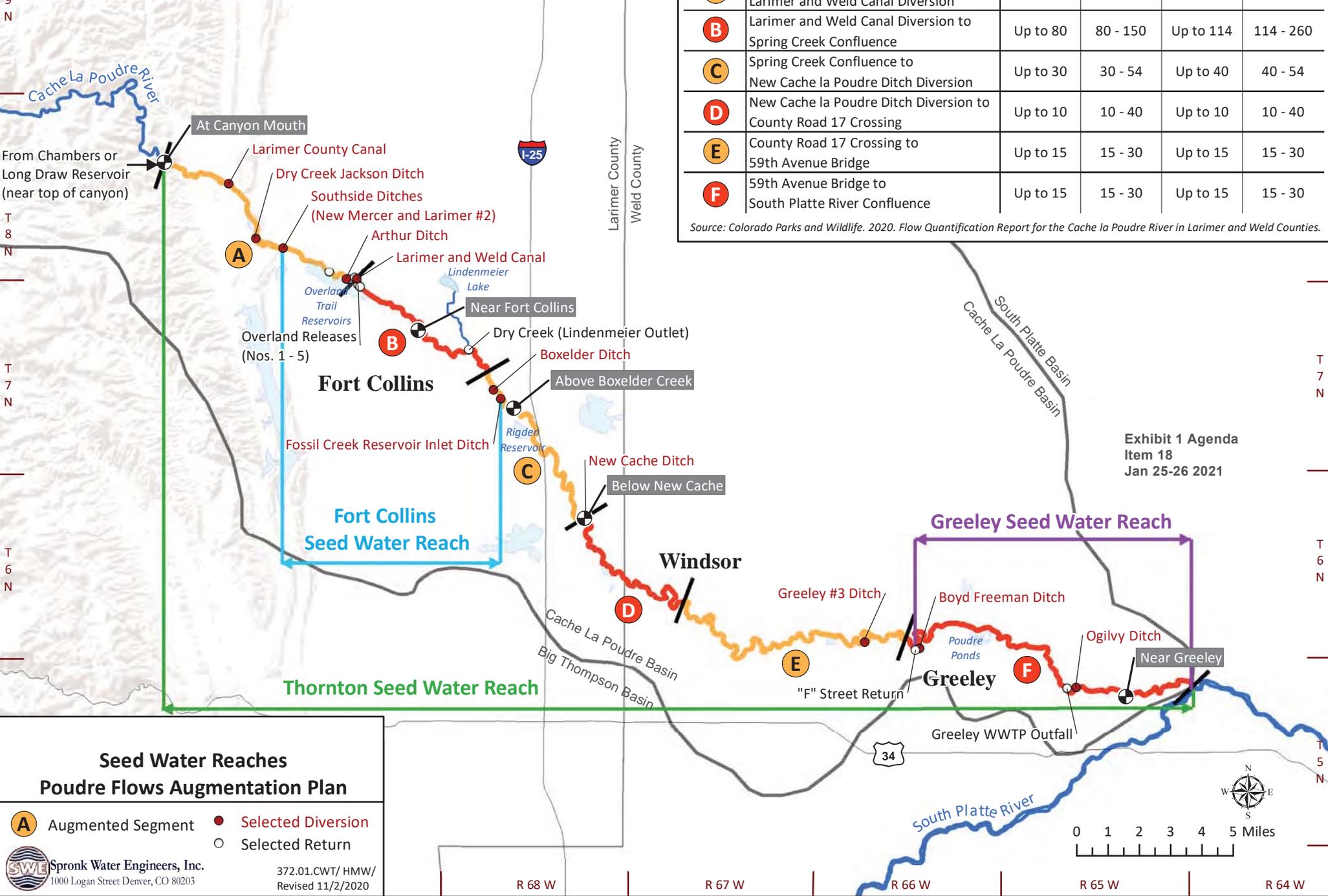


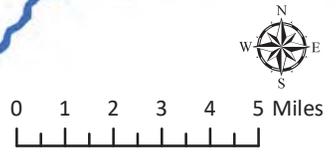
Exhibit 1 Agenda Item 18
Jan 25-26 2021

Seed Water Reaches Poudre Flows Augmentation Plan

- A** Augmented Segment
- Selected Diversion
- Selected Return

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372.01.CWT/ HMW/
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R 68 W

R 67 W

R 66 W

R 65 W

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