THE COLORADO WATER CONSERVATION BOARD

DENVER WATER'S REBUTTAL PREHEARING STATEMENT

CONCERNING THE PROPOSED ACQUISITION OF AN INTEREST IN THE SHOSHONE WATER RIGHTS FOR INSTREAM FLOW USE, COLORADO RIVER, WATER DIVISION NO. 5

Pursuant to Rule 6(m)(5)(e) of the Rules Concerning the Colorado Instream Flow and Natural Lake Level Program and the July 18, 2025 Order Regarding Procedures and Deadlines for Prehearing Submissions, the City and County of Denver, acting by and through its Board of Water Commissioners (Denver Water), submits its rebuttal prehearing statement.

I. Introduction

The CWCB is acting within a quasi-legislative capacity in considering the proposed acquisition of the Shoshone Water Rights. In this capacity, the Board has a large degree of discretion to reject, accept, or accept with terms and conditions, the Proponent's proposed acquisition consistent with the Board's policy making function to acquire water rights for purposes of protecting or improving the natural environment to a reasonable degree. C.R.S. § 37-92-102(3); ISF Rule 6n. However, in making its policy determinations to protect and improve the natural environment through water right acquisitions, the Board may not make an acquisition that will result in material injury to water rights, and may not surrender its exclusive authority to appropriate and use water for Instream Flow (ISF) purposes under the guise of "enforcement."

Denver Water supports the acquisition of the Shoshone Water Rights for ISF use provided the acquisition does not result in material injury to water rights, and the CWCB retains its exclusive authority and discretion to operate the Shoshone Water Rights for ISF use. In its present form, the proposed acquisition requires additional terms and conditions to prevent material injury to water rights, and to preserve the CWCB's exclusive authority with respect to appropriation and use of water for ISF purposes. Under ISF Rule 6e, which was adopted

pursuant to C.R.S. §37-92-102(3), the Board shall evaluate the proposed acquisition based on its specified criteria for evaluating proposed contracts or agreements for leases or loans of water. The Board must make a careful appraisal of the information presented by all parties to assess the relevant factors. If the acquisition would result in material injury to existing water rights or cede its exclusive authority to appropriate or operate water rights for ISF purposes, the Board cannot accept the acquisition without terms and conditions and additional modifications.

The CWCB has before it the Proponent's historical use analysis, and a detailed critique provided by Heather Thompson, **Denver Exhibit 5**, as well as Denver's proposed modifications to the Use Agreement in **Denver Exhibit 1**. Ms. Thompson identifies significant shortcomings with the Proponent's historical use analysis, including its failure to utilize the actual diversion records reported by Public Service Company, the failure to exclude non-native flows, and the use of an unrepresentative study period. Without corrections, acceptance of the Shoshone Water Rights will result in their unlawful enlargement that will be injurious to existing water rights, in West Slope reservoirs that are depleted to a greater extent as shown in **Denver Exhibits 15 and 16**, and lower flows in the 15-Mile Reach in average and wet years during spring runoff.

Denver Water has also identified provisions in **Denver Exhibit 1** which impermissibly cede the CWCB's exclusive discretion and authority with respect to operation and use of the Shoshone Water Rights for ISF purposes. While the Proponent and Staff argue that the Board may "share" its discretion with the Proponent for purposes of "enforcement," the terms in the Use Agreement do not pertain to enforcement of anything. Rather, paragraphs 7.c and 8 of the Use Agreement grant a co-equal say in how the Shoshone Water Rights are operated and used for purposes of protecting the environment. This is contrary to C.R.S. § 37-92-102(3), which vests the CWCB "with the exclusive authority . . . to appropriate . . . such waters of natural streams . . .

as the board determines may be required for minimum streamflows . . . to preserve the natural environment to a reasonable degree."

To address these issues, Denver Water requests that the CWCB exercise its legislative capacity to adopt provisions from the Shoshone Outage Protocol (ShOP) as terms and conditions to help preserve the status quo and reduce the extent of material injury. In proposing this, Denver Water is not asking that the CWCB adjudicate a contract dispute between Denver Water and the Proponent, but rather, to incorporate ShOP terms as the appropriate policy for balancing environmental needs with other beneficial uses of water. Alternatively, Denver Water encourages the CWCB to defer acceptance of the Proponent's proposal because of the significant and obvious shortcomings in the Proponent's historical use quantification, an issue that is foundational to whether the acquisition can be made without material injury.

As a potential third alternative, Denver Water encourages the Board to request the Proponent withdraw its proposal and first obtain a decree from the Water Court determining the amount of historical use of the Shoshone Water Rights pursuant to C.R.S. § 37-92-302(1)(a), which allows for a determination of an amount of a water right. With an advanced determination of historical use, the CWCB will have more accurate information about the amount of water rights being acquired. This would resolve a key dispute at issue in the hearing, and one that the Proponent itself indicated is better resolved in water court, thereby allowing the CWCB to conduct a more accurate evaluation and more effectively exercise its quasi-legislative function.

II. Rebuttal Argument

A. Historical use and material injury are key factors that must be considered in an evaluation of whether to accept water rights for ISF use.

The Board may not proceed to make an acquisition that would result in material injury to existing water rights. The Proponent asserts the Board is not required to predetermine historical

use of the Shoshone Water Rights to prevent injury before the Board can accept the Use Agreement. (Proponent Prehearing Stmt. p. 8.) This, however, ignores the plain language of the CWCB's rules, and the perquisites of administrative law, which prohibits an acquisition that is injurious to existing water rights.

1. The CWCB must follow its rules when evaluating whether to accept an acquisition.

Section 37-92-102(3)(c), C.R.S., requires that ISF rights appropriated to protect or improve the natural environment not result in material injury to water rights. This limiting principal, along with the limiting principles set forth in 37-92-102(3)(a)-(c), C.R.S, apply to acquisitions because they require a change of water right which reopens the appropriation. *See, e.g., High Plains A & M, LLC v. Se. Colorado Water Conservancy Dist*., 120 P.3d 710, 720 (Colo. 2005) (holding anti-speculation doctrine applies in a change case because a change reopens the appropriation).

Subsection 102(3) further provides "[t]he board shall adopt criteria for evaluating proposed contracts or agreements for leases or loans of water, water rights, or interests in water under this subsection (3). . . ." Pursuant to this directive, the CWCB has adopted criteria for evaluation of proposed contracts or agreements for leases or loans of water. Specifically, the plain language of ISF Rule 6e states that "[t]he Board ***shall evaluate*** the appropriateness of any acquisition of water, water rights, or interests in water to preserve or improve the natural environment." ISF Rule 6e also states that "***[s]uch evaluation shall include***, but ***need not be limited*** to consideration of the following factors: . . . (2) The natural flow regime; (3) Any potential material injury to existing decreed water rights; [and] (4) The historical consumptive use and historical return flows of the water right proposed for acquisition that may be available

for instream flow use. . . .” These factors are all pertinent to an assessment of whether and to what extent the acquisition can be made without material injury to water rights.

In acquiring an interest in a water right, the CWCB must follow its rules. Upon enacting regulations, an agency is bound by them. *Rags Over the Arkansas River, Inc. v. Colorado Parks & Wildlife Bd*., 2015 COA 11M, ¶ 25. This “comports with principles of due process; that is, the public is entitled to know the manner in which an agency will render a decision and the factors the agency will consider.” *Rags Over the Arkansas River*, Inc., 2015 COA 11M, ¶ 26 (citing *Lobato v. Indus. Claim Appeals Office*, 105 P.3d 220, 228 (Colo. 2005)). The “failure of an agency to comply with its own regulations constitutes arbitrary and capricious conduct.” *Id*. While “an agency's reasonable interpretation of its own regulations is ordinarily entitled to deference, . . . an interpretation that is inconsistent with the plain language of the regulation is not.” *Id*. at ¶ 27. Indeed, where a regulation plainly requires a different interpretation, “[t]o defer to the agency's position would be to permit the agency, under the guise of interpreting a regulation, to create de facto a new regulation.” *Id*.

In accordance with its rules, the CWCB must evaluate the factors referenced in ISF Rule 6e. The word “evaluate” means to “to determine the significance, worth, or condition of usually by careful appraisal and study.” Merriam-Webster. (n.d.). Evaluate. In Merriam-Webster.com dictionary. Retrieved August 21, 2025, from https://www.merriam-webster.com/dictionary/evaluate. This means that the CWCB must assess the information provided by the parties and make a determination if the environment can exist without material injury to existing water rights.

In making this assessment, the CWCB must consider the factors listed under ISF Rule 6e. Rule 6e uses the word “shall” which is mandatory in effect, meaning that the CWCB must

consider all pertinent factors. *Pearson v. Dist. Court*, 924 P.2d 512, 516 (Colo. 1996) ("The generally accepted and familiar meaning of 'shall' indicates that this term is mandatory."). Rule 6e also provides that the evaluation "shall include, but need not be limited to consideration of the following factors," indicating that the CWCB must consider the factors listed under 6e at a minimum, but that it may also consider other pertinent factors. Rule 6f lists additional factors to be considered with respect to leases and loans of water, in providing that the "Board ***shall*** consider evidence of water availability based upon the historical record(s) of diversion, the beneficial use of the subject water right, the location and timing of where return flows have historically returned to the stream, and the reason(s) the water is available for lease or loan."

The CWCB cannot avoid consideration of these factors, because to do so would be to ignore § 102(3)(c) and the plain unambiguous language of its rules.

2. An ISF acquisition cannot be made if it results in material injury to water rights.

The CWCB must conduct the required evaluation because it may not make an acquisition that results in material injury to existing water rights. To make an acquisition that results in material injury would be to take an action that is contrary to law. An acquisition that results in material injury to water rights or that does not follow the Board's ISF Rules, would not be in accord with the law, and would therefore be impermissible.

Under C.R.S. § 37-92-305(3)(a), "[a] change of water right . . . shall be approved if such change . . . will not injuriously affect the owner of or persons entitled to use water under a vested water right or a decreed conditional water right." The "no injury standard . . . requires that a change of water right will be approved only if such change will not injuriously affect the owners of vested or conditional water rights." *Burlington Ditch Reservoir & Land Co. v. Metro Wastewater Reclamation Dist.*, 256 P.3d 645, 671 (Colo. 2011). *See also* § 37–92–305(3)(a). To

ensure this limitation is met, "the amount of water that can be changed to a new use 'is subject to a calculation of historical beneficial consumptive use lawfully made under the decreed prior appropriation.'" *Boulder Cnty. v. Boulder & Weld Cnty. Ditch Co.*, 2016 CO 17, ¶ 33. *See also* C.R.S. § 24–4–106(7) (prohibiting an agency from taking action not in accord with the law).

Thus, for these reasons, the CWCB can only accept an acquisition that does not cause material injury, and may do so only by complying with the ISF Rules.

B. The proposed Use Agreement is contrary to law to the extent it gives the Proponent a co-equal decision in the operation of the Shoshone Water Rights for ISF purposes.

The proposed Use Agreement improperly provides that the Shoshone Water Rights must be exercised at their maximum extent at all times except "[d]uring any period wherein the CWCB and the River District jointly agree in writing to reduce the flow rate requested for administration of the Shoshone Water Rights for instream flow purposes." (¶7.c). Additionally, the Use Agreement requires that "the CWCB will maximize the use of the Shoshone Water Rights for instream flow purposes to the extent the rights are not being used for hydropower generation purposes at the Shoshone Power Plant." (¶8)

Staff argues it has the discretion to work with other entities to administer ISF water rights and has done so in the past. It also provides an example, such as in a case of a water storage right, where the owner retains control and discretion over when to release and use the water right for ISF purposes, so long as the stream needs the water to meet the ISF rates. (Staff Prehearing Stmt. p. 11; *See also* Proponent Prehearing Stmt. p. 16.) The acquisition of the Shoshone Water Rights, however, is different in that it is not a reservoir release but rather, a large senior calling water right on the mainstem of the Colorado River that can have significant impacts on the

operation of the river. Moreover, the Use Agreement strips the CWCB of all discretion in how it may operate the ISF use by requiring the Proponent's approval.

Staff also assert that ISF Rule 10 specifically allows the CWCB to enter into agreements that limit the Board's discretion in the protection of an ISF right and to delegate limited authority to act on the Board's behalf. To the contrary, ISF Rule 10, which refers to enforcement agreements – a vague and undefined term in the ISF Rules -- states "[t]he Board may attach conditions to an . . . acquisition, and may enter into any enforcement agreements that it determines will preserve or improve the natural environment to a reasonable degree. The Board may enter into enforcement agreements that limit the Board's discretion in the ***protection, approval of inundation, modification or disposal of ISF right***, and/or may delegate limited authority to act on the Board's behalf." (Emphasis added). None of these terms address discretion to *operate* and *use* water for ISF purposes, which is what paragraphs 7.c and 8 of the Use Agreement do. For these reasons, paragraphs 7.c and 8 of the Use Agreement are contrary to C.R.S. § 37-92-102(3) the Board's ISF Rules.

C. Denver Water is requesting that the CWCB acquire the Shoshone Water Rights subject to the ShOP terms pursuant to its legislative capacity.

Denver Water is not arguing at this time that the Board is required to place CRCA ShOP limitations on the acquisition, but rather, that the CWCB should exercise its authority in its legislative capacity to acquire the Shoshone Water Rights subject to ShOP's terms. As a policy matter, this would strike a balanced approach to managing the flows created by the Senior Shoshone Water Right's call. It is also consistent with the doctrine of maximum beneficial use, and avoids an uncertain and lengthy change of water rights process.

Note that ShOP does not prevent injury because it does not quantify the historical use of the Shoshone Water Rights. Instead, it provides a reasonable balanced compromise that will

protect the flows of the Colorado River most of the time, but also provide critical relief when drought conditions have depleted Denver Water's replacement reservoir storage. This will help reduce the occurrence of significant drawdowns of Williams Fork, Wolford Mountain Reservoir and Dillon Reservoir, all of which are essential to creating a reliable water supply for Denver Water customers. A reduced occurrence of significant drawdowns in the reservoirs also helps better protect flat water recreation opportunities in Summit and Grand Counties, and the economic benefits that are derived from those reservoirs. ShOP also helps to preserve the storage contents of Green Mountain Reservoir, a critical source of supply for the West Slope and a key driver of Denver Water's West Slope operations.

By taking this approach now, rather than wait until Water Court litigation, the CWCB can resolve the concerns of Denver Water and other objectors. This will allow for a streamlined water court process with reduced litigation risk, and achieve a successful outcome for Colorado on both sides of the Continental Divide.

D. As an alternate approach, the CWCB should request the Proponent first seek a determination of the historical amount of the Shoshone Water Rights pursuant to C.R.S. § 37-92-302(1)(a).

Under 302(1)(a), "[a]ny person who desires a determination of a water right . . . and the amount . . . thereof, . . . shall file with the water clerk a verified application setting forth facts supporting the ruling sought, a copy of which shall be sent by the water clerk to the state engineer and the division engineer." The Proponent can file such an application to determine the amount of the Shoshone Water Rights based on its historical use, and upon such an adjudication, return to the CWCB to move forward with the proposed acquisition.

This process, which is somewhat similar to the Stapleton Brothers Ditch acquisition where CWCB accepted recently changed and quantified ditch shares, will allow the CWCB to

make a more fully informed and accurate determination regarding the acquisition, including what the historical use of the Shoshone Water Rights are, a key finding that the CWCB is required to make. This process will also help streamline disputes between the parties regarding the historical use of the Shoshone Water Rights, allowing the CWCB to conserve its resources that might otherwise be expended on litigation. Finally, this approach will allow the Proponent and Denver Water to focus on efforts to resolve historical use through litigation and settlement discussions in water court, and save the CWCB from being caught up in the process.

Although this approach would still require the CWCB return to water court for the purpose of adding ISF as a new use to the Shoshone Water Rights, the scope of the CWCB's application would be significantly reduced and all parties will have greater clarity and certainty.

III. Conclusion and Relief Requested:

Denver Water renews its request that the CWCB accept the Shoshone Water Rights for ISF use, but subject to the incorporation of the terms of ShOP to maintain the status quo. Alternatively, the CWCB should defer acceptance until the Proponent can return with a corrected historical use analysis or defer and request the Proponent to first seek a determination of the amount of the water right in water court. If the Board declines to take either of these approaches, the Board must conduct an evaluation as required by the ISF rules to ensure that it does not accept an acquisition that would cause material injury to existing water rights.

Respectfully submitted this 29th day of August, 2025

JESSICA R. BRODY, General Counsel

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CERTIFICATE OF SERVICE

I hereby certify that on this 29th day of August 2025, a true and correct copy of **Denver Water's Rebuttal Prehearing Statement** was electronically submitted to the Colorado Water Conservation Board via email to Jackie.Calicchio@coag.gov and the following additional recipients set forth in the Table below.

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THE COLORADO WATER CONSERVATION BOARD

WRITTEN TESTIMONY OF JEFFREY BANDY, P.E.

CONCERNING THE PROPOSED ACQUISITION OF AN INTEREST IN THE SHOSHONE WATER RIGHTS FOR INSTREAM FLOW USE, COLORADO RIVER, WATER DIVISION NO. 5

As provided for in the July 18, 2025 order of the hearing officer, I have prepared my pre-filed written testimony, as set forth in this document, for the Shoshone Water Rights Acquisition Hearing currently scheduled for September 16-18, 2025 before the Colorado Water Conservation Board (CWCB).

I. Qualifications

I am the Planning Manager of Water Rights, Supply, and Analysis for Denver Water. My experience and qualifications are generally laid out in my resume, **Denver Exhibit 10**. I have over 25 years of water resource engineering and management experience, 22 of which I've been a registered Professional Engineer in the State of Colorado. I've worked for Denver Water for almost 14 years in the Planning/Water Resource Strategy Division. I have a BS and MS in Civil Engineering with an emphasis in Water Resources. Prior to joining Denver Water I was employed by AECOM Technical Services, Inc. for 10 years as a water resource engineer performing work in water rights, water resource modeling, and planning studies. Prior to my work in consulting, I worked as a research assistant at the Catholic University of Leuven, Belgium developing hydrologic models.

My experience at Denver Water has informed my understanding of Denver Water's decreed water rights, water supply operations, and water collection systems, including the location and operation of various facilities used by Denver Water to divert water and operate the Denver Water collection and municipal water system. I have knowledge and experience

regarding administration practices commonly used and implemented by the Division Engineer in Divisions 1 and 5.

II. Introduction

Denver Water supports the effort to preserve the flow regime created by the Senior Shoshone Call (Shoshone Call Flows). This commitment is described in Article VI of the Colorado River Cooperative Agreement (CRCA). Denver Water recognizes the importance of these operations to the administration of the Colorado River. As part of this commitment, Denver Water agreed to conditions with the River District and several other parties regarding maintenance of the Shoshone Call Flows when the plant is not operating. Since 2013 Denver Water has operated its West Slope collection system consistent with the CRCA and has contributed to the maintenance of Shoshone Call Flows. If the terms of the CRCA Shoshone Outage Protocol (ShOP) are not maintained through the change to Instream Flow (ISF) use, it has the potential to affect Denver Water's water rights and operations and increases risk to Denver Water's ability to serve 1.5 million people in the Denver Metro area.

III. Denver Water's West Slope Operations

Denver Water owns water rights associated with several West Slope facilities. Denver Water's collection system is shown on **Denver Exhibit 11**. Its West Slope portion comprises the Blue River Diversion Project consisting of Dillon Reservoir and the Roberts Tunnel, the Moffat Tunnel Collection System including Upper Williams Fork Collection System, and Williams Fork and Wolford Mountain Reservoirs. Denver Water's West Slope collection system operates upstream of the Shoshone power plant and the Dotsero gage as illustrated on **Denver Exhibit 12**. Denver Water's West Slope water rights used for municipal water supply that are affected by the Shoshone water rights are listed in **Denver Exhibit 9**.

Denver Water's water rights listed on **Denver Exhibit 9** associated with its West Slope collection system are junior to the Senior Shoshone Water Right. Denver Water's West Slope collection system water rights, with the exception of the Moffat Tunnel collection system Rights adjudicated in C.A. 657, are also junior in priority to the Junior Shoshone Water Right. When Denver Water's water rights are out-of-priority due to a call by the Shoshone Water Rights, Denver Water may only continue to divert by exchanging a corresponding replacement supply from Williams Fork Reservoir, or at times via Dillon Reservoir, or in an emergency from Wolford Mountain Reservoir.

Green Mountain Reservoir (GMR) is located downstream of Denver Water's Blue River Diversion Project. Denver Water's West Slope operations are greatly influenced by GMR operations and its ability to fill. Pursuant to the Blue River Decree and the GMR Administrative Protocol, Denver Water can store out of priority against GMR. If GMR does not achieve a fill in a given water year from flows below Dillon Reservoir, but tributary to GMR, Denver Water substitutes, or replaces, to GMR the amount stored out of priority that GMR is short. This operation is referred to as a substitution operation. Through the substitution deliveries, Denver Water releases replacement water from Dillon Reservoir to complete the fill of GMR or releases water from Wolford Mountain and Williams Fork Reservoirs to meet GMR obligations.

There are many variations of these operations that are possible depending on hydrologic conditions, the seniority of the Shoshone Call, GMR operations, and substitution operations pursuant to the Blue River Decree and GMR Administrative Protocol. However, consistent with all of these conditions is that when Shoshone is calling, Denver Water is required to cease diverting or replace to the call to continue diverting.

IV. 2013 Colorado River Cooperative Agreement and ShOP

Denver Water's prehearing statement and Article VI.B of the CRCA (**Denver Exhibit 2**) describe the ShOP terms. These terms apply whenever the plant is shut down and unable to place a call and flow at the Dotsero gage (Colorado River Near Dotsero, CO - 09070500) is less than 1,250 cfs during the irrigation season and less than 900 cfs during the winter season; with exceptions during 17 days in the winter and under water shortage conditions. It is important to note that these terms apply to act as if the Senior Shoshone Water Right were calling, and they are not a requirement to generate additional flow if the natural flow itself is insufficient to achieve the target flow. When Denver Water is operating under the terms of ShOP (apart from 17 days in winter, and water shortage conditions if they were to occur) its systems are either not diverting or diverting and releasing replacement water from its reservoirs.

The CRCA includes provisions for when a Shoshone outage occurs during water shortages. When a water shortage is determined, Denver Water is not obligated to operate as if the Senior Shoshone water right is calling. These provisions reduce the risk to Denver Water's ability to supply 1.5 million customers. Details of the water shortage provisions are presented in Article VI of the CRCA and Denver Water's pre-hearing statement. A water shortage in the irrigation season is determined by the combination of streamflow forecasts prepared by the Natural Resources Conservation Service (NRCS) (or the NRCS and Colorado Basin River Forecast Center) and water storage predictions prepared by Denver Water starting in March of each year. A water shortage exists when the most probable April-July streamflow forecast at Kremmling (or Dotsero if Kremmling is unavailable) is less than or equal to 85% of average and the predicted storage in Denver Water's 10 largest reservoirs on July 1 is less than or equal to 80% full. If these conditions are met, Denver Water is not obligated to operate as if the Senior Shoshone Call were in effect until the next projection, or through the end of the irrigation season

if based on the June projection. In the winter season, water shortages are determined based on Denver Water's system storage on November 1. If November 1 storage is less than 79% of capacity, Denver Water's contribution to the 900 cfs target flow is reduced. The winter shortage provisions step Denver Water's contribution to zero for the winter season if November 1 system storage is less than or equal to 49% of capacity.

V. 2016 Multi-Party ShOP Agreement

Subsequent and pursuant to the CRCA, Denver Water, the River District, and eight additional parties entered into the 2016 ShOP Agreement (**Denver Exhibit 3**). The various signatories agreed to different obligations in operating their systems as related to a Shoshone outage but the agreement defines key terms as related to such. The 2016 ShOP agreement protects the flows at the Dotsero gage associated with the Senior Shoshone Right.

As related to Denver Water and River District operations, these are the same as the 2013 CRCA ShOP with 1,250 cfs in the irrigation season and 900 cfs in the winter season. While the 2016 ShOP has a 40-year term, the CRCA ShOP terms that apply to both Denver Water and the River District are permanent.

VI. Historical ShOP Operations by Denver Water per CRCA and 2016 ShOP

Since the effective date of the CRCA Denver Water has contributed over 66,000 acre-feet under ShOP administration due to outages of the Shoshone Power Plant to the benefit of the river, environment, and users downstream of Shoshone. **Denver Exhibit 13** presents the monthly contributions made by Denver Water to ShOP since the signing of the CRCA in 2013 and through the 2024 water year. ShOP conditions were not present between 2013 and 2019 to warrant ShOP administration. This summary was developed comparing periods of non-diversion at Shoshone and Denver Water's operations accounting. ShOP operations occurred in 21 months

over 5 years (2020-2024). The largest annual contributions were in 2023 (over 27,000 acre-feet) and 2024 (over 28,000 acre-feet) when the plant was offline for the longest durations and unable to place a call. The Division 5 Engineer administered the ShOP agreement among several users on the river over these periods.

VII. Potential Impacts to Denver Water of ISF as Offered

Denver Water has evaluated the terms of the ISF use proposed by the River District (RD ISF) compared to the ShOP terms as an ISF (ShOP ISF) with its planning model. These analyses assume the plant is offline. The RD ISF was modeled with the Senior and Junior Shoshone Water Rights with the ability to call for a combined 1,408 cfs. The ShOP ISF reflects the terms of ShOP in the CRCA, including a lower call, 17 days of no call in the winter, and water shortage provisions. The terms of each of the ISF uses were compared in two different scenarios. The first scenario approximates today's conditions (Denver Water's current system and recent demands; "Current Conditions") against historical hydrology from 1947 to 2020. This scenario implements an adjustment to the historical hydrology of the earlier model years to reflect recent climatic warming. The second scenario applies a 5-degree Fahrenheit climate warming to historical hydrology, increased Denver Water demands, and operation of the Gross Reservoir Expansion currently under construction ("Future Conditions").

One of the initial impacts to Denver Water's West Slope supplies of the higher RD ISF is on substitution amounts owed to GMR. Generally, the higher Shoshone demand in the RD ISF results in higher substitution bills for Denver Water in both scenarios as shown in **Denver Exhibit 14**. Under the RD ISF, GMR is called out more and for longer periods of time and usually achieves less of its fill in a given substitution year, and therefore Denver Water owes more water to GMR. There are instances, typically in water shortage years, when the substitution

bill is greater under the ShOP ISF. This can occur because with the period of no call in water shortage years, Dillon Reservoir is able to store more water ahead of GMR and if GMR is far from filling, Denver Water owes all the out of priority water back to GMR. Comparing the Current Conditions and Future Conditions model results, substitution requirements total 12 percent higher under the RD ISF in Current Conditions, and 23 percent higher in Future Conditions, and occur with a greater frequency in Future Conditions.

In addition to generally larger and more frequent GMR substitution bills, the potential impacts to Denver Water's water rights are demonstrated on the storage graphs for Williams Fork, Wolford Mountain, and Dillon Reservoirs for two dry periods in the planning scenarios: the 1950s and 2000s in **Denver Exhibits 15** and **16**. The impact to Denver Water's storage of the RD ISF as compared to the ShOP ISF is the most pronounced for Williams Fork Reservoir. The lower reservoir contents are an effect of more water being released via substitution or exchange to the higher RD ISF. Lower storage at Williams Fork Reservoir can lead to lower storage at Dillon Reservoir if Williams Fork empties and is no longer available for substitution and exchange. The lower Dillon contents can then continue into later years as Denver Water's system recovers. This effect is highlighted in the Future Conditions scenario (**Denver Exhibit 16**) in 1955, 2002, 2004, and 2006. Drawdown of Wolford Mountain Reservoir is generally greater under the RD ISF in both scenarios as well. However, the impacts to Wolford Mountain Reservoir are less apparent compared to Williams Fork and Dillon because Denver Water's use of Wolford Mountain Reservoir is limited for substitution[1] to GMR and therefore releases are

[1] Wolford Mountain Reservoir is decreed for substitution and exchange. Exchange to Williams Fork Reservoir is only allowed during emergencies and is therefore not a modeled operation.

only made in substitution years. However, contents in Denver Water's pool are generally drawn down earlier and recover later with the higher RD ISF.

Regarding the water shortage provisions and when they might be triggered; in most years, Denver Water will continue to honor a 1,250 cfs call in the irrigation season and a 900 cfs call in the winter as shown in the modeling of these two scenarios. Under Current Conditions, a water shortage is modeled in less than 3% of the years in the 74-year model period. Under a warmer climate and an increase in Denver Water demands, these conditions are met 14% of the years, or less than one in seven years. While a model is not an exact prediction of actual operations, it does provide a reasonable comparison of how ShOP would operate in the near term and potential future conditions.

The potential for impact of the proposed RD ISF to Denver Water can be summarized that with a higher ISF demand (RD ISF) and ability to call as compared to a ShOP ISF, it will require more replacement water and greater reservoir releases and thus result in lower storage. This effect increases the risk to Denver Water's supply. The provisions of ShOP mitigate this risk to some degree and therefore should be included in the proposed Use Agreement and resultant change of use decree for the Shoshone water rights.

_/s/ Jeffrey J. Bandy_____
Jeffrey J. Bandy, P.E.

CERTIFICATE OF SERVICE

I hereby certify that on this 29th day of August 2025, a true and correct copy of the **WRITTEN TESTIMONY OF JEFFREY BANDY, P.E.** was electronically submitted to the Colorado Water Conservation Board via email to Jackie.Calicchio@coag.gov and the following additional recipients set forth in the Table below.

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THE COLORADO WATER CONSERVATION BOARD

WRITTEN TESTIMONY OF HEATHER THOMPSON, P.E.

CONCERNING THE PROPOSED ACQUISITION OF AN INTEREST IN THE SHOSHONE WATER RIGHTS FOR INSTREAM FLOW USE, COLORADO RIVER WATER DIVISION NO. 5

As provided for in the July 18, 2025 order of the hearing officer, I have prepared my pre-filed written testimony, as set forth in this document, for the Shoshone Water Rights Acquisition Hearing currently scheduled for September 16-18, 2025 before the Colorado Water Conservation Board ("CWCB").

I. Qualifications

Heather Thompson has degrees in Civil Engineering and Water Resource Engineering from Cornell University and the University of Colorado, respectively. *See* **Denver Ex. 7**. Heather is a senior water resources engineer with 30 years of experience specializing in projects that involve the development and use of surface water allocation models, water rights investigations, and water supply planning. She has used a variety of models including the Colorado Decision Support System ("CDSS") models to simulate river basins and raw water systems and analyze firm yield, diversions, reservoir operations, and water rights administration. She has also been involved in numerous water rights investigations and provided expert witness testimony in litigation.

II. Introduction

In support of the offer of an interest in the Shoshone Water Rights to the CWCB for instream flow use, BBA Water Consultants, Inc. ("BBA"), prepared a preliminary assessment of the historical use of the Shoshone Water Rights on behalf of the Colorado River Water

Conservation District ("River District"). BBA's central claim is that an average annual volumetric limit of 844,644 acre-feet, measured over a 29-year rolling average, represents the average annual historical use or yield of the Shoshone Water Rights and is an appropriate volumetric limit for the changed use of those rights. *See* **CRD-12**. BBA did not suggest any long-term average or maximum monthly limits, which are necessary to preserve the monthly distribution of diversions that historically occurred. Ecological Resource Consultants LLC ("ERC") disagrees with BBA's methodology because it overestimates the historical use of the Shoshone Water Rights by relying on flawed assumptions. *See* **Denver Ex. 5**. The primary flaws in BBA's analysis include (1) an inappropriate study period that excludes the last two decades, (2) reliance on the Dotsero Gage as a proxy for Shoshone diversions instead of official diversion records maintained by the State Engineer, (3) inconsistent methods to determine the administrative flow, which is the amount available for diversion under the Shoshone Water Rights and is used by the Division 5 Engineer's Office ("DEO") in its administration of those rights, and (4) exclusion of entire months in which Shoshone diversions were zero or unrecorded. Members of the Front Range Water Council and ERC met with the River District and BBA on January 24, 2025 and March 10, 2025 to discuss their concerns with BBA's historical use analysis and the need for revisions. However, BBA has not made any modifications to its historical use assessment. ERC can demonstrate that the outcome of the historical use analysis is dramatically different when alternative, more defensible assumptions are used.

III. Overview of BBA's Methodology

BBA selected a historical study period spanning from 1975 to 2003, asserting this timeframe represents a consistent period of Shoshone Power Plant operations, includes a sufficient number of wet, dry, and average years, and is consistent with Colorado water law (e.g., CRS § 37-

92-305(3)(d)). For this period, BBA relied on data from the USGS stream gage located near Dotsero, Colorado ("Dotsero Gage") capped at 1,408 cubic feet per second ("cfs"), which is the maximum rate of water that can be diverted under the Shoshone Water Rights, to approximate Shoshone diversions. For 1998 to 2003, BBA determined the administrative flow at the Dotsero Gage by excluding reservoir water released for users downstream of Shoshone, which is consistent with DEO's current practice. However, for years prior to 1998, BBA assumed the administrative flow was equal to the Dotsero Gage flow, which gage flow includes, among other things, reservoir releases that are not legally available for diversion under the Shoshone Water Rights in priority. Finally, BBA excluded months in which Shoshone did not divert or data was missing for the entire month. Using these assumptions, BBA estimated the average annual use or yield of the Shoshone Water Rights to be 844,644 acre-feet for the 1975-2003 period. These assumptions generated an inflated estimate of historical use that BBA claims is an appropriate volumetric limit for the changed use of the Shoshone Water Rights when applied on a rolling 29-year average basis.

IV. Critique of the Study Period

ERC identified the study period as a fundamental weakness in BBA's analysis. By including years prior to 1998, BBA incorporated an era in which the DEO and the U.S. Bureau of Reclamation ("USBR") administered the Shoshone Water Rights differently than in recent decades. *See* **Northern et al. – 5**. Before the mid-1980s, the DEO did not administer calls for the Shoshone Water Rights. Instead, releases were made from Green Mountain Reservoir in accordance with Senate Document 80 to maintain 1,250 cfs at the Dotsero Gage and prevent a call from the senior Shoshone Water Right. These practices are not representative of current administration over the past 25 plus years and administration for the foreseeable future.

From the mid-1980s through the late 1990s, administration of the Shoshone Water Rights was in transition, culminating in the Orchard Mesa Check Case and the associated stipulation that established the framework for modern administration of the Shoshone Water Rights. A defensible study period should begin no earlier than 1998, after administration stabilized following entry of a decree in the Orchard Mesa Check Case and Upper Colorado River Endangered Fish Recovery Program operations became well established.

At the other end of the spectrum, BBA's decision to end the study period in 2003 excludes the last two decades of use and administration and drier hydrologic conditions, which are more representative of anticipated future conditions. The period after 2003 includes the Millennium Drought and the effects of drier conditions on Shoshone diversions. Years after 2003 also contain more outages at Shoshone including maintenance, planned and unplanned outages, and agreements for relaxation of the call (*See* **Denver Ex. 4**), which are representative of current operations. Years after 2003 must be considered to get an accurate picture of the historical use of the Shoshone Water Rights. Although the study period need not include every year of the entire history of the subject water rights, it must be representative of the historical use. In short, BBA's study period is non-representative and serves to maximize the volumetric limit, rather than provide an accurate representation of the historical use of the Shoshone Water Rights.

V. Diversion Records and Measurement Issues

A second critical issue is BBA's reliance on the measured streamflow at the Dotsero Gage as a proxy for Shoshone diversions. The Dotsero Gage measures streamflow approximately eight miles upstream of Shoshone; it is not a measurement of actual diversions and use of the Shoshone Water Rights. Since there is no measurement structure at the Shoshone Diversion Dam, Public Service Company of Colorado ("PSCo") historically estimated the amount diverted and used at

Shoshone based on power production records, which is a more accurate and reliable source of data for determining historical use. The records submitted by PSCo to the DEO are the official diversion records maintained by the State of Colorado in the CDSS database. The CDSS Shoshone diversion records reported to the DEO are the proper basis for the historical use analysis. By contrast, BBA treated flows recorded at the Dotsero Gage, capped at the maximum of 1,408 cfs, as if they were fully diverted and used, which inflates Shoshone diversions because it does not adequately consider outages, reduced diversions, and other factors. *See* **Denver Ex. 8.a Figure 1** which illustrates the magnitude and frequency that flows at the Dotsero Gage capped at 1,408 cfs exceeded Shoshone diversions as reflected in the CDSS database.

ERC further questions BBA's claim that water diverted at Shoshone and discharged through adits, for which BBA did not provide any records of rates or volumes, should be included in the diversions used to estimate historical use. These discharges, intended to manage sediment, were not measured, did not pass through the Shoshone Power Plant turbines, and did not generate power. Discharges through the adits are analogous to deliveries through a ditch sand-out gate or wasteway and are a form of unmeasured conveyance water or wastewater that should not be included in the historical use analysis. ERC maintains that discharges through the adits should not be considered historical beneficial use.

VI. Administrative Flow Prior to 1998

BBA's treatment of the administrative flow at the Dotsero gage, which the DEO uses in its administration of the Shoshone Water Rights, is inconsistent before and after 1998. The administrative flow reflects the amount that was available for diversion under the Shoshone Water Rights in priority; thus, its calculation excludes upstream reservoir releases that are shepherded to users downstream of Shoshone. For six years from 1998 to 2003, BBA subtracted upstream

reservoir releases from the Dotsero Gage when estimating the administrative flow. Yet, for years prior to 1998, BBA assumed the administrative flow was equal to the Dotsero Gage flow, which includes certain reservoir releases destined to downstream users that cannot be called for under the Shoshone Water Rights.

The USBR Colorado River Accounting ledgers, which were used in the administration of the Shoshone Water Rights prior to 1998, show undepleted flow values at the Dotsero Gage. The undepleted flow at the Dotsero gage is similar to the administrative flow since it excludes upstream reservoir releases that cannot be "called for" under current administration of the Shoshone Water Rights. Undepleted flows were often significantly lower than gaged flows at Dotsero, sometimes by several hundred cfs. Thus, BBA's reliance on the Dotsero Gage flow as opposed to undepleted flow prior to 1998 overstates the amount of water available to the Shoshone Water Rights. If pre-1998 data are to be considered at all, the historical use analysis should rely on the undepleted flow at the Dotsero Gage reported in the USBR ledgers. Otherwise, the historical use is inflated.

VII. Treatment of Months of Full Outage

BBA's choice to exclude entire months in which Shoshone diversions were zero or unrecorded artificially raises monthly average diversions, which BBA used to develop its long-term average volumetric limit. While an entire month of outage occurred only once during BBA's study period, it has occurred much more frequently (39 months) since 2003. Outages are part of real-world operations, whether due to planned or unplanned maintenance, repairs, or agreements for relaxation of the call. If CDSS records indicate that no water was diverted for an entire month, it may be appropriate to include a zero for that month to the extent that outage was not reasonably justified so as not to overstate monthly averages. Use of the Shoshone Water Rights for instream flow use does not require use or operation of any of the Power Plant facilities. Therefore, to avoid

an enlargement of the Shoshone Water Rights, it is critical to reflect outages in the historical use analysis, since future ISF use of those rights, unlike diversions for power production, will not be limited by operations and maintenance of the Shoshone facilities. For example, in change of use proceedings for irrigation water rights, planned and unplanned outages during the irrigation season have in the past been counted as zeroes in historical use analyses.

VIII. ERC's Alternative Estimate of Historical Use

To illustrate the extent to which BBA's analysis inflates the historical use of the Shoshone Water Rights, ERC recalculated historical use under a more defensible set of assumptions. First, ERC revised and extended the study period to 1998–2022. Second, ERC relied on official CDSS Shoshone diversion records reported to the State by PSCo. Finally, ERC included months of full outage in its calculations of average monthly diversions. ERC's revised estimate of the average annual use of the Shoshone Water rights is 538,204 acre-feet, which is less than two/thirds of BBA's estimate of 844,644 acre-feet per year. Month-to-month differences are equally substantial, ranging from a decrease of 260 cfs on average in January to 691 cfs on average in June. *See* **Denver Ex. 8.a Table 1 and Figure 2**. ERC also modeled BBA's volumetric limit using the new version of the CDSS Model released by CWCB, and results show there isn't sufficient water physically and legally available for Shoshone to divert 844,644 ac-ft/yr on average. *See* **Denver Ex. 6**. This further supports ERC's conclusion that BBA's estimate of the historical use of the Shoshone Water Rights is inflated and would allow for an expansion of the calls and use of those water rights.

IX. Implications of an Inflated Estimate of Historical Use

The implications of adopting BBA's inflated volumetric limit are significant. An inflated quantification of the historical use of the Shoshone Water Rights would enlarge the use and call frequency of the Shoshone Water Rights moving forward. ERC analyzed the impacts of BBA's

proposed volumetric limit using the new version of the CDSS Model released by CWCB. *See* **Denver Ex. 6**. If calls under the Shoshone Water Rights increase, junior water rights without replacement sources, such as the Windy Gap Project, the Homestake Project, and the Continental-Hoosier System water rights would face more frequent curtailment. For example, CDSS Model results showed there would be a decrease in Homestake Tunnel and Con-Hoosier Tunnel diversions when Homestake Reservoir and Upper Blue Lake are drained and the water rights associated with those systems are called out by the Shoshone Water Rights. *See* **Denver Ex. 6**. Junior water rights with replacement sources, including the C-BT Project and Denver Water's Blue River and Moffat Tunnel Systems, may continue to divert; however, their replacement reservoirs (Green Mountain and Williams Fork Reservoirs) would experience deeper drawdowns since the amount and frequency of replacement releases would increase. *See* **Denver Ex. 8.b Figure 4**. Deeper drawdowns would threaten the reliability of those reservoirs including the availability of Green Mountain Reservoir surplus HUP for the 15-Mile Reach to support recovery of threatened and endangered fish species. In addition, the magnitude of Denver Water's and Colorado Springs Utilities' water replacement obligation (substitution bill) owed to Green Mountain Reservoir would increase. This will increase the drawdown at Williams Fork and Wolford Mountain Reservoirs since additional water will need to be released for substitution payments than has occurred historically. Additionally, the 15-Mile Reach would experience an altered flow regime—in some cases flows would be higher due to curtailment of upstream junior water rights, but in others flows would be lower when replacement reservoirs are refilled more frequently in average and wet years during spring runoff. *See* **Denver Ex. 8.b Table 8**.

Heather Thompson

Heather Thompson, P.E.

CERTIFICATE OF SERVICE

I hereby certify that on this 29th day of August 2025, a true and correct copy of the **WRITTEN TESTIMONY OF HEATHER THOMPSON, P.E.** was electronically submitted to the Colorado Water Conservation Board via email to Jackie.Calicchio@coag.gov and the following additional recipients set forth in the Table below on behalf of Denver Water, Northern Water, Aurora Water, Colorado Springs Utilities, and the Homestake Partners..

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